

Development And Validation Of Competency-Based Instructional Module In Cookery

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ABSTRACT

The study evaluated the acceptability of a competency-based cookery instructional module. It involved 15 cookery instructors and 15 industry assessors. The module was validated by seven jurors and was found to be valid according to the TESDA training regulation. The module provided students with enough knowledge, skills, and attitudes in cookery based on industry standards. The respondents rated it highly acceptable. The development of the module should focus on realising industry competencies, allowing students to acquire competencies applicable to local and international workplaces. Students should also be encouraged to take the TESDA national assessment in cookery.

Keywords: Level of Acceptability, Activities, Competency-based instructional module, Cookery, Development, Evaluation, Experts Validation.

1. INTRODUCTION

Instructional materials are crucial for curriculum implementation and human capabilities expansion. Innovative teaching strategies like cookery modules are needed to enhance students' performance and meet industry standards. In the Philippines, cookery modules are justified due to their independence and suitability for a rapidly growing school population. The researcher aims to develop and validate an instructional module in cookery to help students prepare for the Technical Education and Skills Development Authority (TESDA) cookery competency National Certificate II assessment.

2. LITERATURE REVIEW

2.1. Module Development

A module is a structured learning program with a single objective, ranging from hours to months, focusing on a specific topic, involving instruction-specific objectives, activities, and criterion-referenced evaluations (Misola, 2001; Zulueta, 2008).

SEAMEO-INNOTECH (1991) emphasised the effectiveness of learning modules, utilising operant conditioning psychological law to enhance essential program elements in courses with uneven preparation standards. It focused on student progress and mastery learning (Bloom, 1981; SEAMEO, 1991).

Querubin (1996) emphasised the significance of self-contained modules, which enable students to work independently, be self-paced, and have well-defined topics. These modules should be clear, correct, and logically presented, with accurate, up-to-date knowledge and universal meaning, interrelated with activities and evaluations for effective learning outcomes.

Samonte (2004) created an environmental outdoor education module for St. Scholastica College students, meeting content, instructional characteristics, and effectiveness criteria. Oligario (2014) developed a module on electrical installation and maintenance, focusing on students' performance. Two second-year students were tested, with the experimental group performing better and recommended as supplementary learning material.

2.2. Roles of Modules

Modules serve several purposes, including cost-effectiveness, uniformity of educational objectives, mastery of

concepts, teaching staff improvement, resource availability for remedial and enrichment work, and flexibility for rapid change in response to changing needs. They ensure satisfactory achievement, ensure mastery of concepts, and facilitate rapid change. (SEAMEO,1991).

Floro (2004) argues that modular instruction is effective because it can combine elements in time and space, cater to individual differences, have objectives, sequence information logically, allow unlimited use of various media and methods, combine various types of student participation, provide immediate feedback on progress, and incorporate interactive group work as part of the learning experience.

2.3. Philosophy and Rationale of Learning Modules

The learning module philosophy acknowledges individual learning styles and backgrounds, promoting independence and self-pacing. This philosophy benefits developing countries like the Philippines, where resources are limited (Zulueta,2008). Agnihotri's 2011 study on the modular approach to teaching B. Ed. trainees found it effective in enhancing students' attitudes and self-confidence, as the self-learning environment promotes positive changes.

Arce (2009) emphasises the importance of creating an environment accommodating individual learning differences by introducing diverse instructional materials, activities, and tasks.

Floro (2004) found instructional materials effective in Microbiology teaching at the College of Optometry and Dentistry, while Ciao (1986) studied their acceptability for speech teaching, experts' evaluations, and speech recognition skills development.

Modular instruction is effective in Philippine Literature, engineering materials, and science, with student-constructed materials providing higher scores, demonstrating its value in enhancing learning experiences (Cabanale, 2005; O'Connell, 2004).

2.4. Criteria of a Good Module

A well-designed module should be self-contained, self-paced, well-defined, motivated, and engaging. It should provide interaction, be appropriately sequenced, and be appealing. It should not imply other subjects and utilise every opportunity for practical learning outcomes. It should contain all necessary components and be highly supportive, helping students achieve their learning goals (Garillo, 2011; Zulueta, 2008; Dewey, 1950; Brown and Associates,1964 in de los Santos, 1998; & Encyclopedia, Com, 2014).

2.5. Module Design Process

The design of higher education courses and modules involves integrating learner needs, aims, outcomes, resources, teaching strategies, assessment criteria, and evaluation. Brown and Atkins emphasise "learning-for-understanding" and "learning-for-knowledge" orientations. Module design should involve sustained interaction with content, explicit explanations, reasonable workloads, in-depth exploration opportunities, and appropriate assessment strategies. These ideas are relevant in today's higher education environment (Toohey, 1999; Biggs, 1999; Brown & Atkins, 1991).

2.6. Advantages and Disadvantages of Modules

Module advantages enable students to work independently, take responsibility for their learning, and learn from textbooks, reducing competition for grades. Instructor-made materials increase awareness, control, flexibility, and self-direction but may not be universally applicable (Garillo, 2011; Floro, 2004).

