

Level of Functional Literacy Correlated to The Level of Work Readiness of Senior High School (SHS) Immersion Students in Pasig City

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ABSTRACT: This study assessed the socio-demographic profile and level of Technology and Livelihood Education (TLE) functional literacy among senior high school students as a basis for developing a work readiness intervention program. Specifically, it examined the respondents' profiles in terms of age, sex, general academic performance, and availability of TLE-related tools at home, as well as their level of functional literacy in technology and engineering design, food and nutrition, financial literacy, entrepreneurial competence, and agricultural literacy and agri-tech awareness. A descriptive research design was employed involving 406 senior high school students. Data were gathered using a validated researcher-made questionnaire and analyzed using frequency, percentage, and mean. Findings showed that the majority of respondents were 17–18 years old, with male students slightly outnumbering female students. Most respondents demonstrated favorable academic performance, with the largest proportion obtaining grades of 90 and above. In terms of available TLE-related resources at home, students had greater access to common cooking and household tools than to sewing and agricultural equipment. The findings further revealed varying levels of TLE functional literacy across the identified domains. Technology and engineering design literacy, food and nutrition literacy, and financial literacy were assessed as Needs Improvement, indicating areas requiring strengthened practical knowledge and skills. Agricultural literacy and agri-tech awareness reflected a relatively higher level of performance, while entrepreneurial competence was assessed as Very Satisfactory, indicating a notable strength among the respondents. Based on these findings, a work readiness intervention program entitled “Ready for Work: A Work Readiness Intervention Program for Enhancing TLE Functional Literacy among Senior High School Students” was proposed to address identified areas for improvement through hands-on, skill-based, and experiential learning activities. The study concludes that although students demonstrate strengths in entrepreneurial competence and academic performance, targeted instructional support and practical learning opportunities are needed to strengthen TLE functional literacy relevant to employment, entrepreneurship, and lifelong learning. It is recommended that schools provide structured work readiness interventions, expand opportunities for experiential and hands-on learning, and integrate practical financial, technological, and livelihood skills into TLE instruction to better prepare students for future work environments.

KEYWORDS: entrepreneurship, intervention program, senior high school students, TLE functional literacy, vocational education

I. INTRODUCTION

Functional literacy, which encompasses the ability to effectively apply basic skills such as reading comprehension, numeracy, and problem-solving in everyday and professional settings, has emerged as a vital benchmark for educational success and workforce preparedness (Smith, 2022). Although global literacy rates have shown marked improvement, a significant gap remains in the practical application of these skills, particularly in developing nations. In the Philippines, this issue is pronounced: despite high basic literacy levels, a substantial portion of the population continues to face challenges in utilizing literacy skills in real-world contexts.

According to the 2024 Functional Literacy, Education and Mass Media Survey (FLEMMS), approximately 29.2% of Filipinos—equivalent to around 24 million individuals—do not meet the updated criteria for functional literacy, which emphasizes comprehension and contextual application (Philippine Statistics Authority [PSA], 2024). Notably, 21% of Senior High School graduates fall within this category, indicating that nearly 2 million young Filipinos are unable to interpret basic workplace instructions or safety guidelines, despite having completed formal education (PSA, 2024). This gap between educational

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attainment and practical skill readiness poses serious implications for national productivity and economic development, as employers continue to report significant gaps in graduates' ability to perform job-related tasks effectively.

Despite global recognition of the importance of functional literacy—encompassing technology and engineering literacy, digital and information literacy, food and nutrition literacy, financial literacy, entrepreneurial literacy, occupational safety and health literacy, and agricultural literacy—and work readiness, which includes intellectual resources, personality resources, meta-skill resources, and job specific resources, there remains a notable lack of localized empirical evidence linking these competencies among Senior High School (SHS) immersion students in Pasig City (Fasih et al., 2013). National data from the Philippine Statistics Authority (PSA) reveal that approximately 18 million high school graduates between 2019 and 2024 are considered functionally illiterate, unable to comprehend basic written material despite completing formal education (PSA, 2024). However, granular insights at the district level are scarce, particularly in high-employment zones where immersion programs are heavily implemented.

Existing studies often rely on self-assessments or generalized employer feedback, which may not accurately capture the nuanced relationship between functional literacy deficits and specific work-readiness outcomes (Gatta, 2024). This methodological gap limits educators' and policymakers' capacity to design targeted interventions that align classroom instruction with labor market expectations. Student self-assessments provide critical insights into the development of their applied competencies and functional literacy (Organization for Economic Co-operation and Development [OECD], 2023).

Research Question

This part of the study outlined the core inquiry into how the level of TLE functional literacy related to the level of work readiness among Senior High School (SHS) immersion students, guided by demographic profiles and competency-based performance indicators.

This study aimed to examine the relationship between levels of TLE functional literacy and work readiness among Senior High School (SHS) immersion students in Pasig City. It sought to assess how students' literacy competencies aligned with industry expectations and how these insights could guide future workforce development strategies.

Specifically, this study seeks to answer the following questions:

1. What is the socio-demographic profile of the respondents in terms of:
 - 1.1 age;
 - 1.2 sex;
 - 1.3 general academic performance; and
 - 1.4 TLE tools at home
2. What is the level of TLE functional literacy of the students in terms of:
 - 2.1 technology and engineering literacy;
 - 2.2 food and nutrition literacy;
 - 2.3 financial literacy;
 - 2.4 entrepreneurial literacy; and
 - 2.5 agricultural literacy?
3. What is the level of work- readiness of the students in terms of:
 - 3.1 intellectual resources;
 - 3.2 personality resources;
 - 3.3 meta-skill resources; and
 - 3.4 job specific resources?
4. Is there a significant difference in the level of TLE functional literacy among Senior High School Immersion students when grouped according to socio-demographic profile?
5. Is there a significant difference in the level of work readiness of the students when grouped according to socio-demographic profile?
6. Is there a significant relationship between the level of TLE functional literacy and the students' level of work readiness?
7. Based on the findings, what work-readiness intervention program may be proposed?

II. SCOPE AND LIMITATION OF THE STUDY

This part of the study defined the study's boundaries, focusing on Senior High School (SHS) immersion students in Pasig City and examining specific literacy and work-readiness competencies.

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This study was scoped to investigate the correlation between the level of TLE functional literacy and the level of work readiness among Senior High School (SHS) immersion students in Pasig City during 2025-2026. The inquiry was delimited to assessing the 5 (five) components of TLE functional literacy - technology and engineering literacy, food and nutrition literacy, financial literacy, entrepreneurial literacy, and agricultural literacy—and their relationship with 4 (four) work-readiness components - intellectual resources, personality resources, meta-skill resources, and job specific resources (García & Rodríguez, 2025; PSA, 2024).

The respondents were confined to Senior High School (SHS) immersion students from selected public schools within Pasig City, excluding private institutions and other geographic locales. The study focused exclusively on the demographic variables of students (age, sex, general academic performance, and TLE tools at home, as outlined in the problem statement. This study's data collection was delimited to student self-assessments of their applied competencies and functional literacy development (Organisation for Economic Co-operation and Development [OECD], 2023). The analysis employed descriptive and inferential statistics (e.g., Pearson correlation, ANOVA) to test the hypotheses, but it did not extend to a longitudinal examination of the immersion program's long-term outcomes or a causal analysis of curriculum efficacy. The resultant findings and recommendations were specifically contextualized to inform pedagogical strategies within Pasig City's Senior High School (SHS) immersion program.

Framework

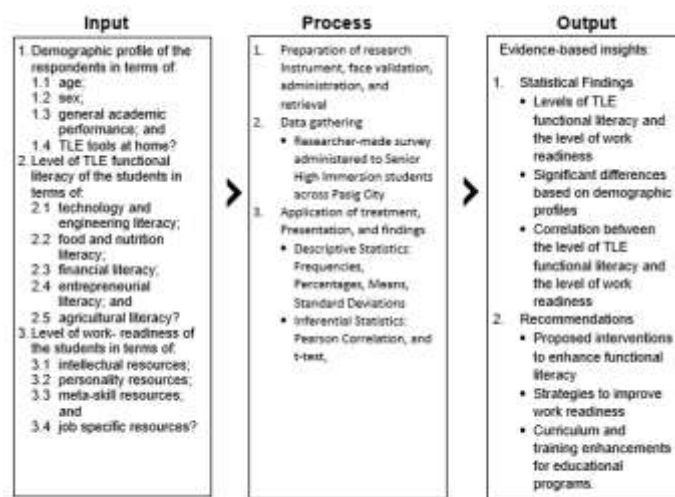


Figure 1: Research Paradigm

This framework organized the inquiry into the determinants of employment preparedness. The framework established that a thorough assessment had to first consider the foundational characteristics of learners, which served as essential contextual variables.

The Input phase captured these variables by defining the demographic composition (Input 1) of the student, including age, sex, general academic performance, and TLE tool at home. These elements were theorized to potentially influence the study's central constructs. The investigation was then directed toward empirically evaluating two primary constructs: the students' level of TLE functional literacy (Input 2), encompassing technology and engineering literacy, digital and information literacy, food and nutrition literacy, financial literacy, entrepreneurial literacy, occupational safety and health literacy, and agricultural literacy; and their corresponding level of work readiness (Input 3), encompassing intellectual resources, personality resources, meta-skill resources, and job specific resources.

The Process phase operationalized this investigation through a methodical sequence. The systematic acquisition of data, facilitated by a validated survey distributed to a defined population of students and teachers, ensured the collection of robust metrics for these variables. The subsequent application of statistical analyses employing both descriptive techniques to summarize the data and inferential methods, including correlation analysis, difference testing, and variance analysis was designed to transcend mere description. This rigorous approach aimed to investigate the strength and significance of the hypothesized relationships and disparities among the variables.

The Output of this analytical process was the conversion of empirical results into applicable insight. The principal outcome, which was the statistical findings (Output 1), was a detailed, evidence-based understanding of the prevailing levels of applied TLE functional literacy and work readiness, and the nature of their interconnection with demographic factors within a specific locale. This understanding immediately informed the secondary outcome: the generation of focused, evidence-grounded conclusions

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and strategic recommendations (Output 2). These proposals were designed to address identified deficiencies, focusing on specific refinements in instructional approaches, curriculum design, and educator training. The ultimate objective of the framework was to enable a more effective alignment of educational preparation with the concurrent necessities of occupational competence and mastered foundational skills, thereby aiming to enhance learner outcomes and mitigate the documented divergence between skill provision and workplace requirements.

Research Design

This study employed a quantitative, non-experimental research design utilizing a correlational and comparative approach to investigate the relationship between TLE functional literacy and work readiness among Senior High School immersion students. A cross-sectional survey method was used to collect data at a single point in time, allowing for the efficient assessment of the levels of these variables and their interconnections (Creswell & Creswell, 2023).

The respondents consisted of a stratified random sample of Senior High School students who were enrolled in or had recently completed the immersion program in Pasig City. This sampling strategy ensured representation across different schools. Data were gathered using a researcher-made survey questionnaire with three main sections: a socio-demographic profile sheet, a validated TLE Functional Literacy Scale (measuring the five domains — technology and engineering literacy, food and nutrition literacy, financial literacy, entrepreneurial literacy, and agricultural literacy), and a Work Readiness Scale (assessing the four resource areas — intellectual resources, personality resources, meta-skill resources, and job-specific resources). The instruments were pilot-tested to ensure reliability and validity.

Descriptive statistics (mean, standard deviation, frequency, and percentage) were used to address research questions 1, 2, and 3, which pertained to profiling the respondents and establishing the levels of TLE functional literacy and work readiness. To answer questions 4 and 5, which examined differences based on demographic profile, inferential statistics such as independent samples t-tests (e.g., for sex) were employed. For research question 6, which sought to determine the relationship between the core variables, Pearson's correlation coefficient was calculated to measure the strength and direction of the relationship between the overall and sub-domain scores of TLE functional literacy and work readiness.

This methodological approach was suitable as it allowed for the systematic quantification of variables and the statistical testing of hypothesized relationships and differences. Vicencio (2025) observed that structured immersion experiences fostered self-confidence, career clarity, and entrepreneurial mindsets, and this design empirically tested such assertions within the specific context of TLE education. The findings directly informed the development of a targeted work-readiness intervention program (research question 7), aimed at bridging identified gaps between student competencies and industry demands in Pasig City.

