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Siklab Kabuhayan: Integrating Sustainable Livelihood Skills into the Home Economics Curriculum for Community

Rodalyn S. Fabio[1], Lowelyn Q. Estoquia[2]
[1]Department of Education, Maglatab National High School, Tagbina, Surigao del Sur, Philippines-8308
[2] Department of Graduate Studies, North Eastern Mindanao State University, Tandag City, Surigao del Sur, Philippines-8300

Abstract*—This study examined the integration of sustainable livelihood skills in the Home Economics curriculum and its relationship to students' entrepreneurial mindset and metacognitive skills. A descriptive–correlational research design was employed involving 116 students and 5 teachers from selected public secondary schools. Data were gathered using structured questionnaires and analyzed using weighted mean and Pearson Product–Moment Correlation. Results revealed that livelihood skills were generally integrated (M = 3.816), while sustainable and context-specific livelihood opportunities were evident but varied across indicators. Students' entrepreneurial mindset and metacognitive skills were moderately developed. A significant relationship was found between sustainable livelihood opportunities and students' entrepreneurial and metacognitive skills, whereas relationships between livelihood skills integration and sustainability indicators were variable. The findings highlight the need for more intentional, context-based integration of sustainability and entrepreneurship into Home Economics instruction.*

***Keywords*—** *Entrepreneurial mindset: Home Economics: Livelihood Skills Integration: Metacognitive Skills: Sustainability.*

I. INTRODUCTION

Home Economics plays an important role in helping learners develop sustainable livelihood skills that they can use in real life [1]. More than just teaching basic competencies, it enables students to transform everyday skills into meaningful and income-generating opportunities that are responsive to their local context [2]. It emphasizes the use of available resources, creativity, and practical decision-making to support long-term livelihood sustainability [3]. This study focuses on how these sustainable livelihood skills are integrated into Home Economics, how they connect to real, context-specific opportunities, and how they influence students' entrepreneurial mindset and metacognitive skills. It also led to the development of the Siklab-Kabuhayan Toolkit, a teacher's guide designed to strengthen the integration of sustainability, entrepreneurship, and marketing in classroom instruction.

Several studies support the importance of aligning livelihood education with sustainability and real-world application. [4] emphasizes the need for education systems that prepare learners for changing social, economic, and environmental conditions, including green and digital skills. Similarly, [5] highlights the importance of adaptability, innovation, and stronger connections between education and the labor market. [3] explains that sustainable livelihood development is strengthened through skill-building that reflects real-life conditions, particularly in rural communities. In addition, [6] emphasize that livelihood education should promote resilience, inclusivity, and environmental sustainability. Research in entrepreneurship education also suggests that students learn more effectively when they engage in real entrepreneurial experiences rather than simply completing classroom requirements [7]. Likewise, [8] highlights that entrepreneurship education must address real barriers, such as limited skills, weak networks, and restricted market access, while recent studies also emphasize the importance of reflective thinking and self-monitoring in building entrepreneurial competence [9].

Despite these insights, gaps remain in the implementation of livelihood skills in the classroom, particularly in the Philippine context. While Home Economics under the TVL track is already recognized [10], the integration of sustainable livelihood skills is not always consistent across learning areas. There are instances in which certain skills are emphasized while others are less developed, and students may not fully experience the real-world application of what they learn. Studies also reveal a mismatch between teachers' and students' perceptions, with students often viewing the integration as less meaningful than teachers' assessments [12]. Furthermore, many livelihood activities remain focused on compliance, with products primarily produced for school requirements rather than the actual market, limiting students' exposure to entrepreneurship and marketing [11]. These issues highlight the need for a more intentional, contextualized, and sustainability-oriented approach to integrating livelihood skills.