Garillo (2012) highlighted the benefits of modular programs, including organising experiments, identifying student differences, assessing progress, reducing routines, facilitating material updates, serving as models, and sharing between schools. Celiz (2006) found significant improvement in using instructional modules, while Aquino-Danganan (2001) proposed modules for computational skills development. Aggabao (2002) developed an individualised self-instructional module.

2.7. Instructional Material Development

Gagne's instructional theory outlines three key elements: a taxonomy of learning outcomes, specific conditions for achieving these outcomes, nine instruction events, and a template for developing and delivering instruction units. Salandanan (2001) suggests that self-instructional modules are the best means for teachers to guide students' daily search for new understandings and verifications.

Floro (2004) emphasises the need for resourcefulness and creativity in creating modules with a standard

presentation format and consistent assessment system of teaching strategies. De Los Santos (2013) claims that technology-enhanced drills and programmed practice sheets effectively teach students basic badminton skills.

Dewey's instruction philosophy emphasises that learners must be motivated and interested in the learning task and that real-life experiences should be integrated into the classroom. Research shows that instructional materials employing instructional design theories, models, and learning theories are more effective in understanding concepts and providing meaningful learning.

2.8. The Importance of Instructional Material

Instructional materials are crucial for effective teaching and learning and influence classroom experience. Programmed materials supplement instruction and can be developed through the ADDIE process. Modular approaches offer advantages like organising sequences based on students' interests, focusing on deficiencies, and allowing personal contact (Brown and Associates, 1999 in De Los Santos, 2013; Hamona, 2002; Greager & Murray, 1991).

2.9. Cookery Competencies

The Tourism Sector competency map outlines core competencies, including kitchen maintenance, stock preparation, appetisers, salads, sandwiches, meat, vegetables, eggs, starch, seafood, desserts, and packaging prepared food.

The cookery qualification, aimed at preparing meals and desserts, is a competency-based curriculum used in courses like Hotel and Restaurant Services Technology, Hotel and Restaurant Management, and Bachelor of Science in Education (Reyes, 2007; Guillergan, 2011).

Manzano's 2013 study in Manila emphasised the significance of education, information dissemination, and training in implementing food safety standards and guidelines among students. Udofia's 2013 study validated training modules for Senior Secondary students in Rivers State plantain flour processing enterprises, demonstrating their necessity for skill acquisition.

Gonzales (2014) created a pattern drafting module for Grade 9 dressmaking using Pattern Maker Software, which involved Technology and Livelihood Education teachers and administrators. The module was assessed for content, equity, accessibility, organisation, presentation, and instructional design. The research suggests emphasising computerised pattern drafting in students' learning to meet global market demands.

3. OBJECTIVES OF THE STUDY

3.1. General

The study aimed to develop and validate the competency-based instructional module in cookery.

3.2. Specifically

The study aimed to answer the following questions.

1. What competency-based instructional module in cookery can be developed?
2. What is the validity of the competency-based instructional module in cookery as evaluated by the academe and the industry?
3. What is the level of acceptability of the competency-based instructional module in cookery as evaluated by the students?
4. Is there a significant difference in the level of validity of the competency-based instructional module in cookery as evaluated by the academe and the industry?

3.3. Hypothesis

The level of validity of the competency-based instructional module in cookery, as validated by the academe and the industry, is the same.

3.4. Theoretical Framework

This study explores instructional material development, a design-oriented theory, and its application to cookery education. It develops a cookery instructional module using Skinner's programmed learning theory and a constructivist approach, allowing students to learn independently at their own pace. The module aims to help students construct knowledge and skills based on various cookery competencies. The study aims to assess the acceptability of this competency-based instructional module, aiming to make learning more effective and permanent in cookery education.

3.5. Conceptual Paradigm

This study utilised a system approach model to develop cookery instructional modules, incorporating learning competencies from TESDA's Training Regulations, references, materials, and internet pictures. The module's development and validation were evaluated by academia and industry, resulting in the first output.

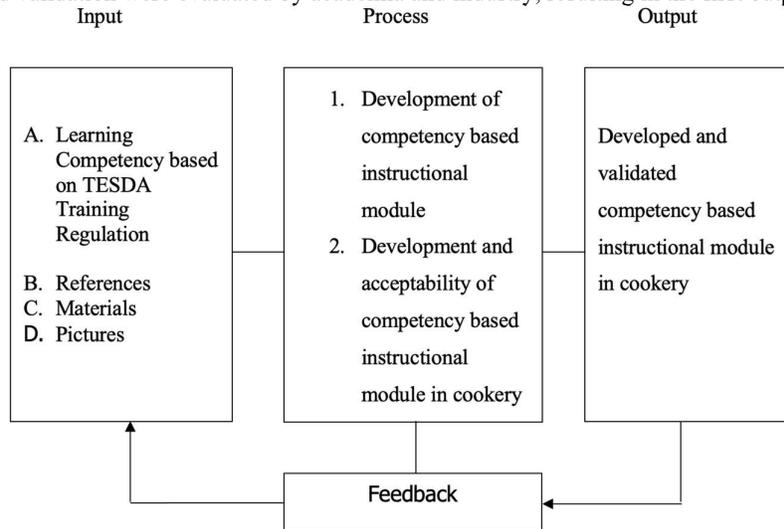


Figure 1. The conceptual model of the whole study.