Research Instrument

The principal instrument for data collection in this research was a researcher-made questionnaire, which was specifically designed to generate quantitative data that directly aligned with the study's objective of examining the predictive relationship between functional literacy and work readiness among Senior High School (SHS) Immersion students across Pasig City.

The research instrument was structured into three distinct segments, each designed to collect data pertinent to the study's specific variables and research objectives.

The first segment comprised a demographic profile to capture essential background characteristics of the senior high school immersion student respondents, including their age, sex, general academic performance, and access to TLE-related tools at home across the specializations of Home Economics, Agri-Fishery Arts, Industrial Arts, and ICT.

The second segment was a researcher-made assessment designed to quantify the respondents' level of TLE functional literacy. This assessment operationalized the construct through five domains: Technology and Engineering Design Literacy, Food and Nutrition Literacy, Financial Literacy, Entrepreneurial Competence, and Agricultural Literacy and Ag-Tech Awareness.

The third segment employed a Likert-scale survey to measure the perceived level of work readiness. This construct was evaluated across four core resource dimensions: Intellectual Resources (e.g., comprehension, calculation, problem-solving), Personality Resources (e.g., initiative, responsibility, perseverance), Meta-Skill Resources (e.g., communication, collaboration, adaptability), and Job-Specific Resources (e.g., technical skills, safety practices, economic use of materials).

This tripartite structure ensured a comprehensive data collection framework that aligned demographic context with direct assessment of functional literacy and self-reported evaluation of preparedness for the workforce.

Data Gathering

To ensure the validity and reliability of data collection, the researcher implemented a structured set of procedures consistent with the study's aim of investigating how functional literacy correlated to work readiness among Senior High School (SHS)

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Immersion students enrolled in Pasig City. Prior to data collection, the research instrument underwent the adviser review and expert panel validation process detailed under Instrument Validation, resulting in a finalized version of the questionnaire.

Once the survey tool was finalized, the researcher sought formal authorization from the Schools Division Superintendent of Pasig City to conduct the research within selected public senior high schools offering an immersion program. Communication was established with school principals and department heads to facilitate administrative coordination and secure their support for the study.

The finalized questionnaire was administered in through a digital platform such as Google Forms. Respondents were given clear verbal and written instructions on how to answer the questionnaire, informed of the confidentiality of their responses, and briefed on the study's goals prior to answering. Data collection was scheduled in close collaboration with school administrators to avoid interference with academic activities. The distribution and retrieval of survey instruments were closely monitored by the researcher or designated assistants to maintain consistency in administration and to provide clarification to respondents when necessary.

Once the data had been collected, responses were organized, coded, and subjected to statistical analysis using software such as SPSS and Microsoft Excel.

Statistical Treatment

This research employed both descriptive and inferential statistical methods to analyze the data gathered from a total of 406 Senior High School (SHS) immersion students in Pasig City through a researcher-made survey questionnaire.

To address Problem 1, which described the socio-demographic profile of respondents—specifically age, sex, general academic performance, and access to TLE tools at home—descriptive statistics such as frequency and percentage distributions were used.

For Problems 2 and 3, focusing on the levels of TLE functional literacy and work readiness, the study computed mean scores and provided corresponding verbal interpretations. TLE functional literacy was evaluated across five domains: technology and engineering, food and nutrition, financial, entrepreneurial, and agricultural literacy. Work readiness was assessed through four dimensions: intellectual, personality, meta-skill, and job-specific resources.

To address Problems 4 and 5, which investigated significant differences in literacy and readiness levels when grouped by socio-demographic profiles, the study employed inferential tests. Specifically, t-tests were used to compare means between two groups (such as sex). These tests determined if the null hypotheses regarding demographic influence should be accepted or rejected at the 0.05 level of significance.

For Problem 6, which examined the relationship between TLE functional literacy and work readiness, Pearson's Product-Moment Correlation Coefficient (r) was the primary tool. This method measured the strength and direction of the association between literacy domains and readiness dimensions, with p-values used to establish statistical significance.

Finally, for Problem 7, the cumulative findings from these descriptive and inferential analyses provided the empirical basis for proposing a targeted work-readiness intervention program.

This comprehensive statistical treatment ensured that each research question was addressed rigorously, enabling the study to generate meaningful insights into the connection between TLE functional literacy and work readiness among SHS immersion students.

III. RESULTS

This chapter presents the data gathered from the 406 respondents, followed by a detailed analysis and interpretation of the results aligned with the study's objectives. It specifically details the socio-demographic profile of the senior high school students in terms of age, sex, and general academic performance. Furthermore, it assesses the availability of TLE tools at home, covering both Home Economics (Food & Garments) and Agri-Fishery Arts.

The chapter also evaluates the students' levels of TLE functional literacy across five key domains: technology and engineering design, food and nutrition, financial literacy, entrepreneurial competence, and agricultural literacy and ag-tech awareness. Alongside these, it measures the students' level of work readiness in terms of intellectual, personality, meta-skill, and job-specific resources.

Finally, this chapter examines significant differences in these variables when grouped by demographic profiles and explores the significant relationship between functional literacy and work readiness.

These findings serve as the foundation for the proposed work readiness intervention program designed to enhance students' practical competencies and workplace skills.

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1. What is the socio-demographic profile of the respondents in terms of:

Table 1.1.

Socio-demographic profile of the respondents by Age

Age	Frequency	Percentage
15 – 16 years old	1	0.25
17 – 18 years old	314	77.34
19 – 21 years old	61	15.02
22 – 29 years old	21	5.17
30 – 49 years old	4	0.99
50 years old and above	5	1.23
Total	406	100%

Table 1.1 shows that the majority of the 406 respondents were 17–18 years old, comprising 314 respondents or 77.34% of the sample. This was followed by those aged 19–21 years old with 61 respondents or 15.02%, while 21 respondents or 5.17% were aged 22–29 years old. The remaining respondents were distributed among the 50 years old and above group with 1.23%, the 30–49 years old group with 0.99%, and the 15–16 years old group with 0.25%. Thus, the sample was predominantly composed of respondents within the 17–18-year-old age range.

The age distribution indicates that the findings of the study primarily represent learners within the 17–18-year-old age group. The presence of older respondents, although relatively small, suggests that the sample also includes learners whose educational trajectories may differ from those of the majority. However, because the study is primarily represented by 17–18-year-old respondents, interpretations of the succeeding findings should recognize that the results may reflect the experiences and characteristics of learners within this age range more strongly than those of older respondents.

The predominance of respondents aged 17–18 is consistent with research involving secondary and high-school learners. For example, a 2021 longitudinal study examining academic performance included high-school students with a mean developmental stage centered around ages 17–18 and found that individual characteristics could be associated with later academic performance (Muenks et al., 2021). Similarly, recent research examining academic performance among middle- and high-school students considered age, gender, and other sociodemographic characteristics as relevant variables in understanding student achievement (Beltran et al., 2022).

Table 1.2.

Socio-demographic profile of the respondents by Sex

Sex	Frequency	Percentage
Male	233	57.39
Female	173	42.61
Total	406	100%

Table 1.2 presents the distribution of respondents according to sex. Of the 406 respondents, 233 or 57.39% were male, while 173 or 42.61% were female. The results therefore show that male respondents constituted the larger proportion of the sample, with a difference of 60 respondents or 14.78 percentage points. Despite this difference, both groups were substantially represented in the study.

The distribution provides representation from both male and female respondents, allowing the overall findings to reflect the experiences of learners from both groups. However, the higher proportion of male respondents should be recognized when interpreting the aggregate results, particularly if subsequent analyses examine relationships or differences involving sex. The distribution itself does not establish that sex caused or influenced the study outcomes; rather, it describes the composition of the respondents included in the investigation.

The inclusion of sex as a demographic characteristic is supported by recent educational research that examines demographic variables when interpreting differences in student outcomes. Beltran et al. (2022), for instance, incorporated gender among several sociodemographic and student-related variables in examining academic performance among middle- and high-school students. Their findings showed that gender was examined alongside other contextual and individual factors rather than treated as an independent explanation of academic performance. This supports the present study's treatment of sex as an important descriptive characteristic while avoiding assumptions that differences in educational outcomes are attributable to sex alone.

Table 1.3

Socio-demographic profile of the respondents in by general performance

General Academic Performance	Frequency	Percentage
90 and above (Outstanding)	188	46.31
85 – 89 (Very Satisfactory)	126	31.03
80 – 84 (Satisfactory)	77	18.97
75 – 79 (Fair)	15	3.69
Below 75 (Needs Improvement)	0	0.00
Total	406	100%

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Table 1.3 presents the general academic performance of the respondents. The largest group consisted of 188 respondents or 46.31% who obtained grades of 90 and above and were classified as Outstanding. This was followed by 126 respondents or 31.03% with grades of 85–89, classified as Very Satisfactory, and 77 respondents or 18.97% with grades of 80–84, classified as Satisfactory. Only 15 respondents or 3.69% obtained grades of 75–79 and were classified as Fair, while none obtained a grade below 75. Overall, 77.34% of the respondents belonged to the Outstanding or Very Satisfactory categories.

The distribution indicates that the respondents generally entered the study with satisfactory to outstanding academic performance. This provides important context when interpreting the succeeding results because the sample was not academically heterogeneous across all performance categories. In particular, the absence of respondents in the Needs Improvement category means that the findings should not be generalized to learners with substantially lower academic standing without additional evidence. At the same time, the academic performance profile should be treated as a descriptive characteristic rather than as evidence that academic grades determine the students' functional literacy.

Recent research supports the relevance of academic performance as an important student characteristic while emphasizing that achievement is associated with multiple individual and contextual factors. Beltran et al. (2022) examined academic performance among middle- and high-school students using sociodemographic, school-related, and student-related variables, illustrating that academic achievement should be interpreted within a broader educational context. Similarly, research on high-school students has shown that individual differences in perseverance can be associated with patterns of academic performance over time (Jachimowicz et al., 2022). These findings support the use of general academic performance as a contextual profile variable without treating it as the sole explanation for students' performance in the present study.

Home Economics—Food and Garments

Table 1.4.1

Availability of Home Economics Tools at Home

Home Economics	Frequency	Percentage
Measuring cups and spoons	272	67.00
Mixing bowls	276	67.98
Kitchen knives (paring, chef's, bread)	309	76.11
Cutting board	312	76.85
Wooden spoon/ladle	245	60.34
Frying pan and cooking pots	300	73.89
Whisk / egg beater	218	53.69
Baking trays and pans	175	43.10
Sewing machine (basic manual or electric)	102	25.12
Fabric scissors and shears	155	38.18
Needles, pins, and pincushion	185	45.57
Tape measure	168	41.38
Flat iron	182	44.83

Note: Percentages do not sum to 100% because respondents could select multiple responses.

Table 1.4.1 presents the availability of Home Economics tools in the respondents' homes. Among food-related tools, the most commonly available were cutting boards (76.85%), kitchen knives (76.11%), and frying pans and cooking pots (73.89%), followed by mixing bowls (67.98%), measuring cups and spoons (67.00%), wooden spoons or ladles (60.34%), and whisks or egg beaters (53.69%). Baking trays and pans were available to 43.10% of respondents. For garment-related tools, needles, pins, and pincushions were available to 45.57%, followed by flat irons at 44.83%, tape measures at 41.38%, fabric scissors and shears at 38.18%, and sewing machines at 25.12%. The figures therefore indicate greater household availability of food-preparation tools than garment-construction tools.

The results suggest that students may have more opportunities to encounter and potentially practice basic food-preparation activities at home than garment-related activities. The comparatively low availability of sewing machines and garment-construction tools may limit students' opportunities for repeated practice outside the classroom. Nevertheless, availability should not be equated with actual use, frequency of practice, or mastery. The results only establish that access to these tools differs across respondents and across Home Economics areas. This finding highlights the importance of ensuring that school-based TLE activities provide sufficient opportunities for students to practice competencies involving tools that may not be readily available in their households.