The significance of this study lies in its potential to strengthen Home Economics as a livelihood-building and sustainability-centered subject. By examining the current integration of livelihood skills, their connection to sustainable and locally relevant opportunities, and their influence on students' entrepreneurial mindset and metacognitive skills, the study directly addresses the identified gaps. The findings served as the basis for developing the Siklab-Kabuhayan Toolkit, which provides practical strategies for teachers to integrate sustainability, entrepreneurship, financial literacy, and marketing into their lessons. Through this, the study contributes to making Home Economics more meaningful, relevant, and responsive to the real needs of learners and their communities.

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II. Methodology

This section presents the research design, respondents, instruments, and statistical methods used to examine the relationships among the study's key variables.

A. Research Design

The study used a descriptive–correlational research design to examine the relationships among the variables.

B. Respondents

The study respondents consisted of 116 students selected through cluster sampling and 5 Home Economics teachers selected through purposive sampling.

C. Instrumentation

A structured questionnaire was used to assess the level of integration of livelihood skills, the availability of sustainable and context-specific livelihood opportunities, students' entrepreneurial mindset, and metacognitive skills.

D. Statistical Treatment

The data were analyzed using the weighted mean to determine the levels of the variables and the Pearson Product–Moment Correlation to examine their relationships.

III. Results and Discussion

This section presents and discusses the study's findings, based on the data gathered, highlighting key results and their implications for the research objectives.

A. Livelihood Skill Integration

From the students' point of view in Table 1, the overall mean of 3.321, described as Moderately Integrated, suggests that while livelihood skills are present in their lessons, they are not consistently or meaningfully experienced. Among the areas, Food Preservation stands out with the highest mean (3.981), indicating that students feel more engaged and see clearer application of skills in this area. However, areas like Bread and Pastry (2.782), Handicrafts (3.151), and Food and Beverage (3.116) fall under Moderately Integrated, which may mean that students are exposed to these skills but do not always get enough opportunities to fully apply them in real-life or practical situations.

In contrast, the teachers' perspective is much more positive. With an overall mean of 4.311, interpreted as *Highly Integrated*, teachers generally believe that livelihood skills are well incorporated into their teaching. Most areas, such as Dressmaking, Handicrafts, Bread and Pastry, and Food and Beverage, were rated as *Highly Integrated*, showing strong confidence in how these skills are delivered in the classroom. Only Food Preservation received a slightly lower rating of *Integrated*, but it still reflects a good level of implementation.

TABLE 1. Livelihood skills integration

Curriculum	Students		Teachers		Grand Mean	Overall Adjectival Rating
	Mean	Adjectival Rating	Mean	Adjectival Rating		
Dressmaking	3.576	Integrated	4.222	Highly Integrated	3.899	Integrated
Handicrafts	3.151	Moderately Integrated	4.222	Highly Integrated	3.687	Integrated
Bread and Pastry	2.782	Moderately Integrated	4.667	Highly Integrated	3.725	Integrated
Food and Beverage	3.116	Moderately Integrated	4.778	Highly Integrated	3.947	Integrated
Food Preservation	3.981	Integrated	3.667	Integrated	3.824	Integrated
Overall Mean	3.321	Moderately Integrated	4.311	Highly Integrated	3.816	Integrated

When comparing the two perspectives, a clear gap is evident. Teachers feel that they are effectively integrating livelihood skills, but students do not always experience them at the same level. This suggests that even when activities are conducted, they may not always translate into meaningful or hands-on learning for students.

Overall, the grand mean of 3.816 (Integrated) shows that livelihood skills are generally part of the curriculum. However, the differences in perception and variation across areas highlight the need to make these learning experiences more engaging, practical, and connected to real-life situations so that students can fully appreciate and benefit from them. The results of this table are consistent with existing studies on livelihood education, which highlight that while technical skills are commonly taught, their application in real-life contexts is not always fully realized. Research has shown that livelihood instruction often remains focused on procedural tasks rather than meaningful application [13], [14]. Moreover, the effectiveness of integration is strongly influenced by teachers' competencies and instructional conditions [15], as well as resource availability and workload challenges [16]. When students are given continuous and meaningful exposure to livelihood activities, their skills tend to improve significantly [17].