4. METHODOLOGY

4.1. Research Design

The study used a descriptive-developmental research design to examine a problem systematically based on extensive observations. Descriptive research describes the nature of a situation and its impact on people. At the same time, developmental studies focus on the progress of an institution or agency at different stages of its life. The study aimed to develop, validate, and determine the acceptability of an instructional module in cookery using descriptive questionnaires from industry and academia validators and students.

4.2. Respondents of the Study

This study selected respondents based on their cookery knowledge and skills, and the researcher personally administered a questionnaire. Fifteen instructors from Academe instructors taught cookery at West Visayas State University System, and 15 were assessed as trainers and industry personnel.

Table 1
Distribution of Respondents

Category	F	%
Industry/Assessors	15	50
Academe (Cookery Instructors)	15	50
WVSU- Janiuay Campus	3	10
WVSU- Lambunao Campus	3	10
WVSU- Calinog Campus	3	10
WVSU-Himamaylan	3	10
WVSU-Pototan	3	10
Entire Group	30	100

4.3. Sources of Data

4.3.1. Development of the Module

The competency-based instructional module was designed with a qualification title, a unit of competency, learning outcomes, objectives, and experiences organised from simple to complex. It was tested using lecture-discussion, role-playing, and cooperative learning strategies.

Development of Competency-Based Instructional Module in Cookery

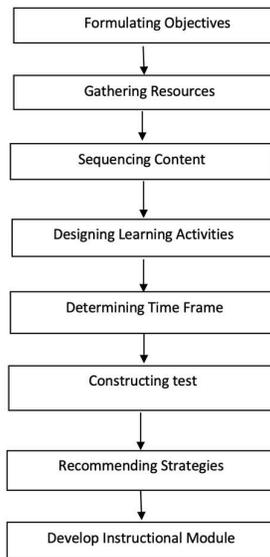


Figure 2. Flow chart on the Development of Competency-Based Instructional Module in Cookery.

4.3.2. Validation of the Instructional Module

Figure 3 shows the researcher obtaining permission from West Visayas State University to conduct a cookery study. The researcher visited campuses and spoke with instructors to validate instructional materials. Confidentiality was assured, and respondents were chosen for the study. A questionnaire and instructional material were distributed, and responses were used to validate the cookery module.

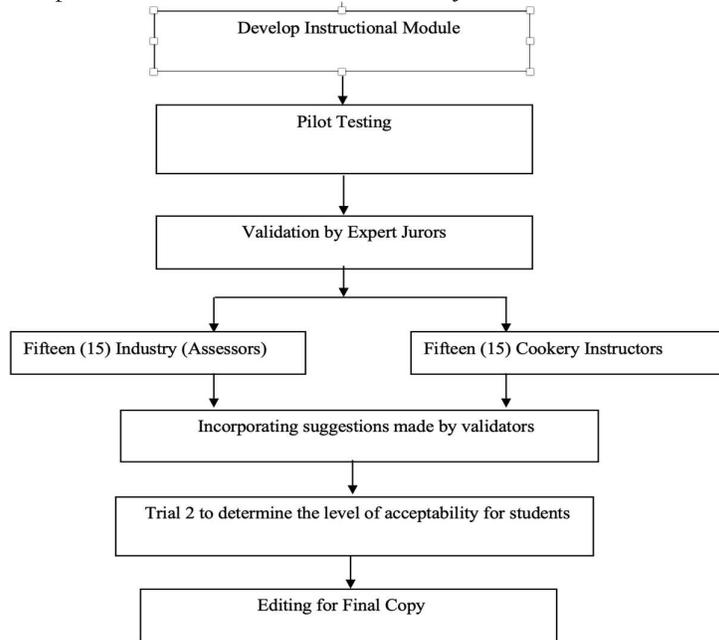


Figure 3. Flow Chart on the Validation of Instructional Module in Cookery.

4.4. Data Gathering Instrument

The study used two validated questionnaires to gather demographic and respondent information for a module. The first set collected evaluation criteria, while the second set asked for respondents' ratings. Experts validated these instruments for data accuracy and validity, providing valuable insights.

4.4.1. Validation and Reliability Test of the Questionnaire

The study utilised a teacher-made data collection instrument, with validation as a crucial aspect. A research adviser and seven experts revised the questionnaire, and all items passed reliability tests. The questionnaire was answered by 30 instructors and 40 students, with Cronbach's Alpha test and SPSS software used to ensure its reliability.

4.5. Data Processing Technique

The researcher collected data, categorised it, and processed it using SPSS. Frequency count and percentage were used to validate questionnaire responses. Weighted mean was used to determine module acceptability, and a t-test was used to identify significant differences between academic and industry perspectives on content, learning activities, assessment, presentation, organisational design, and support.

