

Integrating Food Culture and Tradition in Enhancing Students' Culinary Safety and Competencies

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Abstract—This study aimed to determine the relationship between the extent of integrating food culture and students' culinary safety and competence among grade 10 cookery students in selected Junior High Schools. Additionally, it addressed the extent of integrating food culture and tradition, the level of students' culinary safety, the level of students' culinary competence. It also investigated the significant relationship between the extent of integrating food culture and tradition and students' culinary safety and the significant relationship between the extent of integrating food culture and tradition and students' culinary competence. The study utilized a descriptive research design, involving 280 grade 10 cookery students from four (4) different Junior High Schools in SDO- Cabuyao City who were selected through random sampling. Data were collected using researcher-developed questionnaires. The key findings revealed that the extent of integrating food culture and tradition were all very highly integrated among the respondents. The level of students' culinary safety was all very highly safe among the respondents. The level of students' culinary competence was all very highly competent among the respondents. A significant relationship between the extent of integrating food culture and tradition and students' culinary safety and a significant relationship between the extent of integrating food culture and tradition and students' culinary competence. Integrating food culture and tradition shows significant relationship on students' culinary safety and culinary competence, thus the rejection of the hypotheses was evident. Therefore, it is concluded that introducing food culture and tradition in culinary courses increase students' skills and abilities in the application of safe culinary methods. It is recommended that, teachers may avail professional training on effectively integrating traditional food knowledge with modern culinary safety standards to ensure balanced and meaningful instruction, culinary programs may include hands-on activities featuring traditional recipes and preparation methods while emphasizing proper food safety procedures.

Keywords— Food Culture, Traditions, Students Safety, Culinary Safety, Culinary Competence.

I. INTRODUCTION

Food culture and tradition are fundamental components of human society that influence not only what people eat but how they prepare, share, and perceive food. As expressions of identity, values, and history, culinary traditions shape everyday practices and community norms, contributing to cultural continuity and social cohesion (Julbanyong & Udomratanamane, 2025). In educational contexts, incorporating students' cultural food practices into instruction can enhance relevance and engagement, making learning more meaningful and reflective of real-world food experiences. When students see their cultural heritage valued in the classroom, they are more motivated to connect theoretical

knowledge with practical application, strengthening their overall food literacy and cultural empathy.

Within these culturally grounded practices, culinary safety emerges as a critical concern in both educational and food industry settings. Food safety culture defined as the shared values, beliefs, and norms about safe food handling significantly impacts how individuals behave in food preparation environments (Demenciano et al., 2024). Ensuring that students understand and adopt safe practices is vital for preventing foodborne illnesses and promoting health. Integrating traditional food preparation methods with modern food safety principles allows educators to respect cultural heritage while teaching students how to mitigate risks associated with food handling, cross-contamination, and hygiene. This approach bridges cultural knowledge with essential safety competencies, fostering responsible food handling in both domestic and professional culinary environments.

In the context of student competence, the integration of food culture and safety education is instrumental in developing well-rounded culinary learners. Competence in culinary education encompasses technical skills, safety knowledge, critical thinking, and confidence in food preparation tasks all of which can be strengthened when instruction acknowledges cultural relevance and practical application (Alordiah et al., 2025). Food education that weaves together cultural traditions and safety standards supports experiential learning and enhances students' ability to apply what they learn in diverse settings. Therefore, this study aims to explore how integrating food culture and tradition can enhance both culinary safety and students' competence, highlighting culture as a dynamic instructional tool that enriches skill development and learner outcomes.

1.1 Statement of the Problem

Problem/s which were addressed by the research

The primary aim of the study was to determine the relationship of food culture and tradition to culinary safety and culinary competence among Grade 10 Cookery students. This sought to answer the following questions:

1. What is the extent of integrating food culture and tradition in terms of:
 - 1.1 seasonality and availability;
 - 1.2 social practices;
 - 1.3 innovation and adoption; and
 - 1.4 economic factor?
2. What is the level of students' culinary safety in terms of:

- 2.1 personal hygiene;
- 2.2 cleaning and sanitizing;
- 2.3 equipment safety; and
- 2.4 food handling?
- 3. What is the level of students' culinary competence in terms of:
 - 3.1 knife skills;
 - 3.2 cooking techniques;
 - 3.3 plating and presentation; and
 - 3.4 flavor development?
- 4. Is there a significant relationship between the extent of integrating food culture and tradition to students' culinary safety?
- 5. Is there a significant relationship between the extent of integrating food culture and tradition to students' culinary competence?

II. METHODOLOGY

The study utilized a descriptive research design, involving 280 grade 10 cookery students from four (4) different Junior High Schools in SDO- Cabuyao City who were selected through random sampling. Data were collected using researcher-developed questionnaires..