The importance of access to instructional resources in developing Home Economics skills is supported by recent Philippine research. Batua (2022) examined the utilization of instructional materials in relation to the skill performance of Senior High School students in Home Economics and emphasized the role of instructional resources in practical skill development. Similarly, Lagrisola (2022) noted the importance of Home Economics in developing practical and life skills among young learners and examined home-based learning activities for Senior High School TVL students. These findings provide empirical support for considering students' access to practical resources when discussing their opportunities to develop Home Economics competencies.

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Agri-Fishery Arts

Table 1.4.2

Availability of Agri-Fishery Arts Tools at Home

Agri-Fishery Arts	Frequency	Percentage
Hand trowel	208	51.23
Spade / shovel	125	30.79
Rake	62	15.27
Hoe	66	16.26
Watering can / sprayer	175	43.10
Pruning shears	61	15.02
Garden fork	81	19.95
Seedling trays / pots	111	27.34
Fish net (for aquaculture)	140	34.48
Fish container / basin	146	35.96
Small hand axe / bolo	80	19.70
Working gloves	218	53.69

Note: Percentages do not sum to 100% because respondents could select multiple responses.

Table 1.4.2 presents the availability of Agri-Fishery Arts tools at home. The most commonly available tools were working gloves, reported by 218 respondents or 53.69%, and hand trowels, reported by 208 respondents or 51.23%. These were followed by watering cans or sprayers at 43.10%, fish containers or basins at 35.96%, fish nets at 34.48%, and spades or shovels at 30.79%. The remaining tools had lower levels of availability, including seedling trays or pots at 27.34%, garden forks at 19.95%, small hand axes or bolos at 19.70%, hoes at 16.26%, rakes at 15.27%, and pruning shears at 15.02%. Thus, access to AFA tools was uneven, with only two tools being available to more than half of the respondents.

The findings indicate that many respondents may have limited access to specialized agricultural tools outside the school environment. Although basic tools such as working gloves and hand trowels were relatively common, specialized equipment for cultivation, pruning, and aquaculture was less frequently available. This may affect students' opportunities to obtain repeated hands-on exposure to particular agricultural tasks outside school, although the present data do not establish a direct relationship between tool availability and agricultural competence. Consequently, school-based agricultural activities, demonstrations, practical exercises, and appropriately equipped learning environments remain important for providing students with experiences that may not be consistently available at home.

The importance of agricultural exposure and agricultural literacy among school learners is supported by Cosby et al. (2022), who conducted a systematic review of agricultural literacy among school students and identified continuing concerns regarding students' agricultural knowledge and understanding. The review emphasized the role of agricultural education and learning experiences in developing agricultural literacy. The present findings complement this literature by showing that students' opportunities for agricultural exposure may differ according to the availability of tools in their homes. This reinforces the relevance of providing structured agricultural learning experiences in school, particularly for tools and activities that students may not commonly encounter in their households.

2. What is the level of TLE functional literacy of the students in terms of:

Table 2.1.

The level of TLE functional literacy of the students in terms of technology and engineering design literacy

Indicators	Frequency	Percent
Outstanding	88	21.67
Very Satisfactory	32	7.88
Satisfactory	40	9.85
Fairly	0	0.00
Needs Improvement	246	60.59
Total	406	100
Average	67.78	
SD	22.52	
Verbal Interpretation	Needs Improvement	

Table 2.1 presents the level of TLE functional literacy of the students in terms of technology and engineering design literacy. The findings show that out of 406 students, 246 or 60.59% were classified as Needs Improvement, followed by 88 students or 21.67% who were classified as Outstanding. Meanwhile, 32 students or 7.88% were categorized as Very Satisfactory, while 40 students or 9.85% were classified as Satisfactory. No student was classified under the Fairly category. The obtained average of 67.78 with a standard deviation of 22.52 resulted in an overall verbal interpretation of Needs Improvement. The distribution indicates considerable variation in students' performance, as reflected by the relatively large standard deviation, with most students concentrated in the lowest performance category.

The results indicate that technology and engineering design literacy is an area that requires substantial improvement among the students. Although a portion of the respondents demonstrated outstanding performance, this group represents only about one-fifth of the total respondents, whereas more than half were classified as needing improvement. This pattern suggests that

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students' ability to understand, apply, and use technology and engineering design concepts may not yet be sufficiently developed across the entire group. The findings are particularly relevant because technology and engineering literacy involves not merely familiarity with technological tools but also the capacity to apply knowledge and skills to practical problems and real-life situations. Current technology and engineering literacy frameworks similarly emphasize students' ability to apply technological and engineering knowledge in authentic contexts rather than simply recall concepts (Reed et al., 2022; National Center for Education Statistics, 2026).

The result suggests a need for learning experiences in TLE that provide students with more opportunities to engage in actual design, problem-solving, construction, testing, and evaluation activities. The predominance of the Needs Improvement category may indicate that students require greater exposure to authentic and hands-on activities in which they can connect theoretical concepts with practical applications. Engineering design activities may be particularly useful because they allow learners to identify problems, generate possible solutions, develop or test designs, and evaluate the results. A 2023 study involving secondary students found that engineering design process activities incorporated through blended learning provided opportunities for students to engage in individual hands-on and collaborative learning experiences (Tseng et al., 2023). Thus, the present findings support the need to strengthen experiential and application-oriented activities within TLE instruction.

The findings are consistent with recent literature emphasizing the importance of developing technology and engineering literacy through authentic learning experiences. Usnia et al. (2021), in examining students' initial technology and engineering literacy, reported that substantial proportions of students were situated in low or moderate performance categories and recommended learning activities involving design and technological processes to strengthen critical thinking and problem-solving abilities. Similarly, Reed et al. (2022) explained that technological and engineering literacy aims to help students understand, use, and make informed decisions about technologies encountered in everyday life. More recent work on engineering design education also emphasizes that students benefit from opportunities to define problems, evaluate solutions, and develop models or designs (Barak et al., 2022). Therefore, the Needs Improvement result in the present study underscores the importance of strengthening practical, design-based, and problem-centered learning activities in TLE.

Table 2.2.

The level of TLE functional literacy of the students in terms of food and nutrition literacy

Indicators	Frequency	Percent
Outstanding	68	16.75
Very Satisfactory	28	6.90
Satisfactory	32	7.88
Fairly	0	0.00
Needs Improvement	278	68.47
Total	406	100
Average	61.53	
SD	23.25	
Verbal Interpretation	Needs Improvement	

Table 2.2 presents the level of TLE functional literacy of the students in terms of food and nutrition literacy. Among the 406 respondents, 278 or 68.47% were classified as Needs Improvement, representing the largest proportion of the students. This was followed by 68 students or 16.75% who were classified as Outstanding, 32 students or 7.88% as Satisfactory, and 28 students or 6.90% as Very Satisfactory. No student was classified under the Fairly category. The students obtained an average of 61.53 and a standard deviation of 23.25, resulting in an overall verbal interpretation of Needs Improvement. The findings therefore indicate that food and nutrition literacy represents another area in which a considerable proportion of students have yet to demonstrate the expected level of functional knowledge and skills.

The distribution demonstrates that more than two-thirds of the respondents were categorized as needing improvement in food and nutrition literacy. While 16.75% of the students achieved an Outstanding classification, the considerably larger proportion in the Needs Improvement category suggests that high performance was not representative of the majority of the respondents. The average score of 61.53 further supports the interpretation that students' performance in this area remains below the expected level. The standard deviation of 23.25 also indicates noticeable variation in performance, suggesting that students possess differing levels of food- and nutrition-related knowledge and skills.

The result points to the need for TLE learning activities that develop not only knowledge about food and nutrition but also the practical skills required to make informed food-related decisions. Students may benefit from activities involving meal planning, food preparation, nutrition-label interpretation, food safety, budgeting for nutritious meals, and evaluation of food choices. Such activities can transform food and nutrition literacy from a primarily conceptual topic into a functional competency that students can apply in everyday situations. Since food decisions are encountered regularly outside the classroom, strengthening these competencies may contribute to students' ability to make more informed and responsible choices regarding food and health.

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The present finding is supported by Carroll et al. (2022), whose systematic review of food and nutrition literacy assessment tools for children and adolescents emphasized that developing these competencies at a young age is important for skill retention, confidence in food practices, and lifelong healthy eating habits. The review also showed that food and nutrition literacy encompasses several dimensions rather than a single area of knowledge, including food skills, nutrition knowledge, and the ability to interpret food-related information. Likewise, a systematic review of adolescents' food literacy found that several studies reported positive associations between food literacy and dietary practices, particularly where adolescents had greater food knowledge and participated in food preparation activities (Carroll et al., 2023). These findings suggest that the Needs Improvement result in the present study warrants greater emphasis on practical and context-based food and nutrition activities within TLE instruction.

Table 2.3.

The level of TLE functional literacy of the students in terms of financial literacy

Indicators	Frequency	Percent
Outstanding	0	0.00
Very Satisfactory	1	0.25
Satisfactory	144	35.47
Fairly	0	0.00
Needs Improvement	261	64.29
Total	406	100
Average	65.58	
SD	18.20	
Verbal Interpretation	Needs Improvement	

Table 2.3 presents the level of TLE functional literacy of the students in terms of financial literacy. The results reveal that among the 406 respondents, 261 or 64.29% were classified as Needs Improvement, while 144 students or 35.47% were classified as Satisfactory. Only one student or 0.25% obtained a Very Satisfactory classification, and no student was classified as Outstanding or Fairly. The overall average was 65.58, with a standard deviation of 18.20, resulting in a verbal interpretation of Needs Improvement. The findings indicate that financial literacy is an area in which the majority of students have not yet reached the desired level of functional competence.

The distribution shows a clear concentration of respondents in the Needs Improvement category. More than three-fifths of the students were placed in this category, whereas slightly more than one-third were classified as Satisfactory. The very small proportion classified as Very Satisfactory and the absence of respondents in the Outstanding category further indicate that high-level financial literacy was uncommon within the group. The average score of 65.58 reinforces the overall classification, while the standard deviation of 18.20 indicates variation in the students' performance, although the spread is somewhat smaller than that observed in the other dimensions presented in Tables 2.1 and 2.2.

The findings suggest that students need increased opportunities to apply financial concepts to practical and age-appropriate situations. TLE instruction may incorporate activities involving budgeting, saving, spending decisions, basic investment concepts, comparison of prices, responsible borrowing, consumer awareness, and financial planning. These activities can help students move beyond knowing financial terms toward using financial knowledge in actual decision-making contexts. Given that students will eventually manage personal and household resources, developing functional financial literacy during secondary education can help prepare them for increasingly complex financial responsibilities.

The result is consistent with the Philippine Department of Education's continuing emphasis on financial education. DepEd Order No. 022, Series of 2021 strengthened the integration of financial education into the K to 12 curriculum, covering concepts such as earning, saving, spending, budgeting, investing, planning, consumer protection, and entrepreneurship (Department of Education, 2021). DepEd subsequently partnered with RCBC in 2022 to implement a financial literacy initiative for teachers and Senior High School learners, emphasizing that learners need financial knowledge to make sound decisions as their responsibilities increase (Department of Education, 2022). These initiatives provide a strong contextual basis for addressing the present Needs Improvement finding by incorporating more practical financial decision-making activities into TLE instruction.

Table 2.4.

The level of TLE functional literacy of the students in terms of entrepreneurial competence

Indicators	Frequency	Percent
Outstanding	304	74.88
Very Satisfactory	15	3.69
Satisfactory	14	3.45
Fairly	0	0.00
Needs Improvement	73	17.98
Total	406	100
Average	87.52	
SD	23.40	
Verbal Interpretation	Very Satisfactory	

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Table 2.4 presents the level of TLE functional literacy of the students in terms of entrepreneurial competence. The findings show that 304 out of 406 students or 74.88% were classified as Outstanding, making this the dominant category. Meanwhile, 15 students or 3.69% were classified as Very Satisfactory, 14 students or 3.45% as Satisfactory, and 73 students or 17.98% as Needs Improvement. No student was classified under the Fairly category. The students obtained an average of 87.52 and a standard deviation of 23.40, which resulted in an overall verbal interpretation of Very Satisfactory. Compared with the other dimensions, entrepreneurial competence demonstrated a substantially stronger overall result.