The Four-Point hedonic scale was used to evaluate the validity of the module.

Rating Scale	Description
3.28-4.00	Strongly Agree
2.52-3.27	Agree
1.76-2.51	Disagree
1.0-1.75	Strongly Disagree

The Five-point Likert scale was used to determine the acceptability of the module.

Rating Scale	Description
4.21-5.00	Highly Acceptable
3.41-4.20	Very Acceptable
2.61-3.40	Acceptable
1.81-2.60	Fairly Acceptable
1.0-1.80	Not Acceptable

A t-test and p-value confirmed significant differences in module validation between academe and industry in content, learning activities, organisation, presentation, and instructional design.

5. RESULTS AND DISCUSSION

5.1. Development of Competency-Based Instructional Module in Cookery

The 13 Cookery module was developed to teach individuals the importance of cleanliness, sanitation, and waste disposal in the kitchen. It covers various aspects such as cleaning and maintaining kitchen premises, preparing stocks, sauces, soups, appetisers, salads, sandwiches, meat cuts, vegetables, egg dishes, starch dishes, poultry and game dishes, seafood dishes, desserts, and packaging food. The modules were created using various learning strategies, including lecture discussion, role-playing, demonstration, project-making, and cooperative learning. The goal is to ensure the cleanliness and safety of the kitchen and the overall dining experience.

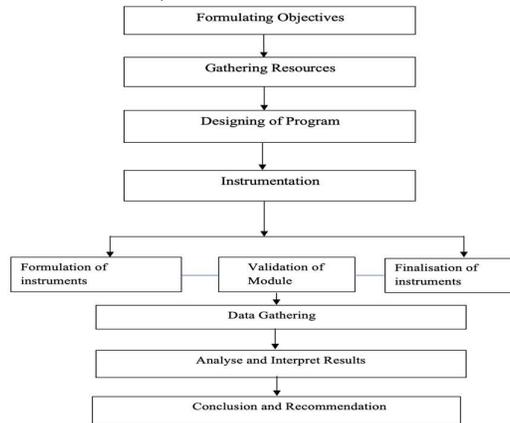


Figure 3. Flowchart on the Development of Competency-Based Instructional Module in Cookery.

5.2. Validation of Content of the Instructional Module

The cookery modules underwent expert validation, with 15 industry experts and 15 academic instructors reviewing content. The modules cover kitchen preparation competencies like cleaning, maintaining premises, preparing stocks, soups, appetisers, salads, sandwiches, meat, vegetables, eggs, starch, seafood, desserts, and

packaging, emphasising cleanliness, sanitisation, waste disposal, and performance mise en place.

Table 2
Validation of Competency-Based Instructional Module in Cookery Regarding Content

Content	M	Industry Description	M	Academe Description	M	Entire Group Description
1. Aligns with the curriculum and standards of TESDA Training Regulation	4.00	SA	3.92	SA	3.96	SA
2. Appropriate for all levels and is designed to meet the needs of individual learners from various skill levels	4.00	SA	3.97	SA	3.98	SA
3. Applicable to actual life situations.	3.87	SA	3.87	SA	3.87	SA
4. Enhances and develops conceptual understanding in a logical and organised manner.	3.97	SA	4.00	SA	3.98	SA
5. Conforms with the expected learning outcomes in clear and simple language	3.99	SA	4.00	SA	3.99	SA
6. Develop manipulative skills in students.	3.73	SA	3.97	SA	3.85	SA
7. Arouses students' interest and encourages personal responsibility for learning.	4.00	SA	3.80	SA	3.90	SA
8. Provides updated information and pictures relevant to the content.	4.00	SA	3.97	SA	3.98	SA
9. Allows the use of various Teaching strategies (lecture, demonstration, project/laboratory)	4.00	SA	3.87	SA	3.93	SA
10. Promotes manipulation of materials and equipment to understand the topic better.	4.00	SA	3.87	SA	3.93	SA
Overall Mean	3.95	SA	3.91	SA	3.93	SA

The competency-based instructional module's content was highly rated by industry and academia, with a rating of $M=3.93$, indicating a solid agreement that the module effectively measures students' required competencies. The industry and academe strongly agreed that the module's content aligns with the curriculum and TESDA training regulation standards, scoring 4.00 and 3.92, respectively.

The competency-based cookery module, approved by industry and academia, enhances understanding, develops manipulative skills, and arouses interest. It is suitable for all levels and promotes various teaching strategies.