III. RESULTS AND DISCUSSION

This part discusses the results that were yielded from the treatment of the data gathered in this study. The following tabular presentations and discussions further determine the relationship of food culture and tradition to culinary safety and culinary competence among students.

Extent of Integrating Food Culture and Tradition

In this study, the extent of integrating food culture and tradition were describe in terms of seasonality and availability, social practices, innovation and adoption, and economic factor and was determined through mean and standard deviation.

The following tables show the extent of teacher's integration of food culture and tradition in teaching as assessed by the students.

Table 1 presents the extent of integrating food culture and tradition in terms of seasonality and availability.

As shown, students understand the cultural significance of using seasonal ingredients in traditional dishes as explained by the teacher. They can also identify which local ingredients are available during specific seasons and were able to select ingredients based on their seasonality to ensure freshness and quality. Additionally, the teacher encourages them to use seasonal produce to reduce food costs and waste and to adjust cooking practices according to the availability of seasonal ingredients as well.

The extent of integrating food culture and tradition in terms of seasonality and availability attained the overall weighted mean of 4.89 with a standard deviation of 0.31, verbally interpreted as Very Highly Extent. This indicates strong agreement among respondents that teachers effectively emphasize the cultural importance of seasonal ingredients.

Table 1. Extent of Integrating Food Culture and Tradition in terms of Seasonality and Availability

Statements The teacher...	Mean	SD	Remarks
...selects ingredients based on their seasonality to ensure freshness and quality.	4.91	0.30	Strongly Agree
...helps the students identify which local ingredients are available during specific seasons.	4.92	0.27	Strongly Agree
...adjusts cooking practices according to the availability of seasonal ingredients.	4.82	0.40	Strongly Agree
...encourages the use of seasonal produce to reduce food costs and waste.	4.89	0.31	Strongly Agree
...explains the cultural significance of using seasonal ingredients in traditional dishes.	4.93	0.26	Strongly Agree
Weighted Mean	4.89		
SD	0.31		
Verbal Interpretation	Very Highly Extent		

In summary, the results indicate that students are guided successfully in recognizing ingredient seasonality, make informed selections based on availability, and appreciate the relevance of seasonal produce in traditional cooking practices.

Table 2 reveals a very strong integration of food culture and tradition within social practices as facilitated by the teacher.

Table 2. Extent of Integrating Food Culture and Tradition in terms of Social Practices

Statements The teacher...	Mean	SD	Remarks
...encourages respect for cultural traditions when preparing and serving food.	4.98	0.16	Strongly Agree
...facilitates group activities that promote sharing and appreciation of food culture.	4.93	0.29	Strongly Agree
...integrates traditional food preparation practices in cooking performance.	4.91	0.29	Strongly Agree
...explains the role of food in social and cultural gatherings.	4.83	0.41	Strongly Agree
...emphasizes the importance of communal practices in enhancing culinary learning.	4.98	0.13	Strongly Agree
Weighted Mean	4.92		
SD	0.28		
Verbal Interpretation	Very Highly Extent		

The data show that respondents strongly agree that the teacher encourages respect for cultural traditions in food preparation and serving. Similarly, the teacher is seen as effectively facilitating group activities that promote sharing and appreciation of food culture and integrating traditional food preparation practices into cooking performances. The role of food in social and cultural gatherings is also well explained by the teacher. Moreover, the importance of communal practices in enhancing culinary learning is highly emphasized.

The overall weighted mean of 4.92 with a standard deviation of 0.28 leads to a verbal interpretation of "Very Highly Extent," indicating that the integration of food culture and tradition in social practices is very strongly embedded in the teaching approach. This suggests that students are not only learning about food as nourishment but are also deeply engaged in the social and cultural dimensions of food, such as respect for tradition, communal sharing, and the social significance of food in gatherings. Such findings align with broader research emphasizing that food practices are key

expressions of social bonds, cultural identity, and shared values, often enacted through rituals and communal activities that reinforce group cohesion and cultural continuity

In summary, the results demonstrate that the teacher successfully fosters an environment where food culture and tradition are actively integrated into social learning experiences, promoting respect, appreciation, and communal participation in culinary practices. This holistic approach supports students in understanding food not just as a physical sustenance but as a vital cultural and social practice.

Table 3 illustrates a very strong integration of food culture and tradition through innovation and adoption as facilitated by the teacher.