The findings demonstrate that entrepreneurial competence is a relative strength among the respondents. Nearly three-fourths of the students attained an Outstanding classification, while only a relatively small proportion fell under the Very Satisfactory and Satisfactory categories. Although 17.98% of the students were still classified as needing improvement, the overall average of 87.52 places the group within the Very Satisfactory level. The standard deviation of 23.40 indicates substantial differences among individual students despite the generally high overall performance. This suggests that while entrepreneurial competencies are strongly demonstrated by the majority, some students may still require additional opportunities to develop these skills.

The high level of entrepreneurial competence suggests that students may already possess or have developed competencies associated with initiative, opportunity recognition, goal-setting, creativity, and the application of ideas toward practical activities. This strength may be further developed through authentic TLE experiences such as product development, business planning, school-based enterprises, marketing activities, costing, selling, and project-based entrepreneurship.

The finding is supported by Philippine studies emphasizing the importance of entrepreneurial competencies among students. Buitrago et al. (2022) found that Accountancy, Business, and Management students demonstrated strong traits in areas such as goal-setting and information-seeking, while competencies such as persuasion, networking, and risk-taking were comparatively less developed. In a study of Filipino Grade 12 students, Delim et al. (2022) found that entrepreneurial competencies and entrepreneurial mindset partially mediated the relationship between entrepreneurship education and entrepreneurial intention, highlighting the role of education, knowledge, and experience in developing entrepreneurial competencies. Similarly, Obregon et al. (2023) specifically examined personal entrepreneurial competencies among TLE-Cookery students, demonstrating the relevance of entrepreneurship competencies within technical-vocational education. Thus, the Very Satisfactory result obtained in the present study suggests that entrepreneurial competence is a notable area of strength that can be sustained and further enriched through experiential entrepreneurship activities.

Table 2.5.
The level of TLE functional literacy of the students in terms of agricultural literacy and ag-tech awareness

Indicators	Frequency	Percent
Outstanding	181	44.58
Very Satisfactory	63	15.52
Satisfactory	41	10.10
Fairly	0	0.00
Needs Improvement	121	29.80
Total	406	100
Average	79.16	
SD	23.37	
Verbal Interpretation	Fair	

Table 2.5 presents the level of TLE functional literacy of the students in terms of agricultural literacy and ag-tech awareness. The results indicate that 181 students or 44.58% were classified as Outstanding, followed by 63 students or 15.52% classified as Very Satisfactory. Meanwhile, 41 students or 10.10% were classified as Satisfactory, while 121 students or 29.80% were classified as Needs Improvement. No respondent was classified under the Fairly category. The overall average was 79.16, with a standard deviation of 23.37, resulting in a verbal interpretation of Fair based on the stated interpretation scale. The distribution shows that although the largest single group achieved an Outstanding classification, nearly one-third of the respondents still require improvement.

The findings are relevant to the concerns identified by Cosby et al. (2022), who reviewed agricultural literacy research among school students and found continuing concerns regarding students' agricultural knowledge and understanding. Their review emphasized that agricultural literacy has developed from a simple awareness of agriculture toward a deeper understanding that can be developed through formal schooling as well as informal experiences. Recent Philippine evidence also demonstrates the importance of strengthening agricultural literacy among secondary learners. Villareal reported that Grade 8 and Grade 10 students required additional knowledge in agricultural crop production and examined the relationship between students' agricultural literacy and teachers' technological, pedagogical, and content knowledge in agriculture. These findings support the need for TLE programs to combine agricultural concepts with relevant technological applications so that students develop both agricultural understanding and awareness of contemporary agrotechnology.

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3. What is the level of work-readiness of the students in terms of:

Table 3.1

The level of work readiness of the students in terms of intellectual resources

Indicators	MEAN	SD	VI
1. I can read and follow safety signs and labels on tools and equipment.	3.25	0.70	SA
2. I can interpret simple diagrams, manuals, or recipes for tasks.	3.02	0.65	A
3. I can calculate costs and measurements accurately for work tasks.	2.96	0.62	A
4. I can identify the correct tool or material needed for a task.	2.98	0.63	A
5. I can troubleshoot simple errors in equipment or processes.	2.83	0.63	A
6. I can understand and apply safety guidelines in TLE tasks.	3.13	0.68	A
7. I can evaluate if my work output meets required standards.	3.04	0.67	A
8. I can connect TLE concepts (e.g., budgeting, nutrition) to real-life situations.	3.04	0.68	A
9. I can solve simple technical or practical problems in TLE tasks.	2.94	0.63	A
10. I can use basic digital tools (e.g., calculators, online guides) to support TLE tasks.	3.08	0.68	A
General Assessment	3.03	0.51	A

Note:
3.25 – 4.00 Strongly Agree (SA)
1.75 – 2.49 Disagree (D)
2.50 – 3.24 Agree (A)
1.00 – 1.74 Strongly Disagree (SD)

Table 3.1 shows that the students generally agreed that they possessed the intellectual resources needed for TLE-related work, as indicated by the overall mean of 3.03 (SD = 0.51), verbally interpreted as Agree. Among the indicators, the highest-rated competency was the ability to read and follow safety signs and labels on tools and equipment (M = 3.25, SD = 0.70), which reached Strongly Agree, followed by the ability to understand and apply safety guidelines (M = 3.13, SD = 0.68) and the use of basic digital tools to support TLE tasks (M = 3.08, SD = 0.68).

In contrast, troubleshooting simple errors in equipment or processes received the lowest rating (M = 2.83, SD = 0.63), followed by solving simple technical or practical problems (M = 2.94, SD = 0.63) and accurately calculating costs and measurements (M = 2.96, SD = 0.62).

These results suggest that students' intellectual readiness is relatively stronger in recognizing safety requirements and accessing basic information but less developed in independently diagnosing problems, applying technical reasoning, and making accurate work-related decisions. This distinction has practical implications for TLE work immersion because workplace readiness requires more than knowing procedures; students must also be able to interpret information, solve problems, and adapt knowledge to actual work situations. Kolb's experiential learning perspective emphasizes the importance of connecting concrete experience with reflection, conceptualization, and active experimentation in developing practical problem-solving abilities (Kolb, 2015).

Similarly, the Department of Education (2017) positions work immersion as an opportunity for students to connect classroom learning with real workplace applications, while Vicencio (2025) reported that structured immersion experiences can strengthen students' confidence, career clarity, and entrepreneurial mindsets.

Therefore, TLE instruction and work immersion should provide more authentic troubleshooting exercises, technical simulations, measurement and costing activities, and guided problem-solving tasks so that students can progress from following instructions to independently diagnosing and resolving practical workplace problems.

Table 3.2

The level of work readiness of the students in terms of personality resources

Indicators	MEAN	SD	VI
1. I follow safety and cleanliness rules when working in the workshop or kitchen.	3.26	0.72	SA
2. I finish my assigned TLE tasks on time.	3.06	0.66	A
3. I show initiative in starting practical tasks without waiting for instructions.	2.96	0.69	A
4. I am confident in handling simple tools and equipment.	3.05	0.68	A
5. I accept corrections from teachers or peers to improve my work.	3.27	0.68	SA
6. I value honesty when reporting costs, measurements, or outputs.	3.22	0.70	A
7. I show patience and perseverance when tasks are difficult.	3.18	0.69	A
8. I keep my work area neat and organized.	3.19	0.69	A
9. I respect the opinions and contributions of group members in TLE activities.	3.25	0.70	SA
10. I show responsibility when borrowing and returning tools or materials.	3.21	0.69	A
General Assessment	3.17	0.58	A

Note:
3.25 – 4.00 Strongly Agree (SA)
1.75 – 2.49 Disagree (D)
2.50 – 3.24 Agree (A)
1.00 – 1.74 Strongly Disagree (SD)

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Table 3.2 indicates that the students generally agreed that they demonstrated positive personality resources relevant to work readiness, with an overall mean of 3.17 (SD = 0.58), verbally interpreted as Agree, the highest general assessment among the four work-readiness dimensions.

The highest-rated indicator was accepting corrections from teachers or peers to improve their work (M = 3.27, SD = 0.68), followed by following safety and cleanliness rules (M = 3.26, SD = 0.72) and respecting the opinions and contributions of group members (M = 3.25, SD = 0.70), all of which were interpreted as Strongly Agree.

The lowest-rated indicator was showing initiative in starting practical tasks without waiting for instructions (M = 2.96, SD = 0.69), although it remained within the Agree category. The results indicate that students' strengths lie in receptiveness to feedback, responsible workplace behavior, safety consciousness, and respect for others, while initiative and independent action represent a comparatively less developed area.

This is practically significant because students who depend heavily on instructions may perform assigned tasks but may have difficulty responding proactively to unfamiliar workplace situations. Personality resources are important components of work readiness because employers value professionalism, reliability, ethical conduct, resilience, and adaptability alongside technical competence.

The study's RRL notes that work attitudes are increasingly regarded as important workplace attributes, while the Philippine Business for Education (2024) emphasizes integrity, resilience, and work ethic as qualities sought by employers. In addition, Jauharah and Nikmah (2025) associate entrepreneurial literacy with the development of resilience and initiative, suggesting that learning experiences requiring students to make decisions, take responsibility, and persist through challenges can strengthen personal work characteristics. Thus, TLE and immersion activities should deliberately incorporate tasks that require students to initiate activities, make appropriate decisions, accept constructive feedback, demonstrate perseverance, and assume responsibility for outcomes rather than merely completing teacher-directed instructions.

Table 3.3 shows that the students generally agreed that they possessed meta-skill resources needed for work readiness, with an overall mean of 3.11 (SD = 0.56), verbally interpreted as Agree. All indicators received Agree ratings, with means ranging from 3.07 to 3.19.

Table 3.3
The level of work readiness of the students in terms of meta-skill resources

Indicators	MEAN	SD	VI
1. I can communicate instructions clearly during group TLE tasks.	3.07	0.68	A
2. I can write simple records like recipes, expenses, or production logs.	3.11	0.64	A
3. I work well with others during group projects in TLE.	3.10	0.67	A
4. I listen carefully to instructions before doing practical work.	3.19	0.67	A
5. I manage my time well when doing cooking, carpentry, or other tasks.	3.07	0.66	A
6. I adjust when plans or instructions in a TLE activity change.	3.09	0.63	A
7. I help resolve group conflicts during practical work.	3.07	0.65	A
8. I can use a cellphone, computer, or calculator for TLE-related activities.	3.12	0.66	A
9. I can set priorities when there are multiple tasks to finish.	3.11	0.65	A
10. I continue learning even when I encounter mistakes in TLE work.	3.16	0.66	A
General Assessment	3.11	0.56	A

Note:
3.25 – 4.00 Strongly Agree (SA)
1.75 – 2.49 Disagree (D)
2.50 – 3.24 Agree (A)
1.00 – 1.74 Strongly Disagree (SD)

The highest-rated competency was listening carefully to instructions before performing practical work (M = 3.19, SD = 0.67), followed by continuing to learn after encountering mistakes (M = 3.16, SD = 0.66) and using a cellphone, computer, or calculator for TLE-related activities (M = 3.12, SD = 0.66). The comparatively lowest ratings were obtained for communicating instructions clearly during group tasks (M = 3.07, SD = 0.68), managing time during practical activities (M = 3.07, SD = 0.66), and helping resolve group conflicts (M = 3.07, SD = 0.65).

These results indicate that students generally demonstrate learning orientation and attentiveness but may need further development in communication, time management, and interpersonal problem resolution. Such gaps have practical implications because workplace environments require employees to coordinate with others, manage competing responsibilities, communicate information accurately, and respond constructively to disagreements.

The study's RRL explains that meta-skill resources are developed through adaptability, innovation, continuous learning, and problem-solving. Salanguste (2025) associates digital literacy with continuous learning and technological adaptability, while Flores and Dela Cruz (2025) emphasize the role of technology literacy in innovation and solution development. The constructivist

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perspective presented in the study likewise supports collaborative and project-based learning because practical and social interaction allows learners to develop competencies that resemble workplace demands (Smith & Jones, 2022).