Table 3
Validation of the Competency-Based Instructional Module in Cookery Regarding Content

Module	Industry	Academe	Entire group Mean	Description
Module 1: Cleaning and Maintaining Kitchen Premises	3.96	3.88	3.92	SA
Module 2: Preparing Stocks, Sauces and Soups	3.99	3.88	3.94	SA
Module 3: Preparing Appetisers	3.97	3.90	3.94	SA
Module 4: Preparing Salads and Dressing	3.97	3.90	3.94	SA
Module 5: Preparing Sandwiches	3.96	3.90	3.93	SA
Module 6: Preparing Meat Dishes	4.00	3.90	3.95	SA
Module 7: Preparing Vegetable Dishes	4.00	3.90	3.95	SA
Module 8: Preparing Egg Dishes	4.00	3.90	3.95	SA
Module 9: Preparing Starch Dishes,	3.96	3.90	3.93	SA
Module 10: Preparing Poultry and Game Dishes	4.00	3.90	3.95	SA
Module 11: Preparing Seafood Dishes	4.00	3.90	3.95	SA
Module 12: Preparing Desserts	3.96	3.90	3.93	SA
Module 13: Packaging Prepared Food	3.96	3.90	3.93	SA

The industry and academe evaluated each module, with the industry obtaining a mean of 3.96 to 4.00 and the academe ranging from 3.88 to 3.90. Modules 6, 7, 8, 10, and 11 had the highest mean content (M= 3.95), adhering to training regulation standards, including clear learning outcomes, logical structure, and alignment with curricular programs.

Table 4
Validation of Competency-Based Instructional Module Regarding Learning Activities

Activities	M	Industry	M	Academe	M	Entire Group
		Description		Description		Description
1. Provide worthwhile learning experiences to the students	4.00	SA	3.73	SA	3.86	SA
2. Allow inquiry, laboratory and Project-based learning approaches	3.93	SA	3.80	SA	3.86	SA
3. Develop interest among students	3.93	SA	4.00	SA	3.96	SA
4. Suit to the students' need	3.93	SA	3.93	SA	3.93	SA
5. Promote mastery of the topic presented	3.93	SA	3.80	SA	3.90	SA
6. Facilitates the learning process	3.93	SA	3.93	SA	3.93	SA
7. Provides real-life situations	3.93	SA	3.73	SA	3.83	SA
8. Uses materials that are readily available	3.87	SA	3.73	SA	3.8	SA
9. Provides opportunities to use the tools and equipment for laboratory	4.00	SA	3.93	SA	3.96	SA
10. Cater the needs of individual differences	4.00	SA	3.93	SA	3.96	SA
Over All Mean	3.95	SA	3.86	SA	3.90	SA

The industry and academe highly rated the Competency-Based Instructional Module, with a consensus of M=3.90. The modules offer valuable experiences, encourage inquiry, cater to individual differences, and meet training regulations' competency standards. They use various methods, manual creativity, and sophisticated materials, with teachers acting as learning facilitators, allowing students to utilise resources based on their interests.

Table 5
Validation of Competency-Based Instructional Module Regarding Learning Activities.

Module	Industry	Academe	Entire group Mean	Description
Module 1: Cleaning and Maintaining Kitchen Premises	3.96	3.57	3.77	SA
Module 2: Preparing Stocks, Sauces and Soups	3.96	3.59	3.78	SA
Module 3: Preparing Appetisers	3.96	3.59	3.78	SA
Module 4: Preparing Salads and Dressing	3.96	3.59	3.78	SA
Module 5: Preparing Sandwiches	3.96	3.59	3.78	SA
Module 6: Preparing Meat Dishes	3.96	3.59	3.78	SA
Module 7: Preparing Vegetables Dishes	3.96	3.59	3.78	SA
Module 8: Preparing Egg Dishes	3.96	3.59	3.78	SA
Module 9: Preparing Starch Dishes,	3.96	3.59	3.78	SA
Module 10: Preparing Poultry and Game Dishes	3.96	3.59	3.78	SA
Module 11: Preparing Seafood Dishes	3.96	3.59	3.78	SA
Module 12: Preparing Desserts	3.96	3.59	3.78	SA
Module 13: Packaging Prepared Food	3.96	3.59	3.78	SA

The industry and academia evaluated the modules, rating them at 3.96 and the academia at 3.59, respectively. The ratings were 3.78, except for module 1, which had the lowest evaluation at 3.77. The twelfth module provided ample opportunities for students to use laboratory tools and equipment, ensuring varied work and objectives. Engaging in these activities led to more worthwhile learning experiences.

Table 6
Validation of Competency-Based Instructional Module in Cookery Regarding Organization and Presentation

Organisation and Presentation	M	Industry Description	M	Academe Description	M	Entire Group Description
1. Objectives are SMART (specific, measurable, attainable, result-oriented and time-bounded) and Outcomes-Based Education	3.87	SA	3.80	SA	3.80	SA
2. Contents and direction are clear and understandable	4.00	SA	4.00	SA	4.00	SA
3. Order of information is based on the core competencies of cookery	4.00	SA	3.93	SA	3.96	SA
in the training, regulations are arranged simply for complex						
4. Provides high-quality sensory experiences for the students.	3.87	SA	3.93	SA	3.90	SA
5. It provides for practising new and old skills and allows the students to proceed to the next	3.93	SA	3.93	SA	3.93	SA

module.