B. Sustainable and Context-Specific Livelihood Opportunities

Looking at the students' responses in Table 2, the overall mean of 3.282, interpreted as Moderately Sustainable, suggests that sustainability is present but not strongly or consistently experienced in all areas. Students rated Integration of Sustainable Production the highest (3.647, Sustainable), indicating that they are more familiar with proper production practices and resource use. However, most of the other indicators, such as Utilizing Local Raw Materials (3.295), Addressing Local Market Needs (3.255), Upcycling Waste Materials (3.109), Marketing and Product Promotion (3.155), Digital Marketing (3.252), and Community-Based Marketing (3.264), fall into the Moderately Sustainable category. This pattern suggests that, while students are introduced to these concepts, they may not always have enough opportunities to apply them in practical contexts.

From the teachers' point of view, the results are more favorable. With an overall mean of 3.869, interpreted as

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Sustainable, teachers generally believe that sustainability is already well integrated into their teaching. All indicators were rated as Sustainable, with particularly high ratings in Integration of Sustainable Production (4.120) and Utilizing Local Raw Materials (4.080). This reflects teachers' perception that sustainability practices are actively incorporated into classroom activities.

TABLE 2. Sustainable and context-specific livelihood opportunities

Indicators	Students		Teachers		Overall Mean	Overall Adjectival Rating
	Mean	Adjectival Rating	Mean	Adjectival Rating		
Utilizing Local Raw Materials	3.295	Moderately Sustainable	4.080	Sustainable	3.688	Sustainable
Addressing Local Market Needs	3.255	Moderately Sustainable	3.840	Sustainable	3.548	Sustainable
Upcycling Waste Materials	3.109	Moderately Sustainable	3.600	Sustainable	3.355	Moderately Sustainable
Integration of Sustainable Production	3.647	Sustainable	4.120	Sustainable	3.884	Sustainable
Marketing & Product Promotion	3.155	Moderately Sustainable	3.680	Sustainable	3.418	Sustainable
Digital Marketing	3.252	Moderately Sustainable	4.040	Sustainable	3.646	Sustainable
Community-Based Marketing	3.264	Moderately Sustainable	3.720	Sustainable	3.492	Sustainable
Overall Mean	**3.282**	**Moderately Sustainable**	**3.869**	**Sustainable**	**3.576**	**Sustainable**

When the two perspectives are compared, a consistent difference becomes evident. Teachers tend to view sustainability as strongly implemented, while students experience it at a more moderate level. This difference may indicate that although sustainability concepts are included in lessons, they are not always fully translated into engaging, hands-on experiences that students can clearly recognize and apply.

In general, the mean of 3.576 (Sustainable) indicates that sustainable livelihood opportunities are present in the curriculum. However, areas such as upcycling and marketing still need to be strengthened to make sustainability more practical, visible, and meaningful for students. Enhancing these aspects can help ensure that learners not only understand sustainability but also experience it in ways that are relevant to real-life situations.

The findings further reflect what has been emphasized in the literature regarding sustainability in Home Economics education. Sustainable livelihood practices become more meaningful when they are connected to local community needs and available resources [18], [19]. Studies also suggest that integrating entrepreneurship and financial literacy helps learners transform basic skills into viable livelihood opportunities [20], [21]. Furthermore, sustainability frameworks highlight the importance of adaptability and effective resource utilization in livelihood development [22].

C. Student's Entrepreneurial Mindset and Metacognitive Skills

From the students' perspective in Table 3, the overall mean of 3.267, interpreted as Moderately Agree, indicates that students see themselves as somewhat developing these skills, but not yet at a strong level. Among the indicators, Entrepreneurial Mindset (3.319) and Metacognitive Journaling (3.291) received relatively higher ratings, suggesting that students are beginning to show initiative, awareness, and reflection in their learning. However, Quality of Prototype Product (3.217) and Business Proposition (3.240) remained at the Moderately Agree level, suggesting that students still need more guidance and practice in translating their ideas into concrete outputs and business plans.