Therefore, TLE instruction should incorporate collaborative projects, rotating group responsibilities, time-bound practical activities, peer communication exercises, conflict-resolution scenarios, and reflective activities that require students to adjust their strategies and learn from mistakes. Such experiences can strengthen transferable skills that students can apply across different occupations and workplace contexts.

Table 3.4

The level of work readiness of the students in terms of job-specific resources

Indicators	MEAN	SD	VI
1. I can safely use basic hand tools in TLE (e.g., hammer, saw, knife).	3.10	0.66	A
2. I can follow step-by-step procedures in a recipe, project, or activity.	3.17	0.67	A
3. I can apply simple carpentry, cooking, or sewing skills learned in TLE.	3.03	0.66	A
4. I maintain cleanliness and order in my kitchen, farm, or workshop area.	3.17	0.67	A
5. I can observe basic food safety and occupational safety practices.	3.17	0.67	A
6. I can make simple financial records like income and expenses for projects.	3.07	0.63	A
7. I can use materials economically when working on TLE tasks.	3.04	0.65	A
8. I can repair or maintain simple tools after use.	3.01	0.65	A
9. I can perform basic livelihood tasks (e.g., planting, food prep, selling products).	3.06	0.67	A
10. I can follow health and safety rules required in specific TLE activities.	3.21	0.67	A
General Assessment	3.10	0.56	A

Note:
3.25 – 4.00 Strongly Agree (SA)
1.75 – 2.49 Disagree (D)
2.50 – 3.24 Agree (A)
1.00 – 1.74 Strongly Disagree (SD)

Table 3.4 indicates that the students generally agreed that they possessed the job-specific resources required for TLE-related practical activities, with an overall mean of 3.10 (SD = 0.56), verbally interpreted as Agree. The highest-rated competency was following health and safety rules required in specific TLE activities (M = 3.21, SD = 0.67), followed by following step-by-step procedures, maintaining cleanliness and order, and observing basic food and occupational safety practices, each with a mean of 3.17.

The lowest-rated indicator was the ability to repair or maintain simple tools after use (M = 3.01, SD = 0.65), followed by applying simple carpentry, cooking, or sewing skills (M = 3.03, SD = 0.66) and using materials economically (M = 3.04, SD = 0.65).

The findings suggest that students are relatively confident in following established procedures and safety requirements but may need additional practice in technical maintenance, resource efficiency, and the independent application of practical skills. This distinction is important because job-specific readiness requires students to transfer classroom-based competencies into actual workplace tasks.

The study's RRL describes job-specific resources as practical competencies developed through industry-aligned training, including technical skills, agricultural competencies, and occupational safety knowledge. The Department of Education (2017) similarly emphasizes the role of work immersion in providing practical application of competencies, while Vicencio (2025) found that structured immersion experiences can strengthen students' understanding of professional environments and confidence in applying their skills.

The literature also emphasizes the importance of occupational safety and risk awareness as components of practical workplace competence (Turkish Ministry of Health, 2025). Therefore, TLE instruction and work immersion should provide repeated hands-on opportunities for tool maintenance, equipment care, material conservation, technical procedures, and authentic livelihood tasks while continuing to reinforce the students' existing strength in health and safety practices.

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4. Is there a significant difference in the level of TLE functional literacy among Senior High School Immersion students when grouped according to socio-demographic profile?

Table 4.1.
Significant difference in the level of TLE functional literacy among Senior High School Immersion students when grouped according to socio-demographic profile in terms of Age

Age	Kruskal-Wallis H	p-value	Remarks	Decision
Technology and Engineering Design Literacy	8.159	0.148	Not Significant	Fail to reject the H_0
Food and Nutrition Literacy	7.413	0.192	Not Significant	Fail to reject the H_0
Financial Literacy	11.448	0.043	Significant	Reject the H_0
Entrepreneurial Competence	13.465	0.019	Significant	Reject the H_0
Agricultural Literacy and Ag-Tech Awareness	25.058	0.000	Significant	Reject the H_0

Table 4.1 presents the test of significant differences in the level of TLE functional literacy among Senior High School Immersion students when grouped according to age. The Kruskal-Wallis H test was used to determine whether significant differences existed among the age groups across the five dimensions of TLE functional literacy.

The results indicate that technology and engineering design literacy did not differ significantly according to age, with a Kruskal-Wallis H value of 8.159 and a p-value of 0.148. Since the p-value is greater than the 0.05 level of significance, the null hypothesis was accepted. Similarly, food and nutrition literacy showed no significant difference across age groups, with $H = 7.413$ and $p = 0.192$. Thus, the null hypothesis was also accepted for this dimension.

Overall, the findings demonstrate that the relationship between age and TLE functional literacy was dimension-specific. Age was not associated with significant differences in technology and engineering design literacy or food and nutrition literacy, but significant differences were observed in financial literacy, entrepreneurial competence, and agricultural literacy and agri-tech awareness. These results suggest that students' age may be associated with variations in selected areas of TLE functional literacy, while other areas appear to be relatively consistent across the age groups represented in the study.

Table 4.2.
Significant difference in the level of TLE functional literacy among Senior High School Immersion students when grouped according to socio-demographic profile in terms of Sex

Sex	n	Number of Functionally Literate	Proportion (p)	Z-value	p-value	Remarks	Decision
Male	176	129	0.733	-0.23	0.818	Not Significant	Accept H_0
Female	230	171	0.743				

Table 4.2 presents the test of significant differences in the proportion of functionally literate Senior High School Immersion students when grouped according to sex. The results show that among the 176 male respondents, 129 were identified as functionally literate, corresponding to a proportion of 0.733. Among the 230 female respondents, 171 were identified as functionally literate, corresponding to a slightly higher proportion of 0.743.

The difference between the proportions of functionally literate male and female students was minimal. The statistical test yielded a Z-value of -0.23 with a p-value of 0.818. Since the p-value is greater than the 0.05 level of significance, the difference in the proportions was not statistically significant. Therefore, the null hypothesis was not rejected.

The findings indicate that the proportion of functionally literate students was generally comparable between male and female respondents. Although female students had a slightly higher observed proportion of functional literacy than male students, the difference was too small to be considered statistically meaningful based on the statistical test employed.

Overall, the results suggest that sex was not significantly associated with the proportion of functionally literate students in the study. Thus, the level of TLE functional literacy, as represented by the proportion classified as functionally literate, did not significantly differ between male and female Senior High School Immersion students.

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Table 4.3.
Significant difference in the level of TLE functional literacy among Senior High School Immersion students when grouped according to socio-demographic profile in terms of General Academic Performance

General Academic Performance	Kruskal-Wallis H	p-value	Remarks	Decision
Technology and Engineering Design Literacy	16.772	0.001	Significant	Reject the Ho
Food and Nutrition Literacy	33.270	0.000	Significant	Reject the Ho
Financial Literacy	58.790	0.000	Significant	Reject the Ho
Entrepreneurial Competence	67.533	0.000	Significant	Reject the Ho
Agricultural Literacy and Ag-Tech Awareness	50.076	0.000	Significant	Reject the Ho

Table 4.3 presents the test of significant differences in the level of TLE functional literacy among Senior High School Immersion students when grouped according to general academic performance. The Kruskal-Wallis H test was used to determine whether significant differences existed among the academic performance groups across the five dimensions of TLE functional literacy.

Among the five dimensions, entrepreneurial competence yielded the highest H value ($H = 67.533$), while technology and engineering design literacy yielded the lowest ($H = 16.772$). However, the magnitude of the H statistic should not be interpreted as a measure of the strength or direction of the difference. Rather, it reflects the test statistic associated with the comparison across groups. The significant p-values establish that differences exist, but they do not identify which specific academic performance groups differ from one another.

Overall, the findings demonstrate that general academic performance was significantly associated with differences in all five dimensions of TLE functional literacy. Thus, the null hypothesis was rejected for technology and engineering design literacy, food and nutrition literacy, financial literacy, entrepreneurial competence, and agricultural literacy and agri-tech awareness. These results indicate that TLE functional literacy varied significantly across students with different levels of general academic performance. However, post hoc pairwise comparisons would be necessary to determine specifically which academic performance groups differed from one another.

Table 4.4.
Significant difference in the level of TLE functional literacy among Senior High School Immersion students when grouped according to socio-demographic profile in terms of TLE Tools at home (Home Economics)

TLE Tools at home (Home Economics)	Kruskal-Wallis H	p-value	Remarks	Decision
Technology and Engineering Design Literacy	41.887	0.000	Significant	Reject the Ho
Food and Nutrition Literacy	51.224	0.000	Significant	Reject the Ho
Financial Literacy	91.024	0.000	Significant	Reject the Ho
Entrepreneurial Competence	115.554	0.000	Significant	Reject the Ho
Agricultural Literacy and Ag-Tech Awareness	78.521	0.000	Significant	Reject the Ho

Table 4.4 presents the test of significant differences in the level of TLE functional literacy among Senior High School Immersion students when grouped according to the availability of TLE tools at home in Home Economics. The Kruskal-Wallis H test was used to determine whether significant differences existed across the groups based on the availability of Home Economics tools for each dimension of TLE functional literacy.

The results show that technology and engineering design literacy differed significantly across the groups, with a Kruskal-Wallis H value of 41.887 and a p-value of $< .001$. Since the p-value is less than the 0.05 level of significance, the null hypothesis was rejected. Likewise, food and nutrition literacy showed a statistically significant difference, with $H = 51.224$, $p < .001$, resulting in the rejection of the null hypothesis.

Overall, the findings indicate that the level of TLE functional literacy significantly differed across the groups based on the availability of Home Economics tools at home in all five dimensions assessed. The null hypothesis was therefore rejected for technology and engineering design literacy, food and nutrition literacy, financial literacy, entrepreneurial competence, and agricultural literacy and agri-tech awareness. These results suggest that differences in students' access to Home Economics tools at home were associated with differences in their TLE functional literacy scores. However, post hoc pairwise comparisons would be necessary to determine the specific tool-availability groups responsible for the significant differences.

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Table 4.5.

Significant difference in the level of TLE functional literacy among Senior High School Immersion students when grouped according to socio-demographic profile in terms of TLE Tools at home (Agri-Fishery Arts)

TLE Tools at home (Agri-Fishery Arts)	Kruskal-Wallis H	p-value	Remarks	Decision
Technology and Engineering Design Literacy	15.359	0.167	Not Significant	Fail to reject the H_0
Food and Nutrition Literacy	13.560	0.258	Not Significant	Fail to reject the H_0
Financial Literacy	17.355	0.098	Not Significant	Fail to reject the H_0
Entrepreneurial Competence	28.647	0.003	Significant	Reject the H_0
Agricultural Literacy and Ag-Tech Awareness	18.389	0.078	Not Significant	Fail to reject the H_0

Table 4.5 presents the test of significant differences in the level of TLE functional literacy among Senior High School Immersion students when grouped according to the availability of TLE tools at home in Agri-Fishery Arts (AFA). The Kruskal-Wallis H test was used to determine whether significant differences existed across the groups based on the availability of AFA tools for each dimension of TLE functional literacy.

The results show that technology and engineering design literacy did not differ significantly across the groups, with a Kruskal-Wallis H value of 15.359 and a p-value of 0.167. Since the p-value is greater than the 0.05 level of significance, the null hypothesis was not rejected. Similarly, food and nutrition literacy showed no statistically significant difference, with $H = 13.560$, $p = 0.258$. Therefore, the null hypothesis was not rejected for this dimension.

Overall, the findings indicate that the availability of Agri-Fishery Arts tools at home was significantly associated with differences in entrepreneurial competence, but not with technology and engineering design literacy, food and nutrition literacy, financial literacy, or agricultural literacy and agri-tech awareness. Thus, the null hypothesis was rejected only for entrepreneurial competence and was not rejected for the other four dimensions. If specific AFA tool-availability groups are to be identified as significantly different from one another, appropriate post hoc pairwise comparisons would be required.

5. Is there a significant difference in the level of work readiness of the students when grouped according to socio-demographic profile?