6. Integrates the use of multi-media to facilitate the learning process	3.93	SA	4.00	SA	3.96	SA
7. Updated and adaptable to meet the needs of the school	4.00	SA	3.87	SA	3.93	SA
8. Learner-friendly, can be used by students with less supervision or assistance.	4.00	SA	3.93	SA	3.96	SA
9. Holds the interest of the students.	3.93	SA	4.00	SA	3.93	SA
10. Develop competence in preparing and cooking hot meals, cold meals and dessert	4.00	SA	4.00	SA	4.00	SA
Over all Mean	3.96	SA	3.94	SA	3.95	SA

Table 6 shows a strong agreement between industry and academia on the validity of a competency-based instructional module, with industry having a higher level of agreement ($M_i=3.96$) than the academe ($M_a=3.94$).

Table 7

Validation of Competency-Based Instructional Module in Cookery Regarding Organization and Presentation.

Module	Industry	Academe	Entire group Mean	Description
Module 1: Cleaning and Maintaining Kitchen Premises	3.95	3.66	3.80	SA
Module 2: Preparing Stocks, Sauces and Soups	3.95	3.67	3.81	SA
Module 3: Preparing Appetisers	3.95	3.67	3.81	SA
Module 4: Preparing Salads and Dressing	3.95	3.67	3.81	SA
Module 5: Preparing Sandwiches	3.95	3.67	3.81	SA
Module 6: Preparing Meat Dishes	3.95	3.67	3.81	SA
Module 7: Preparing Vegetables Dishes	3.95	3.67	3.81	SA
Module 8: Preparing Egg Dishes	3.95	3.67	3.81	SA
Module 9: Preparing Starch Dishes,	3.95	3.67	3.81	SA
Module 10: Preparing Poultry and Game Dishes	3.95	3.67	3.81	SA
Module 11: Preparing Seafood Dishes	3.95	3.67	3.81	SA
Module 12: Preparing Desserts	3.95	3.67	3.81	SA
Module 13: Packaging Prepared Food	3.95	3.67	3.81	SA

The table shows that 13 modules received a mean of 3.81 in organisation and presentation from industry and academia, except for module 1, which needs improvement. Industry and academia agreed on objectives, content, and presentation for cooking modules, focusing on SMART and OBE-based education. The modules were adaptable, learner-friendly, and held students' interest.

Table 8
Validation of Competency-Based Instructional Module in Cookery Regarding Assessment

Assessment	M	Industry Description	M	Academe Description	M	Entire Group Description
1. Observable performance is relevant to real-world experiences that can be used to measure students' engagement	3.93	SA	3.93	SA	3.93	SA
2. Appropriate to the Learning Objectives	4.00	SA	3.93	SA	3.96	SA
3. Provides supplemental Enrichment activities to strengthen knowledge and skills	4.00	SA	3.73	SA	3.89	SA
4. Provides opportunities for interaction with peers	3.87	SA	3.93	SA	3.90	SA
5. Helps the teacher to evaluate learners' progress in attaining target competencies	3.87	SA	3.93	SA	3.90	SA
6. Allows students' self-Assessment and devised for immediate feedback	4.00	SA	3.73	SA	3.89	SA
7. Aligns with TESDA competency assessment	4.00	SA	3.93	SA	3.96	SA
8. Provides meaningful feedback to the teacher and can be a prospective guide for remediation action	4.00	SA	3.93	SA	3.96	SA
9. Monitors individual and small group activities	4.00	SA	4.00	SA	4.00	SA
10. Evaluates performance using the performance criteria checklist, which is recorded in the chart.	4.00	SA	3.93	SA	3.96	SA
Overall Mean	3.97	SA	3.90	SA	3.93	SA

Table 8 shows a 3.93 rating for the Competency Ba-ed Instructional Module, indicating substantial agreement between industry and academe on assessment items. However, the industry had a higher level of agreement ($M_i=3.97$) than the academe ($M_a=3.90$). Evaluators found observable valuable performance for student engagement, enrichment, peer interaction, teacher evaluation, self-assessment, and feedback. The industry and academe agreed on modules that were aligned with the TESDA competency assessment, provided feedback, and guided remediation actions. The industry's assessment was similar, allowing for improvement and valid competencies in four modules.

Table 9
Validation of Competency-based instructional module Regarding assessment

Module	Industry	Academe	Entire group Mean	Description
Module 1: Cleaning and Maintaining Kitchen Premises	3.97	3.87	3.92	SA
Module 2: Preparing Stocks, Sauces and Soups	3.97	3.87	3.92	SA
Module 3: Preparing Appetisers	3.97	3.87	3.92	SA
Module 4: Preparing Salads and Dressing	3.97	3.87	3.92	SA
Module 5: Preparing Sandwiches	3.97	3.87	3.92	SA
Module 6: Preparing Meat Dishes	3.97	3.87	3.92	SA

Module 7: Preparing Vegetables Dishes	3.97	3.87	3.92	SA
Module 8: Preparing Egg Dishes	3.97	3.87	3.92	SA
Module 9: Preparing Starch Dishes,	3.97	3.87	3.92	SA
Module 10: Preparing Poultry and Game Dishes	3.97	3.87	3.92	SA
Module 11: Preparing Seafood Dishes	3.97	3.87	3.92	SA
Module 12: Preparing Desserts	3.97	3.87	3.92	SA
Module 13: Packaging Prepared Food	3.97	3.87	3.92	SA

The industry and academe evaluated the modules with a mean of 3.92, which indicates alignment with TESDA competency, performance evaluation, teacher feedback, and learning objectives, as shown in Table 9.