From the teachers' perspective, the overall mean of 3.546, interpreted as *Agree*, reflects a more positive evaluation of students' skills. Teachers rated Entrepreneurial Mindset (3.880), Quality of Prototype Product (3.760), and Business Proposition (3.760) as *Agree*, indicating that they observe students demonstrating these competencies in class activities. However, Metacognitive Journaling (3.370) was rated as *Moderately Agree*, suggesting that students' ability to reflect on their learning may still be developing. In addition, Teacher's Observation (2.960) also falls under *Moderately Agree*, indicating that while progress is evident, there is still room for improvement in overall student performance and behavior related to entrepreneurial learning.

TABLE 3. Student's Entrepreneurial Mindset and Metacognitive Skills

Indicators	Students Mean	Adj. Rating	Teachers Mean	Adj. Rating	Overall Mean	Overall Rating
Entrepre-neurial Mindset	3.319	Mode-rately Agree	3.880	Agree	3.600	Agree
Quality of Prototype Product	3.217	Mode-rately Agree	3.760	Agree	3.489	Agree
Business Proposi-tion	3.240	Mode-rately Agree	3.760	Agree	3.500	Agree
Metacogni-tive Journaling	3.291	Mode-rately Agree	3.370	Moderately Agree	3.331	Mode-rately Agree
Teacher's Observa-tion	—	—	2.960	Moderately Agree	2.960	Mode-rately Agree
Overall Mean	**3.267**	**Mode-rately Agree**	**3.546**	**Agree**	**3.376**	**Mode-rately Agree**

When comparing the two perspectives, a familiar pattern appears. Teachers tend to rate students' skills more positively, while students themselves give more moderate assessments. This difference suggests that although students are already showing signs of development, they may not yet feel fully confident in their abilities, particularly in applying their skills to real-life or entrepreneurial situations.

Overall, the combined mean of 3.376 (Moderately Agree) indicates that students' entrepreneurial mindset and metacognitive skills are developing but not yet fully established. This highlights the need for more consistent

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opportunities for students to practice, reflect, and apply their learning in meaningful and realistic contexts. Strengthening hands-on activities, business simulations, and reflective exercises can help students build greater confidence and competence in these areas.

These findings are supported by research on entrepreneurship and learning processes, which emphasize that developing an entrepreneurial mindset requires more than technical training. Studies have shown that entrepreneurial mindset development strengthens students' ability to act on opportunities [23], while project-based learning enhances both entrepreneurial thinking and metacognitive awareness [24]. Metacognitive skills also play a vital role in helping learners monitor and evaluate their thinking [25], and reflective processes improve entrepreneurial decision-making [26]. These skills further contribute to resilience and adaptability in real-world situations [9].

D. Relationship Between Variables

In Table 4, Livelihood Skills Integration and Sustainable Livelihood Opportunities. In Dressmaking, only selected variables showed significant relationships. Specifically, Upcycling ($r = 0.521$, $p = 0.039$), Marketing ($r = 0.694$, $p = 0.003$), and Community-Based Marketing ($r = 0.611$, $p = 0.012$) were significant. This suggests that in Dressmaking, sustainability becomes more meaningful when students engage in creative reuse of materials and are exposed to real-world marketing practices, particularly within the community. However, other indicators, such as the use of raw materials, addressing market needs, integration, and digital marketing, were not significant, suggesting that these aspects may not yet be consistently linked to livelihood skill integration in this area.