Table 3. Extent of Integrating Food Culture and Tradition in terms of Innovation and Adoption

Statements	Mean	SD	Remarks
The teacher...			
...adopts new cooking techniques while respecting traditional food practices.	4.98	0.13	Strongly Agree
...integrates innovative tools and methods to improve food safety during cooking activities	4.87	0.35	Strongly Agree
...adopts traditional recipes with modern approaches without losing authenticity.	4.84	0.38	Strongly Agree
...demonstrates flexibility in adopting new food safety practices.	4.93	0.26	Strongly Agree
...encourages creative ways to enhance student's culinary skills while maintaining cultural values.	4.95	0.23	Strongly Agree
Weighted Mean	4.91		
SD	0.29		
Verbal Interpretation	Very Highly Extent		

Respondents strongly agree that the teacher adopts new cooking techniques while still respecting traditional food practices. The teacher also effectively integrates innovative tools and methods to improve food safety during cooking activities and adopts traditional recipes with modern approaches without compromising authenticity. Furthermore, the teacher demonstrates flexibility in adopting new food safety practices and encourages creative ways to enhance students' culinary skills while maintaining cultural values.

The overall weighted mean of 4.91 with a standard deviation of 0.29 leads to a verbal interpretation of "Very Highly Extent," indicating that innovation and adoption are deeply embedded in the teaching approach to food culture and tradition.

This suggests that students are not only exposed to traditional culinary knowledge but are also encouraged to embrace modern techniques and tools that enhance food safety and skill development without losing the cultural essence of the dishes. Such an approach aligns with contemporary perspectives that highlight the dynamic interplay between tradition and innovation in food practices, where respecting cultural heritage coexists with adopting new methods to meet current needs and improve outcomes. This balance promotes culinary education's innovation and flexibility while maintaining its authenticity.

The teacher very effectively integrates innovation with traditional food culture by adopting new techniques and tools that enhance safety and creativity without sacrificing

authenticity. This balanced approach supports cultural preservation while fostering skill development and aligns with global trends emphasizing the dynamic interplay between tradition and innovation in sustainable food systems.

In summary, the results demonstrate that the teacher successfully integrates innovation with tradition, guiding students to appreciate and apply modern culinary advancements alongside traditional food practices. This approach nurtures both cultural respect and practical skills, preparing students to navigate the evolving landscape of food culture with both reverence and creativity.

Table 4 demonstrates a very strong integration of food culture and tradition through the lens of economic factors as facilitated by the teacher.

Respondents strongly agree that the teacher carefully considers the cost of ingredients when planning and preparing dishes, indicating consistent agreement. The teacher also effectively teaches students how to manage food preparation within a limited budget and emphasizes the importance of reducing food waste to save costs. Additionally, the encouragement to select locally available ingredients to minimize expenses is strongly supported and guidance in preparing dishes that balance affordability with cultural authenticity is highly valued.

Table 4. Extent of Integrating Food Culture and Tradition in terms of Economic Factor

Statements	Mean	SD	Remarks
The teacher...			
...considers the cost of ingredients when planning and preparing dishes.	4.93	0.26	Strongly Agree
...teaches students how to manage food preparation within a limited budget.	4.95	0.24	Strongly Agree
...emphasizes the importance of reducing food waste to save costs.	4.90	0.31	Strongly Agree
...encourages to select locally available ingredients to minimize expenses.	4.87	0.38	Strongly Agree
...guides students in preparing dishes that balance affordability with cultural authenticity.	4.95	0.22	Strongly Agree
Weighted Mean	4.92		
SD	0.29		
Verbal Interpretation	Very Highly Extent		

The overall weighted mean of 4.92 with a standard deviation of 0.29 leads to a verbal interpretation of "Very Highly Extent," indicating that economic considerations are deeply embedded in the teaching of food culture and tradition. This suggests that students are not only learning about cultural and traditional food practices but are also being equipped with practical skills to manage costs effectively, reduce waste, and make economically sound ingredient choices without compromising cultural authenticity.

Such integration aligns with broader understandings that economic factors, including cost management and local sourcing, play a crucial role in sustaining traditional food practices while ensuring accessibility and sustainability in food preparation.

In summary, the results indicate that the teacher successfully integrates economic awareness into culinary education, guiding students to appreciate the balance between

affordability and cultural values. This approach fosters responsible food preparation practices that honor tradition while addressing practical economic realities, preparing students to make informed and culturally respectful decisions in their culinary endeavors.

Level of Students' Culinary Safety

In this study, the level of students' culinary safety was described in terms of personal hygiene, cleaning and sanitizing, equipment safety, and food handling and was determined through mean and standard deviation.

The following tables shows the level of students' culinary safety as assessed by the students.