Table 10

Validation of Competency-Based Instructional Module in Cookery Regarding Instructional Design and Support

Instructional Design and support	M	Industry Description	M	Academe Description	M	Entire Group Description
	1. Allows student involvement in all activities	3.93	SA	3.93	SA	3.93
2. Sufficient operation sheets to attain the skills required in learning outcomes	4.00	SA	3.67	SA	3.83	SA
3. Specifications and limitations are adequately described and noted.	4.00	SA	3.80	SA	3.90	SA
4. Learning resource materials are sufficient and available to the teachers.	3.87	SA	3.87	SA	3.87	SA
5. Supplemental electronic references are available.	3.87	SA	3.87	SA	3.87	SA
6. Matches the learner's capabilities with the required tasks.	4.00	SA	3.87	SA	3.93	SA
7. There is a full utilisation of resources.	4.00	SA	8.37	SA	3.93	SA
9. Adequate skills development is provided at reasonable times and opportunities.	4.00	SA	3.93	SA	3.96	SA
10. Additional information is readily available using websites provided in the reference.	4.00	SA	3.93	SA	3.96	SA
Over All Mean	3.98	SA	3.86	SA	3.92	SA

Table 10 reveals a strong consensus among evaluators on the validity of the competency-based instructional module items, with industry respondents showing a higher level of agreement ($M_i=3.98$) than the academe ($M_a=3.86$).

Industry and academia agree on instructional design, allowing student involvement and providing operation sheets. The module's comprehensive scope provides adequate skills development with reasonable time and opportunities. Calambro's (1993) and Haro's (2006) studies highlight the benefits of drafting technology in training students and enhancing their skills in industry outputs. Tailored learning is crucial in academia and industry, requiring instructors to develop competency and a proactive attitude for future opportunities.

Table 11*Validation of Competency-Based Instructional Module Regarding Instructional Design and Support*

Module	Industry	Academe	Entre Group Mean	Description
Module 1: Cleaning and Maintaining Kitchen Premises	3.98	3.87	3.94	SA
Module 2: Preparing Stocks, Sauces and Soups	3.98	3.89	3.94	SA
Module 3: Preparing Appetisers	3.98	3.89	3.94	SA
Module 4: Preparing Salads and Dressing	3.98	3.89	3.94	SA
Module 5: Preparing Sandwiches	3.98	3.89	3.94	SA
Module 6: Preparing Meat Dishes	3.98	3.89	3.94	SA
Module 7: Preparing Vegetable Dishes	3.98	3.89	3.94	SA
Module 8: Preparing Egg Dishes	3.98	3.89	3.94	SA
Module 9: Preparing Starch Dishes	3.98	3.89	3.94	SA
Module 10: Preparing Poultry and Game Dishes	3.98	3.89	3.94	SA
Module 11: Preparing Seafood Dishes	3.98	3.89	3.94	SA
Module 12: Preparing Desserts	3.98	3.89	3.94	SA
Module 13: Packaging Prepared Food	3.98	3.89	3.94	SA

The industry and academe rated all 13 modules with a mean of (M= 3.94), indicating that they provide a comprehensive top-down perspective on the material, align learners' capabilities with the required task, and effectively guide the scope of the material.

Table 12*Validation of Competency-Based Instructional Module in Cookery Regarding All Domains*

Category	Industry		Academe		Entire Group	
	M	Description	M	Description	M	Description
Content	3.96	SA	3.92	SA	3.94	SA
Activities	3.95	SA	3.89	SA	3.90	SA
Organisation and Presentation	3.96	SA	3.94	SA	3.95	SA
Assessment	3.97	SA	3.90	SA	3.93	SA
Instructional Design and Support	3.97	SA	3.86	SA	3.91	SA
Overall Mean	3.96	SA	3.90	SA	3.92	SA

The study evaluated content, learning activities, organisation and presentation, assessment, instructional design and support, and activities in various domains. The industry rated the content as the most effective, with an average mean of 3.96. The highest-rated criterion was learning content and organisation presentation, followed by assessment, instructional design and support, and activities. The industry received the highest evaluation, with an average mean of 3.96, while the academe had a mean of 3.90.

The competency-based cookery module is practical and suitable for industry teaching and learning. Faculty evaluators accept it and stimulate students' learning and experiences. The module benefits students, teachers, and entrepreneurs and has a positive perception among all respondents. The results show no significant difference in the mean rating of home economics teachers, extension agents, and IITA staff regarding the training modules, indicating its validity as evaluated by academia and industry.