Table 5.1.

Significant difference in the level of work readiness of the students when grouped according to socio-demographic profile in terms of Age

Age	Kruskal-Wallis H	p-value	Remarks	Decision
Intellectual resources	11.287	0.046	Significant	Reject the H_0
Personality resources	5.563	0.361	Not Significant	Fail to reject the H_0
Meta-skill resources	11.747	0.038	Significant	Reject the H_0
Job specific resources	7.248	0.203	Not Significant	Fail to reject the H_0

Table 5.1 presents the results of the Kruskal-Wallis H test examining whether the students' work readiness differed significantly when grouped according to age. The findings indicate significant differences in intellectual resources ($H = 11.287$, $p = .046$) and meta-skill resources ($H = 11.747$, $p = .038$), as both p-values are below the .05 level of significance. Thus, the null hypothesis was rejected for these two dimensions. In contrast, no significant differences were found in personality resources ($H = 5.563$, $p = .361$) and job-specific resources ($H = 7.248$, $p = .203$), resulting in failure to reject the null hypothesis for these dimensions. The results suggest that age was associated with differences in selected cognitive and transferable aspects of work readiness but did not produce statistically significant differences in students' personality-related or job-specific resources.

The significant difference in intellectual resources may indicate that students from different age groups vary in their perceived ability to interpret information, solve practical problems, use technical knowledge, and apply TLE concepts to work-related situations. Similarly, the significant difference in meta-skill resources suggests that age may be associated with differences in communication, adaptability, time management, collaboration, and continuous learning. These findings are consistent with the study's literature review, which emphasizes that work readiness involves not only technical competencies but also transferable skills such as adaptability, problem-solving, communication, and continuous learning. Salanguste (2025) and Flores and Dela Cruz (2025) particularly highlight the importance of digital literacy, adaptability, and innovation in preparing learners for changing workplace requirements.

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The absence of significant differences in personality and job-specific resources suggests that these competencies may be developed through common learning experiences rather than age alone. TLE instruction, practical activities, and work immersion expose students to safety practices, responsibility, procedural compliance, and occupational tasks regardless of their age. The Department of Education (2017) emphasizes work immersion as an opportunity for learners to apply competencies in authentic workplace environments, while Vicencio (2025) found that structured immersion experiences can contribute to students' confidence, career clarity, and entrepreneurial development. Nevertheless, because the Kruskal-Wallis test only establishes whether differences exist and does not identify the specific groups responsible for those differences, post hoc pairwise comparisons should be conducted before making conclusions about which age groups differ from one another.

Table 5.2.
Significant difference in the level of work readiness of the students when grouped according to socio-demographic profile in terms of Sex

Sex	n	Number of Functionally Literate	Proportion (p)	Z-value	p-value	Remarks	Decision
Male	176	132	0.750	-0.66	0.509	Not Significant	Accept Ho
Female	230	178	0.774				

Table 5.2 presents the test of difference in the proportion of students identified as functionally literate or work-ready when grouped according to sex. Based on the figures presented in the table, 132 of 176 male students were identified as functionally literate, giving a proportion of .750, while 178 of 230 female students were identified as functionally literate, giving a proportion of .774. The difference between the two observed proportions was small. The statistical test produced a Z-value of -0.66 and a p-value of .509. Because the p-value is greater than .05, the difference was not statistically significant, and the null hypothesis was therefore not rejected.

This finding is consistent with the broader literature emphasizing that employability and work readiness are multidimensional constructs developed through educational experiences, technical preparation, work exposure, and transferable competencies rather than being determined by demographic characteristics alone. The study's RRL identifies work attitudes, digital competencies, adaptability, communication, and technical skills as important components of workplace preparation. The Philippine Business for Education (2024), for example, emphasizes work ethic, integrity, resilience, and other employability attributes as important qualities for employment. Likewise, the Department of Education (2017) frames work immersion as a mechanism through which learners apply competencies in workplace settings. Thus, TLE programs may continue to provide equitable opportunities for male and female learners to develop technical, interpersonal, and transferable work competencies.

Table 5.3.
Significant difference in the level of work readiness of the students when grouped according to socio-demographic profile in terms of General Academic Performance

General Academic Performance	Kruskal-Wallis H	p-value	Remarks	Decision
Intellectual resources	17.258	0.001	Significant	Reject the Ho
Personality resources	20.632	0.000	Significant	Reject the Ho
Meta-skill resources	23.244	0.000	Significant	Reject the Ho
Job specific resources	17.745	0.000	Significant	Reject the Ho

Table 5.3 shows that general academic performance was significantly associated with differences in all four dimensions of work readiness. Significant differences were found in intellectual resources ($H = 17.258$, $p = .001$), personality resources ($H = 20.632$, $p < .001$), meta-skill resources ($H = 23.244$, $p < .001$), and job-specific resources ($H = 17.745$, $p < .001$). Because all p-values are below .05, the null hypothesis was rejected for each dimension. These results indicate that students belonging to different academic-performance groups demonstrated statistically different levels of work readiness across cognitive, personal, transferable, and job-specific domains.

The finding for intellectual resources suggests that academic performance may be related to students' ability to understand instructions, apply concepts, solve practical problems, and use knowledge in TLE-related situations. The significant result for personality resources may indicate that academic performance groups also differ in characteristics such as responsibility, perseverance, receptiveness to feedback, and self-management. Meanwhile, the significant differences in meta-skill and job-specific resources suggest that academic performance is also associated with transferable and practical competencies needed to perform workplace tasks. The study's RRL supports the interconnectedness of academic learning, practical application, and work readiness. Kolb's (2015) experiential learning perspective emphasizes the role of experience, reflection, conceptualization, and active application in developing practical competence, while the Department of Education (2017) emphasizes the connection between classroom learning and authentic workplace experience.

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Among the four dimensions, meta-skill resources produced the largest H statistic ($H = 23.244$), whereas intellectual resources produced the smallest ($H = 17.258$). However, the magnitude of the H statistic should not be interpreted as an effect size or direct measure of practical importance. The significant Kruskal-Wallis results establish that differences exist among the academic-performance groups but do not indicate which particular groups differ. Therefore, post hoc pairwise comparisons are required to determine the specific group differences.

Table 5.4.

Significant difference in the level of work readiness of the students when grouped according to socio-demographic profile in terms of TLE Tools at home (Home Economics)

TLE Tools at home (Home Economics)	Kruskal-Wallis H	p-value	Remarks	Decision
Intellectual resources	60.424	0.000	Significant	Reject the H_0
Personality resources	71.463	0.000	Significant	Reject the H_0
Meta-skill resources	62.087	0.000	Significant	Reject the H_0
Job specific resources	49.322	0.000	Significant	Reject the H_0

Table 5.4 indicates statistically significant differences in all four dimensions of work readiness when students were grouped according to the availability of Home Economics tools at home. Significant differences were found in intellectual resources ($H = 60.424$, $p < .001$), personality resources ($H = 71.463$, $p < .001$), meta-skill resources ($H = 62.087$, $p < .001$), and job-specific resources ($H = 49.322$, $p < .001$). Since all p-values are below .05, the null hypothesis was rejected for all four dimensions. The findings indicate that differences in access to Home Economics tools at home were statistically associated with differences in students' perceived work readiness.

The significant differences across personality and meta-skill resources further suggest that repeated engagement with practical tasks may provide opportunities for students to develop responsibility, persistence, cooperation, time management, and adaptability. Similarly, the significant difference in job-specific resources highlights the possible importance of access to equipment in developing practical competencies. The findings are particularly relevant to TLE because students do not necessarily have equal access to tools and materials outside school. Therefore, schools should avoid assuming that all learners enter practical activities with the same level of prior exposure. Adequate school-based facilities, shared equipment, supervised practice, and equitable access to learning resources remain important for ensuring that students can develop competencies regardless of their home circumstances.

Although personality resources had the largest H statistic ($H = 71.463$), followed by meta-skill resources ($H = 62.087$), intellectual resources ($H = 60.424$), and job-specific resources ($H = 49.322$), the H statistics should not be interpreted independently as measures of effect size. They indicate the test statistic associated with the observed group differences. Post hoc comparisons are necessary to establish which specific tool-availability groups differed significantly.

Table 5.5.

Significant difference in the level of work readiness of the students when grouped according to socio-demographic profile in terms of TLE Tools at home (Agri-Fishery Arts)

TLE Tools at home (Agri-Fishery Arts)	Kruskal-Wallis H	p-value	Remarks	Decision
Intellectual resources	21.674	0.027	Significant	Reject the H_0
Personality resources	31.066	0.001	Significant	Reject the H_0
Meta-skill resources	22.046	0.024	Significant	Reject the H_0
Job specific resources	17.382	0.097	Not Significant	Fail to reject the H_0

Table 5.5 indicates that the availability of Agri-Fishery Arts (AFA) tools at home was significantly associated with differences in intellectual resources ($H = 21.674$, $p = .027$), personality resources ($H = 31.066$, $p = .001$), and meta-skill resources ($H = 22.046$, $p = .024$). Since these p-values are below .05, the null hypothesis was rejected for the three dimensions. In contrast, job-specific resources did not differ significantly across the AFA tool-availability groups ($H = 17.382$, $p = .097$); therefore, the null hypothesis was not rejected for this dimension. The findings consequently demonstrate a partial significant difference, with significant differences occurring in intellectual, personality, and meta-skill resources but not in job-specific resources.

The absence of a statistically significant difference in job-specific resources is particularly important. It suggests that access to AFA tools at home alone may not be sufficient to produce measurable differences in students' perceived ability to perform job-specific agricultural tasks. Job-specific competence may depend on factors beyond home access, including the quality of school facilities, teacher demonstration, supervised practice, curriculum exposure, and actual experience with agricultural tasks. The

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Department of Education (2017) emphasizes the importance of structured workplace exposure and practical application, while the study's RRL describes job-specific resources as competencies developed through industry-aligned and practical training. Thus, schools should provide equitable opportunities for all learners to use agricultural tools and perform authentic AFA activities rather than relying on students' home resources.

Personality resources obtained the highest H statistic ($H = 31.066$, $p = .001$), while job-specific resources had the lowest H statistic ($H = 17.382$, $p = .097$). However, these H values should not be treated as direct measures of the magnitude of the differences. The corresponding p-values determine statistical significance. Furthermore, the Kruskal-Wallis test does not establish which specific tool-availability groups differ; therefore, post hoc pairwise comparisons should be conducted for the significant dimensions.

6. Is there a significant relationship between the level of TLE functional literacy and the students' level of work readiness?

Table 6.1.
Significant relationship between the level of TLE functional literacy and the students' level of work readiness in terms of Technology and engineering design literacy

Level of TLE Functional literacy	Level of Work Readiness Efficacy	R-value	N	p-value	Remarks	Decision
Technology and engineering design literacy	Intellectual resources	0.312	406	0.000	Significant	Reject the H_0
	Personality resources	0.353	406	0.000	Significant	Reject the H_0
	Meta-skill resources	0.299	406	0.000	Significant	Reject the H_0
	Job specific resources	0.310	406	0.000	Significant	Reject the H_0

Note: Interpretation of correlation coefficient (r): 0.00-0.19 = Very Weak; 0.20-0.39 = Weak; 0.40-0.59 = Moderate; 0.60-0.79 = Strong; 0.80-1.00 = Very Strong. Statistical significance is assessed at the 0.05 level.

Table 6.1 presents the significant relationship between TLE functional literacy in terms of technology and engineering design literacy and the four dimensions of students' work readiness. The results show that all four dimensions had significant positive relationships with technology and engineering design literacy, based on 406 respondents. The correlation coefficients ranged from $r = 0.299$ to $r = 0.353$, indicating weak positive relationships. All relationships were statistically significant at the 0.05 level ($p < .001$); hence, the null hypothesis was rejected for all four dimensions.

The strongest relationship was found between technology and engineering design literacy and personality resources ($r = 0.353$, $p < .001$), followed by intellectual resources ($r = 0.312$), job-specific resources ($r = 0.310$), and meta-skill resources ($r = 0.299$). These findings indicate that students who reported higher levels of technology and engineering design literacy also tended to report slightly higher levels of personal qualities, cognitive resources, transferable skills, and practical work competencies. However, the weak magnitude of the correlations indicates that the relationships, although statistically significant, were limited in strength.