Table 5 highlights a very high level of students' culinary safety practices specifically related to personal hygiene. Respondents strongly agree that students consistently wash their hands thoroughly before handling food. Wearing appropriate kitchen attire such as aprons, gloves, and hairnets during cooking is also highly practiced, alongside proper grooming before food preparation. Students are mindful to avoid handling food when feeling unwell to prevent contamination, and they maintain cleanliness throughout the cooking process.

Table 5. Level of Students' Culinary Safety in terms of Personal Hygien

Statements Personal Hygiene in Culinary Safety Practices includes...	Mean	SD	Remarks
...washing hands thoroughly before handling food.	4.93	0.26	Strongly Agree
...wearing appropriate kitchen attire such as an apron, gloves, and haimet during cooking.	4.95	0.24	Strongly Agree
...practicing proper grooming before participating in food preparation.	4.90	0.31	Strongly Agree
...avoiding handling food when feeling unwell to prevent contamination.	4.87	0.38	Strongly Agree
...maintaining cleanliness throughout the cooking process.	4.95	0.22	Strongly Agree
Weighted Mean	4.92		
SD	0.29		
Verbal Interpretation	Very High		

The overall weighted mean of 4.92 with a standard deviation of 0.29 leads to a verbal interpretation of "Very High," reflecting a strong adherence to personal hygiene standards in culinary safety.

These results suggest that students are well-trained and consistently apply essential personal hygiene practices that are critical in preventing food contamination and ensuring food safety. This aligns with broader findings that emphasize the importance of handwashing, appropriate attire, and grooming in reducing foodborne illness risks. However, while the data here show very high compliance, other studies indicate that some aspects of personal hygiene, such as nail care or glove use, may require ongoing reinforcement to maintain consistent practice. Overall, the findings demonstrate that students are effectively guided to uphold rigorous personal hygiene standards, which are foundational to safe culinary practices. In summary, the results indicate that students exhibit a very high level of personal hygiene in culinary safety, reflecting successful instruction and awareness. This strong foundation

in hygiene supports safer food handling and preparation, contributing to healthier culinary environments and reducing the risk of contamination.

Table 6 reveals a very high level of students' culinary safety practices specifically related to cleaning and sanitizing methods.

The respondents strongly agree that utensils and equipment are properly cleaned before and after use, indicating consistent agreement. Regular sanitizing of kitchen surfaces during food preparation is also highly practiced, alongside proper disposal of kitchen. The adherence to correct procedures in washing and sanitizing kitchen tools is strongly supported, as is ensuring that storage areas remain clean and free from dirt and pests.

Table 6. Level of Students' Culinary Safety in terms of Cleaning and Sanitizing

Statements	Mean	SD	Remarks
The method used in cleaning and sanitizing involves...			
...cleaning utensils and equipment properly before and after use.	4.93	0.26	Strongly Agree
...sanitizing kitchen surfaces regularly during food preparation.	4.95	0.24	Strongly Agree
...disposing of kitchen waste properly.	4.90	0.31	Strongly Agree
...following correct procedures in washing and sanitizing kitchen tools.	4.87	0.38	Strongly Agree
...ensuring that storage areas are clean and free from dirt and pests.	4.95	0.22	Strongly Agree
Weighted Mean	4.92		
SD	0.29		
Verbal Interpretation	Very High		

The overall weighted mean of 4.92 with a standard deviation of 0.29 leads to a verbal interpretation of "Very High," reflecting a strong commitment to maintaining cleanliness and sanitation in culinary practices.

These findings suggest that students are well-trained in essential cleaning and sanitizing protocols that are critical to preventing contamination and ensuring food safety. Proper cleaning and sanitizing reduce pathogens to safe levels, protect food from contamination, and maintain hygienic environments, which are foundational principles in food safety standards. The emphasis on regular sanitization of surfaces and proper waste disposal aligns with best practices that minimize risks of foodborne illnesses and pest infestations. Furthermore, maintaining clean storage areas supports the preservation of ingredient quality and safety, reinforcing the importance of a comprehensive sanitation approach in culinary education.

In summary, the results indicate that students exhibit a very high level of competence in cleaning and sanitizing practices, demonstrating effective guidance and awareness. This strong foundation in sanitation supports safer food handling and preparation, contributing to healthier culinary environments and upholding the integrity of traditional and modern food practices.

Table 7 demonstrates a very high level of students' culinary safety practices specifically related to equipment safety.

The respondents strongly agree that students use kitchen equipment according to instructions to avoid accidents, indicating consistent agreement. Checking kitchen equipment for safety before use is also highly practiced, as is reporting and avoiding the use of defective kitchen tools. Proper handling of hot or sharp equipment with necessary precautions is strongly observed, alongside strict adherence to safety measures when operating electrical appliances.

The overall weighted mean of 4.92 with a standard deviation of 0.29 leads to a verbal interpretation of "Very High," reflecting a strong commitment to equipment safety in culinary practices.