TABLE 4: Livelihood Skills Integration and Sustainable Livelihood Practices

HE Area	Variables Tested	r-value	p-value	Decision	Conclusion
Dressmaking	Utilizing Raw Materials	0.344	0.190	Failed to reject Ho	Not Significant
	Addressing Market Needs	0.491	0.054	Failed to reject Ho	Not Significant
	Upcycling	0.521	0.039	Reject Ho	Significant
	Integration	0.433	0.094	Failed to reject Ho	Not Significant
	Marketing	0.694	0.003	Reject Ho	Significant
	Digital Marketing	0.480	0.060	Failed to reject Ho	Not Significant
	Community-Based Marketing	0.611	0.012	Reject Ho	Significant
Handicrafts	Utilizing Raw Materials	0.611	0.020	Reject Ho	Significant
	Addressing Market Needs	0.589	0.027	Reject Ho	Significant
	Upcycling	0.537	0.048	Reject Ho	Significant
	Integration	0.448	0.108	Failed to reject Ho	Not Significant
	Marketing	0.384	0.175	Failed to reject Ho	Not Significant
	Digital Marketing	0.268	0.354	Failed to reject Ho	Not Significant
	Community-Based Marketing	0.384	0.176	Failed to reject Ho	Not Significant
Bread and Pastry	Utilizing Raw Materials	0.891	0.000	Reject Ho	Significant
	Addressing Market Needs	0.153	0.467	Failed to reject Ho	Not Significant
	Upcycling	0.268	0.195	Failed to reject Ho	Not Significant
	Integration	0.350	0.087	Failed to reject Ho	Not Significant
	Marketing	0.043	0.837	Failed to reject Ho	Not Significant
	Digital Marketing	0.016	0.941	Failed to reject Ho	Not Significant
	Community-Based Marketing	0.105	0.617	Failed to reject Ho	Not Significant
Food and Beverages	Utilizing Raw Materials	0.402	0.046	Reject Ho	Significant
	Addressing Market Needs	-0.053	0.802	Failed to reject Ho	Not Significant
	Upcycling	-0.189	0.365	Failed to reject Ho	Not Significant
	Integration	-0.010	0.963	Failed to reject Ho	Not Significant
	Marketing	-0.219	0.293	Failed to reject Ho	Not Significant
	Digital Marketing	-0.190	0.363	Failed to reject Ho	Not Significant
	Community-Based Marketing	0.154	0.462	Failed to reject Ho	Not Significant
Food Preservation	Utilizing Raw Materials	0.750	0.000	Reject Ho	Significant
	Addressing Market Needs	0.871	0.000	Reject Ho	Significant
	Upcycling	0.899	0.000	Reject Ho	Significant
	Integration	0.885	0.000	Reject Ho	Significant
	Marketing	0.763	0.000	Reject Ho	Significant
	Digital Marketing	0.668	0.000	Reject Ho	Significant
	Community-Based Marketing	0.887	0.000	Reject Ho	Significant

For Handicrafts, the results show a different pattern. Significant relationships were observed in Utilizing Local Raw Materials ($r = 0.611$, $p = 0.020$), Addressing Market Needs ($r = 0.589$, $p = 0.027$), and Upcycling ($r = 0.537$, $p = 0.048$). This implies that handicrafts are more strongly linked to sustainability practices that involve resource use and creativity. However, variables related to marketing, digital promotion, and broader integration were not significant, suggesting that while production-related sustainability is evident, market-oriented skills may still be underdeveloped in this area.

In Bread and Pastry, only Utilizing Local Raw Materials ($r = 0.891$, $p = 0.000$) showed a significant relationship. This indicates a very strong connection between the use of available materials and livelihood skills in this area. However, all other variables, including market needs, upcycling,

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marketing, and digital promotion, were not significant. This suggests that Bread and Pastry activities may focus more on production rather than on sustainability practices related to entrepreneurship or market engagement.

For Food and Beverages, only Utilizing Local Raw Materials ($r = 0.402$, $p = 0.046$) was found to be significant. The remaining variables showed no significant relationships, and some even exhibited negative correlations, although not significant. This may indicate that, while students can use available resources, other aspects, such as marketing, integration, and sustainability practices, are not strongly linked to livelihood skills in this area.