From a practical perspective, the findings suggest that technology and engineering design activities may support students' work readiness by providing opportunities to interpret technical information, identify appropriate tools and materials, solve practical problems, and apply technological knowledge. However, because the relationships were weak, technology and engineering design literacy should not be viewed as the sole basis of students' work readiness. Other instructional, personal, and environmental factors may also contribute to students' readiness for work.

Overall, technology and engineering design literacy was significantly and positively associated with all four dimensions of work readiness. The findings support the continued integration of practical technology activities, design challenges, troubleshooting exercises, and problem-solving tasks in TLE instruction to help students connect technical knowledge with workplace-related competencies.

Table 6.2.
Significant relationship between the level of TLE functional literacy and the students' level of work readiness in terms of Food and nutrition literacy

Level of TLE Functional literacy	Level of Work Readiness Efficacy	R-value	N	p-value	Remarks	Decision
Food and nutrition literacy	Intellectual resources	0.296	406	0.000	Significant	Reject the H_0
	Personality resources	0.363	406	0.000	Significant	Reject the H_0
	Meta-skill resources	0.335	406	0.000	Significant	Reject the H_0
	Job specific resources	0.329	406	0.000	Significant	Reject the H_0

Note: Interpretation of correlation coefficient (r): 0.00-0.19 = Very Weak; 0.20-0.39 = Weak; 0.40-0.59 = Moderate; 0.60-0.79 = Strong; 0.80-1.00 = Very Strong. Statistical significance is assessed at the 0.05 level.

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Table 6.2 presents the significant relationship between TLE functional literacy in terms of food and nutrition literacy and the four dimensions of students' work readiness. The results reveal significant positive relationships across all dimensions, with correlation coefficients ranging from $r = 0.296$ to $r = 0.363$. Based on the specified interpretation scale, all four relationships are weak positive associations. Since all p -values were less than .001, the null hypothesis was rejected for each dimension.

The strongest relationship was observed between food and nutrition literacy and personality resources ($r = 0.363$, $p < .001$), followed by meta-skill resources ($r = 0.335$), job-specific resources ($r = 0.329$), and intellectual resources ($r = 0.296$). This pattern indicates that students with higher levels of food and nutrition literacy tended to report somewhat higher levels of positive personal characteristics, transferable skills, practical competencies, and intellectual resources.

The findings have practical implications for TLE instruction. Food and nutrition activities require students to interpret recipes, measure ingredients, follow procedures, observe safety and sanitation practices, manage resources, and work collaboratively. These activities can provide meaningful contexts for developing work-related competencies. Nevertheless, the weak correlation coefficients indicate that food and nutrition literacy alone does not strongly explain differences in students' work readiness.

Table 6.3.
Significant relationship between the level of TLE functional literacy and the students' level of work readiness in terms of Financial literacy

Level of TLE Functional literacy	Level of Work Readiness Efficacy	R-value	N	P-value	Remarks	Decision
Financial literacy	Intellectual resources	0.381	406	0.000	Significant	Reject the Ho
	Personality resources	0.438	406	0.000	Significant	Reject the Ho
	Meta-skill resources	0.413	406	0.000	Significant	Reject the Ho
	Job specific resources	0.439	406	0.000	Significant	Reject the Ho

Note. Interpretation of correlation coefficient (r): 0.00–0.19 = Very Weak; 0.20–0.39 = Weak; 0.40–0.59 = Moderate; 0.60–0.79 = Strong; 0.80–1.00 = Very Strong. Statistical significance is assessed at the 0.05 level.

Table 6.3 presents the significant relationship between TLE functional literacy in terms of financial literacy and the four dimensions of students' work readiness. The results show significant positive relationships across all four dimensions. The correlation coefficients ranged from $r = 0.381$ to $r = 0.439$, indicating relationships from weak to moderate positive associations. All relationships were statistically significant ($p < .001$), resulting in the rejection of the null hypothesis for all four dimensions.

The strongest relationship was found between financial literacy and job-specific resources ($r = 0.439$, $p < .001$), closely followed by personality resources ($r = 0.438$), meta-skill resources ($r = 0.413$), and intellectual resources ($r = 0.381$). The moderate relationships with job-specific, personality, and meta-skill resources suggest that students who demonstrated higher financial literacy also tended to report stronger practical, personal, and transferable competencies. The relationship with intellectual resources was comparatively weaker but remained statistically significant.

These findings have direct implications for TLE instruction because financial literacy is applied through practical activities such as budgeting, costing, resource allocation, income and expense recording, and financial decision-making. Such activities require students to calculate accurately, prioritize resources, make decisions, and evaluate the consequences of financial choices. These competencies are relevant to both employment and livelihood contexts.

Overall, financial literacy demonstrated significant positive relationships with all four dimensions of work readiness and showed comparatively stronger associations than technology and engineering design literacy and food and nutrition literacy. The findings support the inclusion of authentic budgeting, costing, entrepreneurship, and financial-management activities in TLE instruction. However, the correlational results do not establish that financial literacy causes higher work readiness.

Table 6.4.
Significant relationship between the level of TLE functional literacy and the students' level of work readiness in terms of Entrepreneurial competence

Level of TLE Functional literacy	Level of Work Readiness Efficacy	R-value	N	P-value	Remarks	Decision
Entrepreneurial competence	Intellectual resources	0.371	406	0.000	Significant	Reject the Ho
	Personality resources	0.432	406	0.000	Significant	Reject the Ho
	Meta-skill resources	0.405	406	0.000	Significant	Reject the Ho
	Job specific resources	0.390	406	0.000	Significant	Reject the Ho

Note. Interpretation of correlation coefficient (r): 0.00–0.19 = Very Weak; 0.20–0.39 = Weak; 0.40–0.59 = Moderate; 0.60–0.79 = Strong; 0.80–1.00 = Very Strong. Statistical significance is assessed at the 0.05 level.

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Table 6.4 presents the significant relationship between entrepreneurial competence and the four dimensions of students' work readiness. The results demonstrate significant positive relationships with intellectual resources ($r = 0.371$, $p < .001$), personality resources ($r = 0.432$, $p < .001$), meta-skill resources ($r = 0.405$, $p < .001$), and job-specific resources ($r = 0.390$, $p < .001$). Based on the specified interpretation scale, the relationships range from weak to moderate, with personality and meta-skill resources showing moderate associations.

The strongest relationship was between entrepreneurial competence and personality resources ($r = 0.432$, $p < .001$), followed by meta-skill resources ($r = 0.405$), job-specific resources ($r = 0.390$), and intellectual resources ($r = 0.371$). These results suggest that students with higher entrepreneurial competence also tended to demonstrate stronger personal and transferable qualities associated with work readiness, including initiative, responsibility, perseverance, adaptability, communication, and problem-solving.

The findings have practical implications for TLE because entrepreneurial learning provides students with opportunities to identify needs, develop products, calculate costs, make decisions, manage resources, communicate ideas, and respond to challenges. These experiences closely connect functional literacy with practical workplace and livelihood demands. The relatively stronger relationship with personality resources suggests that entrepreneurial activities may be particularly relevant to developing students' confidence, initiative, responsibility, and persistence.

Overall, entrepreneurial competence was significantly and positively related to all four dimensions of work readiness. The findings support the use of project-based entrepreneurial activities, product development, budgeting, marketing simulations, and small-scale enterprise projects to provide students with authentic opportunities to integrate TLE knowledge with work-related competencies. Nevertheless, the results indicate association rather than causation.

Table 6.5.
Significant relationship between the level of TLE functional literacy and the students' level of work readiness in terms of Agricultural literacy and ag-tech awareness.

Level of TLE Functional literacy	Level of Work Readiness Efficacy	R-value	N	p-value	Remarks	Decision
Agricultural literacy and ag-tech awareness	Intellectual resources	0.422	406	0.000	Significant	Reject the Ho
	Personality resources	0.469	406	0.000	Significant	Reject the Ho
	Meta-skill resources	0.439	406	0.000	Significant	Reject the Ho
	Job specific resources	0.420	406	0.000	Significant	Reject the Ho

Note. Interpretation of correlation coefficient (r): 0.00–0.19 = Very Weak; 0.20–0.39 = Weak; 0.40–0.59 = Moderate; 0.60–0.79 = Strong; 0.80–1.00 = Very Strong. Statistical significance is assessed at the 0.05 level.

Table 6.5 presents the significant relationship between agricultural literacy and ag-tech awareness and the four dimensions of students' work readiness. The results reveal significant positive relationships with intellectual resources ($r = 0.422$, $p < .001$), personality resources ($r = 0.469$, $p < .001$), meta-skill resources ($r = 0.439$, $p < .001$), and job-specific resources ($r = 0.420$, $p < .001$). All four coefficients indicate moderate positive relationships, with personality resources obtaining the strongest association.

The strongest relationship was observed between agricultural literacy and ag-tech awareness and personality resources ($r = 0.469$, $p < .001$). This was followed by meta-skill resources ($r = 0.439$), intellectual resources ($r = 0.422$), and job-specific resources ($r = 0.420$). The results indicate that students with higher agricultural literacy and greater awareness of agricultural technologies tended to report stronger personal, transferable, cognitive, and practical work-related competencies.

The moderate relationships across all four dimensions have practical implications for TLE instruction. Agricultural and agrotechnology activities require learners to follow procedures, operate or understand tools and technologies, solve practical problems, manage resources, collaborate with others, and adapt to changing conditions. Hands-on agricultural projects can therefore provide opportunities for students to apply classroom knowledge while developing competencies relevant to actual work and livelihood situations.

Overall, agricultural literacy and ag-tech awareness demonstrated the strongest pattern of association with students' work readiness among the five TLE functional literacy dimensions examined. The findings support the integration of school-based agricultural projects, gardening activities, demonstrations of agricultural technologies, equipment-handling exercises, and technology-assisted agricultural tasks. These experiences can help bridge theoretical knowledge and practical workplace competencies. However, the findings remain correlational and should not be interpreted as evidence that agricultural literacy directly causes higher work readiness.

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7. Based On the Findings, What Work-Readiness Intervention Program May Be Proposed?

READY FOR WORK: A Work Readiness Enhancement Program through Targeted TLE Functional Literacy Interventions

Rationale

Based on the findings of the study, READY FOR WORK is proposed as a school-based intervention program designed to strengthen the work readiness of Senior High School students through targeted enhancement of TLE functional literacy. The program is anchored on the finding that TLE functional literacy in technology and engineering design, food and nutrition, financial literacy, entrepreneurial competence, and agricultural literacy and ag-tech awareness was significantly and positively related to the students' intellectual, personality, meta-skill, and job-specific resources. These findings indicate that strengthening functional literacy in TLE may contribute to the development of competencies required for future employment, entrepreneurship, livelihood activities, and workplace participation.

The program also responds to the specific areas of need identified in the results. The lowest intellectual-resource indicator was troubleshooting simple errors in equipment or processes ($M = 2.83$), while initiative in starting practical tasks without waiting for instructions ($M = 2.96$) was the lowest personality-resource indicator. Among meta-skills, communication, time management, and conflict resolution ($M = 3.07$) received the lowest ratings. For job-specific resources, repairing or maintaining simple tools after use ($M = 3.01$) was the lowest-rated competency. In addition, the significant differences associated with the availability of TLE tools at home indicate that students' access to practical tools and equipment is an important consideration in developing equitable opportunities for skills practice.

This chapter presents the summary of findings, conclusions, and recommendations of the study. It synthesizes the major results obtained from the analysis and interpretation of the data in relation to the research objectives and questions. The conclusions are drawn from the significant findings of the study, while the recommendations are formulated based on the identified results, implications, and areas that may require further attention. This chapter also provides practical directions that may guide teachers, school administrators, learners, and future researchers in strengthening TLE functional literacy and addressing the areas identified in the study.