Table 7. Level of Students' Culinary Safety in terms of Equipment Safety

Statements	Mean	SD	Remarks
The following practices is implemented to ensure equipment safety...			
...using kitchen equipment according to instructions to avoid accidents.	4.93	0.26	Strongly Agree
...checking kitchen equipment for safety before using them.	4.95	0.24	Strongly Agree
...reporting and avoiding the use of defective kitchen tools.	4.90	0.31	Strongly Agree
...handling hot or sharp equipment with proper precautions.	4.87	0.38	Strongly Agree
...observing safety measures when operating electrical appliances.	4.95	0.22	Strongly Agree
Weighted Mean	4.92		
SD	0.29		
Verbal Interpretation	Very High		

These findings suggest that students are well-trained in essential equipment safety protocols that are critical to preventing accidents and injuries in the kitchen. The emphasis on following instructions, pre-use safety checks, and reporting defective tools aligns with best practices in culinary safety management, which prioritize hazard prevention and risk reduction. Proper handling of potentially dangerous equipment such as hot or sharp tools and electrical appliances further underscores the comprehensive safety culture being fostered. This approach is consistent with established food safety standards that highlight the importance of equipment maintenance and safe operation to ensure a secure cooking environment.

In summary, the results indicate that students exhibit a very high level of awareness and practice regarding equipment safety, demonstrating effective instruction and adherence to safety protocols. This strong foundation in equipment safety supports a safer culinary learning environment, reducing the risk of accidents and promoting responsible use of kitchen tools and appliances.

Table 8 reveals a very high level of students' culinary safety practices specifically related to food handling procedures.

The respondents strongly agree that students consistently separate raw and cooked foods to prevent cross-contamination. Proper storage of perishable food items to maintain freshness is also highly practiced, alongside following correct thawing procedures before cooking frozen foods. Additionally, students store cooked foods at safe

temperatures and practice correct portioning and serving to maintain hygiene.

Table 8. Level of Students' Culinary Safety in terms of Food Handling

Statements	Mean	SD	Remarks
The food handling procedures followed is composed of...			
...separating raw and cooked foods to prevent cross-contamination.	4.93	0.26	Strongly Agree
...storing perishable food items properly to maintain freshness.	4.95	0.24	Strongly Agree
...following proper thawing procedures before cooking frozen foods.	4.90	0.31	Strongly Agree
...storing cooked foods at safe temperatures.	4.87	0.38	Strongly Agree
...practicing correct portioning and serving to maintain hygiene.	4.95	0.22	Strongly Agree
Weighted Mean	4.92		
SD	0.29		
Verbal Interpretation	Very High		

The overall weighted mean of 4.92 with a standard deviation of 0.29 leads to a verbal interpretation of "Very High," reflecting a strong adherence to safe food handling practices.

These findings suggest that students are well-trained in essential food handling protocols that are critical to preventing foodborne illnesses and ensuring food safety. The emphasis on separating raw and cooked foods, proper storage, and thawing aligns with established food safety standards designed to minimize contamination risks and maintain food quality. Correct portioning and serving further support hygienic practices that protect consumers and uphold culinary standards. This comprehensive approach to food handling is consistent with best practices in food safety education, which stress the importance of controlling hazards throughout the food preparation process to safeguard public health.

In summary, the results indicate that students exhibit a very high level of competence in food handling safety, demonstrating effective instruction and awareness. This strong foundation in safe food handling supports healthier culinary environments and reinforces the cultural and practical significance of maintaining food safety in traditional and modern cooking practices.

Level of Students' Culinary Competence

In this study, the level of students' culinary competence was described in terms of knife skills, cooking techniques, plating and presentation, and flavor development and was determined through mean and standard deviation.

The following tables shows the level of students' culinary competence as assessed by the students.

Table 9 indicates a very high level of students' culinary competence in knife skills, reflecting strong proficiency across various aspects of knife handling.

Respondents strongly agree that students handle knives properly to ensure safety. Cutting ingredients evenly according to recipe requirements is also highly practiced, as is applying proper techniques in slicing, chopping, and dicing. The use of appropriate knives for specific kitchen tasks is well

observed, and students are diligent in storing knives safely after use to prevent accidents.

The overall weighted mean of 4.82 with a standard deviation of 0.40 leads to a verbal interpretation of "Very High," indicating that students demonstrate strong knife skills essential for culinary competence.