In contrast, Food Preservation stands out as the most consistent area, where all variables showed significant relationships. Indicators such as the use of raw materials, addressing market needs, upcycling, integration, marketing, digital marketing, and community-based marketing all showed strong, significant correlations ($p = 0.000$). This suggests that Food Preservation effectively integrates both sustainability and entrepreneurial components, making it the most holistic and well-developed area for integrating livelihood skills.

Overall, the results show that the strength of the relationship between livelihood skills and sustainability varies across Home Economics areas. While some areas, like Food Preservation, demonstrate strong and consistent integration, others show selective or limited connections. This highlights the need to strengthen weaker areas, particularly in terms of marketing, digital skills, and real-world application, to achieve a more balanced and meaningful integration of sustainable livelihood practices across all Home Economics specializations.

The varying relationships observed across Home Economics areas align with studies emphasizing the importance of integrated and contextualized instruction. Integrated curricula enhance students' ability to connect skills with sustainability practices [27], while entrepreneurship education improves readiness for livelihood engagement [28]. Innovation-based instruction also strengthens problem-solving and reflective learning [29]. In addition, sustainability integration increases student engagement [30], and skills training is strongly associated with improved livelihood and employment outcomes [31].

TABLE 5. Sustainable livelihood opportunities and students' entrepreneurial mindset and metacognitive skills

Variables Tested	Indicators	Computed r	p-value	Decision	Conclusion
Utilizing Raw Materials	Entrepreneurial Mindset	0.523	0.000	Reject Ho	Highly Significant
	Quality of Product	0.603	0.000	Reject Ho	Highly Significant
	Business Proposition	0.522	0.000	Reject Ho	Highly Significant
	Metacognitive Journaling	0.470	0.000	Reject Ho	Highly Significant
Addressing Local Market Needs	Entrepreneurial Mindset	0.443	0.000	Reject Ho	Highly Significant
	Quality of Product	0.605	0.000	Reject Ho	Highly Significant
	Business Proposition	0.442	0.000	Reject Ho	Highly Significant
	Metacognitive Journaling	0.396	0.000	Reject Ho	Highly Significant
Upcycling	Entrepreneurial Mindset	0.563	0.000	Reject Ho	Highly Significant
	Quality of Product	0.682	0.000	Reject Ho	Highly Significant
	Business Proposition	0.607	0.000	Reject Ho	Highly Significant
	Metacognitive Journaling	0.530	0.000	Reject Ho	Highly Significant
Integration of Production Services	Entrepreneurial Mindset	0.488	0.000	Reject Ho	Highly Significant
	Quality of Product	0.550	0.000	Reject Ho	Highly Significant
	Business Proposition	0.528	0.000	Reject Ho	Highly Significant
	Metacognitive Journaling	0.456	0.000	Reject Ho	Highly Significant
Marketing & Product Promotion Skills Integration	Entrepreneurial Mindset	0.668	0.000	Reject Ho	Highly Significant
	Quality of Product	0.756	0.000	Reject Ho	Highly Significant
	Business Proposition	0.676	0.000	Reject Ho	Highly Significant
	Metacognitive Journaling	0.644	0.000	Reject Ho	Highly Significant
Digital Marketing	Entrepreneurial Mindset	0.615	0.000	Reject Ho	Highly Significant
	Quality of Product	0.722	0.000	Reject Ho	Highly Significant
	Business Proposition	0.591	0.000	Reject Ho	Highly Significant
	Metacognitive Journaling	0.549	0.000	Reject Ho	Highly Significant
Community-Based Marketing	Entrepreneurial Mindset	0.758	0.000	Reject Ho	Highly Significant
	Quality of Product	0.767	0.000	Reject Ho	Highly Significant
	Business Proposition	0.731	0.000	Reject Ho	Highly Significant
	Metacognitive Journaling	0.648	0.000	Reject Ho	Highly Significant