The study determined the level of TLE functional literacy and work readiness of Senior High School Immersion students. It also examined whether significant differences existed when the students were grouped according to selected socio-demographic characteristics and determined the relationship between TLE functional literacy and work readiness. Based on the data gathered from 406 respondents, the following findings were obtained:

1. Socio-demographic Profile of the Respondents

The respondents were distributed according to age, sex, general academic performance, and availability of TLE tools at home. Of the 406 respondents, 176 or 43.35% were male, while 230 or 56.65% were female. In terms of Home Economics tools, cutting boards, kitchen knives, and frying pans or cooking pots were among the most commonly available tools, while sewing machines were among the least available. For Agri-Fishery Arts tools, working gloves, hand trowels, and watering cans or sprayers were among the most commonly available, whereas pruning shears, rakes, and hoes were among the least available.

2. Level of TLE Functional Literacy

The students' level of TLE functional literacy varied across the five dimensions. Technology and engineering design literacy obtained an average score of 67.78 and was verbally interpreted as Needs Improvement, with 60.59% of the respondents classified under this category. Food and nutrition literacy obtained an average score of 61.53 and was likewise interpreted as Needs Improvement, with 68.47% classified under this level. Financial literacy obtained an average score of 65.58 and was interpreted as Needs Improvement, with 64.29% of the respondents falling under this category.

3. Level of Work Readiness

The students generally demonstrated a positive level of work readiness across all four dimensions. Intellectual resources obtained a general assessment mean of 3.03, personality resources obtained 3.17, meta-skill resources obtained 3.11, and job-specific resources obtained 3.10. All four dimensions were verbally interpreted as Agree.

Among the four dimensions, personality resources obtained the highest general assessment mean of 3.17. The findings indicate that the students generally possessed cognitive, personal, interpersonal, and technical competencies necessary for TLE-related practical and work-related activities. However, the moderate overall means also indicate the need for continued development through practical, performance-based, and workplace-oriented learning experiences.

4. Significant Difference in TLE Functional Literacy According to Socio-demographic Profile

The results showed significant differences in selected dimensions of TLE functional literacy when students were grouped according to their socio-demographic characteristics. According to age, significant differences were found in financial literacy,

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entrepreneurial competence, and agricultural literacy and ag-tech awareness, while technology and engineering design literacy and food and nutrition literacy did not differ significantly.

No significant difference was found according to sex. In contrast, general academic performance showed significant differences across all five dimensions of TLE functional literacy. Similarly, the availability of Home Economics tools at home showed significant differences across all five dimensions.

For Agri-Fishery Arts tools at home, significant differences were found in technology and engineering design literacy, food and nutrition literacy, and financial literacy, while the remaining dimensions should be interpreted according to their corresponding test results in the final statistical tables. The final narrative must be aligned exactly with Table 4.x to avoid inconsistency between the results table and Chapter 5.

5. Significant Difference in Work Readiness According to Socio-demographic Profile

The results showed partial differences in work readiness according to age. Significant differences were found in intellectual resources and meta-skill resources, whereas personality resources and job-specific resources did not show significant differences.

No significant difference was found according to sex. However, general academic performance showed significant differences across all four dimensions of work readiness. Likewise, the availability of Home Economics tools at home showed significant differences across all four dimensions.

For Agri-Fishery Arts tools at home, significant differences were found in intellectual resources, personality resources, and meta-skill resources, while job-specific resources did not show a significant difference. These findings indicate that selected socio-demographic and resource-related characteristics are associated with differences in particular dimensions of students' work readiness.

6. Significant Relationship Between TLE Functional Literacy and Work Readiness

The findings consistently showed significant positive relationships between all five dimensions of TLE functional literacy and the four dimensions of work readiness.

Technology and engineering design literacy was significantly and positively related to intellectual, personality, meta-skill, and job-specific resources, with correlation coefficients ranging from $r = 0.299$ to $r = 0.353$. These relationships may be described as small to moderate positive associations, depending on the approved correlation-interpretation scale.

Agricultural literacy and ag-tech awareness demonstrated the strongest overall pattern of association, with correlation coefficients ranging from $r = 0.420$ to $r = 0.469$. The strongest relationship in this dimension was with personality resources ($r = 0.469$), followed by meta-skill resources ($r = 0.439$).

All reported relationships were statistically significant at $p < .001$, resulting in the rejection of the corresponding null hypotheses. The findings indicate that higher levels of TLE functional literacy tend to be associated with higher levels of students' work readiness. However, the correlational results do not establish a causal relationship between TLE functional literacy and work readiness.

Based on the findings of the study, the following conclusions were drawn:

1. The students demonstrated unequal access to TLE tools and equipment at home. Although several basic Home Economics and Agri-Fishery Arts tools were available to many respondents, specialized tools were less commonly accessible. This condition may limit opportunities for students to practice TLE competencies outside the school environment and highlights the importance of providing equitable access to practical learning resources.
2. The students' TLE functional literacy was uneven across the five domains. Entrepreneurial competence emerged as the strongest area, whereas technology and engineering design literacy, food and nutrition literacy, and financial literacy require greater attention. Agricultural literacy and ag-tech awareness also warrant continued development based on its corresponding score classification in the approved grading matrix.
3. The students generally demonstrated an acceptable level of work readiness. They agreed that they possessed intellectual, personality, meta-skill, and job-specific resources necessary for practical and workplace-related activities. Nevertheless, the results indicate opportunities to further strengthen troubleshooting, initiative, communication, time management, adaptability, and technical skills.
4. TLE functional literacy varied according to selected socio-demographic characteristics. General academic performance and the availability of Home Economics tools at home were associated with significant differences across the functional-literacy domains. Age was associated with differences in selected areas, while sex did not produce significant differences. These findings suggest that students' academic experiences and access to practical resources may contribute to differences in functional literacy.

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5. Work readiness likewise varied according to selected socio-demographic characteristics. General academic performance and the availability of Home Economics tools at home were consistently associated with significant differences across work-readiness dimensions. Age and the availability of Agri-Fishery Arts tools at home were associated with differences in selected dimensions, whereas sex did not demonstrate a significant difference.
6. There was a significant positive relationship between TLE functional literacy and work readiness. Students with higher levels of technology and engineering design literacy, food and nutrition literacy, financial literacy, entrepreneurial competence, and agricultural literacy and ag-tech awareness tended to demonstrate higher levels of intellectual, personality, meta-skill, and job-specific resources. The findings therefore support the importance of integrating functional literacy development with work-readiness preparation.
7. Based on the identified needs and significant relationships, the study proposes READY FOR WORK: A Work Readiness Enhancement Program through Targeted TLE Functional Literacy Interventions. The program directly links TLE functional literacy with work-readiness development and prioritizes technical and engineering design, food and nutrition, financial literacy, agricultural and agri-technology competencies, troubleshooting, initiative, communication, time management, tool maintenance, and workplace simulation.
8. The findings further indicate that the proposed intervention should address not only students' competencies but also their access to TLE tools and equipment. Consequently, a Tool-Kit Borrowing System and Open-Lab Practice Hours should be incorporated into the intervention to provide students with structured opportunities to practice TLE skills when equivalent tools are unavailable at home.

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

1. Students

Students are encouraged to actively participate in READY FOR WORK: A Work Readiness Enhancement Program through Targeted TLE Functional Literacy Interventions, particularly in areas where the findings indicated a need for improvement. They should maximize hands-on activities, practical simulations, workplace-related tasks, and immersion experiences to strengthen their ability to apply TLE knowledge in real-life situations.

Students should also develop their intellectual, personality, meta-skill, and job-specific resources by practicing problem-solving, initiative, communication, time management, teamwork, adaptability, and proper tool handling. When tools are unavailable at home, students should make appropriate use of the school's Tool-Kit Borrowing System and Open-Lab Practice Hours, subject to established safety and accountability procedures.

2. Teachers

TLE teachers are recommended to use the findings as a basis for developing targeted, practical, and competency-based instructional strategies. Additional learning activities should be provided in technology and engineering design, food preparation and nutrition, budgeting and costing, financial recording, agriculture and agrotechnology, troubleshooting, and other areas identified as requiring improvement.

Teachers should integrate work-readiness competencies into regular TLE instruction through performance-based tasks, simulations, collaborative projects, problem-solving activities, and authentic workplace scenarios. Formative and performance assessments should be used regularly to monitor student progress.

Teachers should also implement the Tool-Kit Borrowing System by preparing an inventory of borrowable tools, establishing borrowing and return procedures, maintaining safety protocols, and monitoring tool utilization. Likewise, Open-Lab Practice Hours should be scheduled to provide students who have limited home access to tools with additional supervised opportunities to practice required competencies.

3. School Administrators

School administrators are encouraged to institutionalize READY FOR WORK: A Work Readiness Enhancement Program through Targeted TLE Functional Literacy Interventions as a school-based intervention supporting Senior High School immersion students.

Priority should be given to the acquisition, repair, replacement, and equitable distribution of TLE tools and equipment. Rather than relying solely on students' access to tools at home, the school should establish a Tool-Kit Borrowing System through which students may temporarily borrow appropriate TLE tools for approved learning activities.

The school should likewise establish Open-Lab Practice Hours, allowing students to use TLE laboratories, workshops, kitchens, agricultural areas, and other appropriate facilities beyond regular class periods under teacher or laboratory personnel supervision. These measures can directly address the unequal access to TLE tools identified in the study.

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School administrators are also encouraged to support teacher professional development, industry partnerships, equipment maintenance, and the procurement of instructional materials necessary for hands-on and workplace-oriented learning.

4. Pasig City Education Officials and DepEd Policymakers

Pasig City education officials and DepEd policymakers are encouraged to consider the findings as localized evidence for strengthening Senior High School immersion and TLE programs. The significant differences associated with academic performance, age, and access to TLE tools indicate the need for interventions that respond to differences in students' learning experiences and available resources.

Policies and programs may consider providing schools with adequate TLE tools and equipment, laboratory resources, mobile or shared tool kits, and mechanisms for equitable access to practical learning facilities. Support may also be provided for teacher training, industry partnerships, and competency-based work-readiness programs.

The significant positive relationships between TLE functional literacy and work readiness may serve as a basis for strengthening the integration of functional literacy, practical skills, and employability competencies in TLE and work-immersion programs.

5. Future Researchers

Future researchers are encouraged to replicate the study in other schools, school divisions, or regions to determine whether similar patterns exist across different educational contexts. Longitudinal, experimental, and mixed-method studies may be conducted to examine changes in TLE functional literacy and work readiness before and after implementation of targeted interventions.

Future studies may also examine the effectiveness of specific interventions, particularly the Tool-Kit Borrowing System and Open-Lab Practice Hours, in improving practical TLE competencies among students with limited access to tools at home. Other factors such as quality of immersion experiences, industry exposure, teacher competence, socioeconomic conditions, access to technology, and employer expectations may also be examined.

6. Proposed Intervention Program

Based on the findings and conclusions, the study proposes READY FOR WORK: A Work Readiness Enhancement Program through Targeted TLE Functional Literacy Interventions. The program is designed to strengthen students' TLE functional literacy as a mechanism for improving work readiness.

The program should focus on technology and engineering design, food and nutrition, financial literacy, entrepreneurial competence, agricultural literacy and ag-tech awareness, intellectual resources, personality resources, meta-skills, and job-specific competencies.

In addition to competency-building activities, the program should include two structural interventions addressing the identified home-tool access deficit:

- a. Tool-Kit Borrowing System. The school should establish a controlled system for lending TLE tools to students who do not have adequate equipment at home. Each tool kit should have an inventory, borrower record, safety agreement, scheduled return date, and condition-checking procedure.
- b. Open-Lab Practice Hours. The school should designate scheduled periods when students may use appropriate TLE laboratories and equipment outside regular class hours under supervision. These sessions should provide equitable opportunities for students to practice technical, food-related, agricultural, entrepreneurial, and other TLE competencies.

The program should employ measurable objectives, responsible personnel, implementation schedules, resource requirements, and performance indicators. Its effectiveness should be assessed through pre-assessment and post-assessment results, performance-based activities, competency checklists, student feedback, and work-readiness measures.

The proposed program is therefore intended not merely to improve students' TLE knowledge but to bridge the gap between functional literacy, practical application, access to tools, and actual workplace readiness.

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