These results suggest that students are effectively trained in fundamental knife handling techniques that are critical for both safety and culinary precision. Proper knife skills not only reduce the risk of injury but also improve the visual presentation and even cooking of dishes, enhancing overall food quality and kitchen efficiency. The ability to select and use the correct knife for specific tasks, combined with safe storage practices, reflects a comprehensive understanding of knife safety and functionality. This aligns with culinary education standards that emphasize the importance of mastering knife skills as a foundation for more advanced cooking techniques and professional kitchen performance.

Table 9. Level of Students' Culinary Competence in terms of Knife Skills

Statements	Mean	SD	Remarks
The knife handling methods applied in cooking are...			
...handling knives properly to ensure safety.	4.88	0.33	Strongly Agree
...cutting ingredients evenly according to recipe requirements.	4.79	0.43	Strongly Agree
...applying proper techniques in slicing, chopping, and dicing.	4.82	0.39	Strongly Agree
...using appropriate knives for specific kitchen tasks.	4.73	0.47	Strongly Agree
...storing knives safely after use to prevent accidents.	4.87	0.34	Strongly Agree
Weighted Mean	4.82		
SD	0.40		
Verbal Interpretation	Very High		

In summary, the findings indicate that students possess a very high level of competence in knife skills, demonstrating safe handling, precise cutting techniques, and appropriate tool use. This strong proficiency supports their culinary development by ensuring safety, efficiency, and quality in food preparation, which are vital components of both traditional and modern culinary practices.

Table 10 reveals a very high level of students' culinary competence in cooking techniques, demonstrating strong proficiency in applying both traditional and modern methods. Respondents strongly agree that students use appropriate cooking methods tailored to different types of ingredients. The integration of both traditional and modern cooking techniques is also highly practiced, alongside effective control of cooking temperatures to ensure food safety and quality. Students are adept at adjusting cooking methods based on the cultural dish being prepared and evaluating the effectiveness of these techniques in producing quality dishes.

The overall weighted mean of 4.86 with a standard deviation of 0.35 leads to a verbal interpretation of "Very High," reflecting a comprehensive mastery of cooking techniques.

These findings suggest that students are well-equipped with the skills necessary to navigate diverse culinary practices,

balancing respect for cultural traditions with the incorporation of modern innovations. The ability to control cooking temperatures and adjust methods according to the dish underscores their understanding of both food safety and culinary quality, which are essential components of professional cooking. This aligns with broader culinary education principles that emphasize the importance of technique versatility, cultural sensitivity, and critical evaluation to achieve optimal results in food preparation.

Table 10. Level of Students' Culinary Competence in terms of Cooking Techniques

Statements	Mean	SD	Remarks
The following techniques in cooking applied are...			
...appropriate cooking methods for different types of ingredients.	4.93	0.26	Strongly Agree
...both traditional and modern cooking techniques.	4.83	0.39	Strongly Agree
...controlling cooking temperatures to ensure food safety and quality.	4.80	0.41	Strongly Agree
...adjusting cooking methods based on the cultural dish being prepared.	4.88	0.33	Strongly Agree
...evaluating the effectiveness of cooking techniques in producing quality dishes.	4.88	0.33	Strongly Agree
Weighted Mean	4.86		
SD	0.35		
Verbal Interpretation	Very High		

In summary, the results indicate that students demonstrate a very high level of competence in cooking techniques, effectively combining traditional and contemporary methods while maintaining food safety and quality. This strong foundation prepares them to produce culturally authentic and high-quality dishes, reflecting both technical skill and cultural appreciation in their culinary practice.

Table 11. Level of Students' Culinary Competence in terms of Plating and Presentation

Statements	Mean	SD	Remarks
The techniques used for plating and food preservation is consist of...			
...arranging dishes properly to enhance visual appeal.	4.80	0.41	Strongly Agree
...showing creativity in plating while respecting traditional styles.	4.87	0.36	Strongly Agree
...maintaining cleanliness and orderliness in food presentation.	4.78	0.42	Strongly Agree
...considering color, balance, and texture when plating dishes.	4.71	0.48	Strongly Agree
...recognizing the cultural significance of presentation in traditional cuisines.	4.83	0.38	Strongly Agree
Weighted Mean	4.80		
SD	0.41		
Verbal Interpretation	Very High		

Table 11 reveals a very high level of students' culinary competence in plating and presentation, highlighting their ability to combine aesthetic appeal with cultural respect.

Respondents strongly agree that students arrange dishes properly to enhance visual appeal. Creativity in plating is encouraged while still honoring traditional styles and maintaining cleanliness and orderliness in food presentation is also highly practiced. Students consider important visual elements such as color, balance, and texture when plating

dishes, and they recognize the cultural significance of presentation in traditional cuisines.

The overall weighted mean of 4.80 with a standard deviation of 0.41 leads to a verbal interpretation of "Very High," reflecting strong competence in this area.