Table 5 presents the Sustainable Livelihood Opportunities and Students' Entrepreneurial Mindset and Metacognitive Skills. The relationship between sustainable livelihood opportunities and students' entrepreneurial mindset and metacognitive skills was consistently strong and highly significant across all indicators ($p = 0.000$). Variables such as community-based marketing and product promotion showed the strongest correlations, particularly with product quality and the business proposition. Likewise, digital marketing and upcycling demonstrated strong, consistent relationships, indicating that engaging students in innovative, practical activities enhances both their entrepreneurial thinking and the application of skills. Even fundamental aspects such as the use of raw materials, the addressing of local market needs, and the integration of production services were significantly related to all outcome variables. Overall, the results suggest that both basic and advanced sustainability practices play an important role in strengthening students' entrepreneurial competence and metacognitive development.

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The significant relationship between sustainability and students' entrepreneurial and metacognitive skills is strongly supported by existing literature. Sustainability-oriented education enhances entrepreneurial intentions among students [32], while real-world and community-based learning experiences strengthen adaptive and reflective skills [33]. Reflective learning and self-awareness further improve students' ability to evaluate outcomes and refine their strategies [34], while sustainability-focused teaching approaches promote deeper engagement and entrepreneurial thinking [35]. Moreover, structured instructional approaches and tools support the integration of sustainability and entrepreneurship concepts in classroom learning [36].

IV. Conclusion

The study revealed that livelihood skills are generally integrated into the Home Economics curriculum; however, their implementation is not always consistently experienced by students. While teachers perceive a high level of integration, students report a more moderate experience, suggesting a gap between instructional delivery and actual learning experience. Sustainable livelihood opportunities are present in the curriculum, but their application varies across areas, particularly in upcycling, marketing, and digital promotion.

Moreover, students' entrepreneurial mindset and metacognitive skills are developing but remain at a moderate level, indicating a need for more meaningful, practice-based learning experiences. The results further showed that the relationship between livelihood skills integration and sustainability is inconsistent across Home Economics areas, with Food Preservation demonstrating the strongest and most comprehensive integration. In contrast, the relationship between sustainable livelihood opportunities and students' entrepreneurial and metacognitive skills was consistently strong and significant, highlighting the importance of sustainability-oriented learning in developing higher-order competencies.

Overall, the findings emphasize that while the foundation for sustainable livelihood education is already present, there is a need for more intentional, contextualized, and experiential approaches to make learning more meaningful and relevant to real-life situations.

V. Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. Strengthen experiential learning approaches. Teachers should incorporate more hands-on, real-life, and market-based activities to ensure that livelihood skills are not only taught but also meaningfully experienced by students.
2. Enhance sustainability integration across all areas. Greater emphasis should be given to upcycling, marketing, and digital promotion to achieve more consistent and balanced implementation of sustainable livelihood practices.
3. Develop students' entrepreneurial and reflective skills. Activities such as business simulations, product development, and reflective journaling should be intensified to improve students' entrepreneurial mindset and metacognitive abilities.
4. Promote market-oriented learning. Schools should provide opportunities for students to engage in actual selling, community-based projects, and industry linkages to strengthen the real-world application of skills.
5. Pilot test and validate the Siklab-Kabuhayan Toolkit. The proposed toolkit should be implemented and evaluated in actual classroom settings to determine its effectiveness in improving the integration of sustainability, entrepreneurship, and livelihood skills.
6. Provide continuous teacher training and support. Professional development programs focusing on sustainable entrepreneurship, digital marketing, and innovative teaching strategies should be conducted to enhance instructional practices.
7. Conduct further studies. Future research may examine the long-term impact of livelihood education on students' employability and income generation and assess the effectiveness of the toolkit across different contexts.

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