Table 13*The significant differences in the validation of the competency-based instructional module in cookery by the industry and the academe*

Module	Df	Mean Difference	Sig.	Significance
Contents	28	0.984	0.333	NS
Activities	28	0.888	0.334	NS
Organisation and Presentation	28	0.602	0.552	NS
Assessment	28	1.581	0.125	NS
Instructional Design and Support	28	1.995	0.056	NS

The study found no significant differences between industry and academic validations of competency-based instructional modules in cookery activities. Both groups agreed on the validity of these modules, confirming the hypothesis that no significant difference exists in the validation process. The study also found no significant differences in the organisational and presentation of the modules, indicating that the evaluation of the modules was almost the same results showed ($t[28]=.984, p=.333$), ($t[28]=.888, p=.334$), ($t[28]=.888, p=.334$), ($t[28]=.602, p=.552$), and ($t[28]=1.995, p=.0560$) respectively.

The module's content validity was evaluated by both the industry and the academe, indicating a unanimous approval. Therefore, the hypothesis was accepted, indicating no significant difference in validating competency-based instructional modules in cookery, as both groups agreed on the content.

Table 14

Acceptability of Competency-Based Instructional Module in Cookery as Evaluated by the Students

Items	Means	Description
1. Objectives are specific and measurable	4.24	HA
2. Objectives are outcome-based	4.32	HA
3. Topics conform with the outline of the course	4.52	HA
4. Language is clear and simple	4.46	HA
5. Pictures are clear and convey the idea	4.43	HA
6. Time allotment allows flexibility	4.35	HA
7. Activities provide meaningful experiences	4.28	HA
8. Activities promote mastery of skills	4.46	HA
9. Activities caters to individual differences	4.22	HA
10. Tools	4.73	HA
11. Evaluation measures students' performance	4.60	HA
12. Allow inquiry, laboratory and project-based learning approaches	4.60	HA
13. Develop interest among student	4.36	HA
14. Suit to the student's needs	4.36	HA
15. Promote mastery of the topic presented	4.32	HA

WVSU Pototan Campus BSHRST students evaluated a competency-based cookery module, indicating high acceptance based on critical factors such as tools, inquiry-based learning, clear activities, pictures, and measurable objectives. This result aligns with Celiz's (2006) study on the positive impact of instructional material on students' learning.

The study supports Larawan's (2013) research by proving competency-based cookery modules satisfactory in physical aspects, objectives, instructions, learning, and evaluative instruments. Both evaluators deemed the modules acceptable as learning interventions for the HRST program.

Table 15

The difference in the level of acceptability of the developed Competency-Based Instructional Module in Cookery

Module	Respondents	Df	Sig. (2-tailed)	Mean Difference	Std. Error	Sig
Content	Industry	28	0.333	0.04800	0.04877	NS
	Academe	28.829	0.334	0.04800	0.04877	NS
Activities	Industry	28	0.069	0.09333	0.04944	NS
	Academe	28	0.069	0.09333	0.04944	NS
Presentation	Industry	28	0.552	0.02000	0.03324	NS
	Academe	28	0.552	0.02000	0.03324	NS
Assessment	Industry	28	0.125	0.06667	0.04216	NS
	Academe	20.459	0.129	0.06667	0.04216	NS
Design and Support	Industry	28	0.056	0.12000	0.6016	NS
	Academe	15.714	0.064	0.12000	0.06016	NS

As shown in Table 15, there is no significant difference in the evaluation of the industry and the academe regarding the acceptability of the developed competency-based instructional module ($t[28]=.984, p=.333$).

The cookery module, developed by a dressmaking company, has gained widespread acceptance in the industry and academia due to its content, accessibility, assessment, organisation, and instructional design. Its potential to enhance learners' conceptual knowledge and skills and meet global tourism sector demands is demonstrated.

The null hypothesis that there is no significant difference in the level of acceptability of the competency-based instructional module in cookery was accepted. Celiz's (2006) and Larawan's (2013) findings support this, showing that using instructional material positively affects students' learning.

The competency-based cookery module for the HRST program was highly acceptable, with respondents agreeing on its validity and acceptability. The module provides information on knowledge and skills and instructions on accessing training materials like videos and computer-based learning, making it a highly agreed-upon instructional tool.

6. CONCLUSION

The academe and industry have entirely accepted the competency-based instructional module in cookery for the Hotel and Restaurant Services Technology program. This module can facilitate teaching-learning among instructors, trainers, and students across various schools and training centres. The respondents' perception of the module remains consistent, indicating its acceptance as instructional material. Therefore, the null hypothesis is accepted, and the module should be used as instructional material in the teaching-learning process.

7. RECOMMENDATION

The Hotel and Restaurant Services Technology program should develop a competency-based module in cookery to meet industry competencies. Teachers should have a module that allows students to learn at their own pace. To improve teaching efficiency and effectiveness, cookery instructors should undergo training, seminars, and industry immersion. They should also develop a positive attitude towards teaching and its significance to the industry and students' careers. Students should acquire competencies based on industry standards applicable to local, national, and international workplaces. They should also take the TESDA national certification assessment in cookery. The school administration should allocate a budget for module production and stay updated on industry practices.

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