These findings suggest that students are well-trained to create visually appealing dishes that not only attract the eye but also respect cultural traditions. The emphasis on color, balance, and texture aligns with established culinary principles that enhance the dining experience by engaging multiple senses and conveying cultural narratives through presentation. Creativity balanced with tradition supports both innovation and authenticity, which are key in modern culinary arts. Moreover, maintaining cleanliness and orderliness ensures that the presentation is professional and hygienic, further elevating the quality of the dish. This comprehensive approach to plating and presentation is consistent with best practices that view food presentation as an art form that communicates cultural values and culinary skill.

In summary, the results indicate that students demonstrate a very high level of competence in plating and presentation, successfully combining creativity, cultural respect, and technical skill. This strong foundation enhances their ability to produce dishes that are not only delicious but also visually compelling and culturally meaningful, enriching the overall culinary experience.

Table 12. Level of Students' Culinary Competence in terms of Flavor Development

Statements	Mean	SD	Remarks
The methods used for crafting and refining flavors are...			
...using seasonings properly to enhance the natural flavor of dishes.	4.91	0.29	Strongly Agree
...applying traditional spices and herbs to develop unique flavors.	4.78	0.43	Strongly Agree
...balancing taste elements such as sweet, salty, sour, and bitter in my cooking.	4.83	0.37	Strongly Agree
...recognizing how traditional cooking techniques influence flavor.	4.85	0.36	Strongly Agree
...adjusting flavor profiles based on cultural preferences and food safety standards.	4.90	0.30	Strongly Agree
Weighted Mean	4.85		
SD	0.36		
Verbal Interpretation	Very High		

Table 12 reveals a very high level of students' culinary competence in flavor development, demonstrating their ability to skillfully craft and refine flavors in cooking.

Respondents strongly agree that students use seasonings properly to enhance the natural flavors of dishes. The application of traditional spices and herbs to develop unique flavors is also highly practiced, alongside balancing key taste elements such as sweet, salty, sour, and bitter. Students recognize how traditional cooking techniques influence flavor development and adjust flavor profiles based on cultural preferences and food safety standards.

The overall weighted mean of 4.85 with a standard deviation of 0.36 leads to a verbal interpretation of "Very High," reflecting strong proficiency in flavor development.

These findings suggest that students are effectively trained to enhance and balance flavors by combining traditional knowledge with practical seasoning techniques, which is essential for producing culturally authentic and appealing dishes. The emphasis on balancing taste elements and adjusting flavors according to cultural preferences aligns with culinary best practices that recognize flavor as a dynamic and culturally influenced aspect of cooking. Moreover, the attention to food safety standards while developing flavors highlights a comprehensive approach that ensures both quality and safety in food preparation. This approach is consistent with contemporary culinary science, which integrates sensory analysis and cultural context to refine flavor profiles and elevate the overall dining experience.

In summary, the results indicate that students demonstrate a very high level of competence in flavor development, successfully applying seasoning techniques, traditional spices, and flavor balancing to create dishes that are both authentic and appealing. This strong foundation supports their ability to produce flavorful, culturally relevant, and safe culinary creations, enriching their overall culinary skills and appreciation of food culture.

Significant Relationship Between the Extent of Integrating Food Culture and Tradition and Students' Culinary Safety

In this study, the significant relationship between the extent of integrating food culture and tradition and students' culinary safety were analyzed applying Pearson Correlation Coefficient using Minitab 14.

Table 13 presents the correlation between the Extent of Integrating Food Culture and Tradition and Students' Culinary Safety. The results include Pearson correlation coefficients (r-values), p-values, and sample size (N=280) for each relationship.

Table 13. Significant Relationship Between the Extent of Integrating Food Culture and Tradition and Students' Culinary Safety

Integrating Food Culture and Tradition	Pearson Correlation	Students' Culinary Safety			
		Personal Hygiene	Cleaning & Sanitizing	Equipment Safety	Food Handling
seasonality and availability	0.065	0.071	0.044	0.196*	
	Sig. (2-tailed)	.276	.238	.460	
	N	280	280	280	
social practices	0.055	0.008	0.035	0.026	
	Sig. (2-tailed)	.364	.899	.556	
	N	280	280	280	
innovation and adoption	0.066	0.071	0.006	0.010	
	Sig. (2-tailed)	.272	.237	.916	
	N	280	280	280	
economic factor	0.065	0.110	0.045	0.008	
	Sig. (2-tailed)	.278	.067	.452	
	N	280	280	280	

Note * p < .05

Among the indicators of extent of integrating food culture and tradition only seasonality and availability show a significant positive relationship with the indicators of students' culinary safety food handling ($r = 0.196, p = .000$). The significance indicates that greater integration of lessons on seasonal and locally available ingredients is associated with better student practices in safe food handling. This implies further that when students become more aware of ingredient freshness, sourcing, and proper selection tied to seasonality, they may also become more careful and attentive in handling food safely.

However, the non-significant result on the other aspects imply that integrating cultural aspects of food may not strongly influence students' foundational kitchen safety behaviors. Culinary safety practices such as hygiene, sanitation, and equipment handling may be more directly shaped by explicit safety instruction, laboratory routines, and supervision rather than by cultural integration alone.

Based on the findings of the study, the integration of food culture and tradition in culinary education has been increasingly examined in recent literature, particularly in relation to students' culinary safety.

Table 14 examines the significant relationships between the extent of integrating food culture and tradition and students' culinary competence across four domains: knife skills, cooking techniques, plating and presentation, and flavor development. The data reveals that among the different aspects of integrating food culture and tradition, seasonality and availability show a statistically significant positive correlation with plating and presentation (Pearson correlation = 0.184, $p = 0.002$), indicating that students who more deeply integrate seasonal and available food culture tend to perform better in plating and presentation skills. Similarly, the economic factor aspect of integration is significantly correlated with plating and presentation (Pearson correlation = 0.123, $p = 0.039$), suggesting that awareness of economic considerations in food culture also enhances students' competence in plating and presentation.

In contrast, no significant relationships were found between the other culinary competence areas (knife skills, cooking techniques, flavor development) and the various dimensions of integrating food culture and tradition, including social practices and innovation and adoption, as their p -values exceed the typical significance threshold of 0.05. This implies that while integrating food culture and tradition broadly supports culinary competence, its strongest measurable impact in this study is on the students' ability to plate and present dishes effectively, particularly when considering seasonality and economic factors.

These align with the understanding that plating and presentation are highly influenced by cultural and contextual factors such as ingredient availability and cost, which shape how dishes are visually composed and presented. The integration of food culture, especially through seasonality and economic awareness, likely encourages students to creatively and thoughtfully present dishes in ways that honor tradition while adapting to practical constraints. This supports the broader notion that culinary education benefits from

embedding cultural knowledge to enhance not only technical skills but also the aesthetic and cultural dimensions of cooking.

Table 14. Significant Relationship Between the Extent of Integrating Food Culture and Tradition and Students' Culinary Competence

Integrating Food Culture and Tradition		Students' Culinary Competence			
		Knife Skills	Cooking Technique	Plating and Preparation	Flavor and Development
seasonality and availability	Pearson Correlation	0.017	0.005	0.184*	0.003
	Sig. (2-tailed)	.773	.932	.002	.955
	N	280	280	280	280
social practices	Pearson Correlation	0.014	0.030	0.036	0.014
	Sig. (2-tailed)	.822	.620	.545	.814
	N	280	280	280	280
innovation and adoption	Pearson Correlation	0.031	0.013	0.053	0.081
	Sig. (2-tailed)	.609	.831	.379	.179
	N	280	280	280	280
economic factor	Pearson Correlation	0.022	0.012	0.123*	0.051
	Sig. (2-tailed)	.712	.843	.039	.395
	N	280	280	280	280

Note * $p < .05$

The data shows that integrating food culture and tradition, particularly through seasonality and economic factors, significantly enhances students' plating and presentation skills. While other culinary competencies like knife skills, cooking techniques, and flavor development are not significantly linked to cultural integration in this study, the findings highlight the important role of cultural and economic awareness in elevating the visual and cultural quality of culinary work.

IV. CONCLUSION AND RECOMMENDATIONS

A significant relationship was found between integrating food culture and tradition and students' culinary safety thus, the null hypothesis is rejected. This concludes that strengthening the integration of food culture and tradition in culinary instruction can further enhance students' adherence to proper food safety practices.

A significant relationship was also found between the extent of integrating food culture and tradition and students' culinary competence thus, the null hypothesis is rejected. This concludes that embedding food culture and tradition in teaching can preserve cultural heritage and also serves as an effective approach in developing students' technical and creative culinary skills.

Based on the drawn conclusions, the following recommendations are given:

Culinary programs may include hands-on activities featuring traditional recipes and preparation methods while emphasizing proper food safety procedures.

School Head may integrate food culture and traditional practices into culinary lessons, collaborate with local experts, and regularly assess students' safety practices and skill development to enhance competence and responsible food handling.

Teachers may receive professional development on effectively integrating traditional food knowledge with modern culinary safety standards to ensure balanced and meaningful instruction.

Future researchers may conduct further studies on integrating food culture and tradition in enhancing students' culinary safety and competencies in different settings and with additional variables to validate the findings.

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