



VALIDATION AND EFFECTIVENESS OF INTERACTIVE LEARNING MODULE IN COOKERY 9 FOR SELF-REGULATED LEARNING

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ABSTRACT

This research was entitled “Validation and Effectiveness of Interactive Learning Module in Cookery 9 For Self-Regulated Learning”. The study aimed to develop, validate, determine the acceptability of an interactive learning module for cookery 9. Specifically, this study sought answers to the following questions. 1. What is the level of validity of the components of the module as rated by the respondents in terms of Learning Objectives, Content, Learning Procedure and Learning assessment. 2. What is the level of acceptability of the characteristics of the developed interactive module for cookery as evaluated by the experts based on its; Aesthetic value, Clarity, Organization, Relevance Suitability. 3. What is the level of student’s performance in cookery 9 in terms of practical test as of preparing appetizers, preparing salad and salad dressing, preparing sandwiches and preparing desserts. 4. Is there a significant relationship on the validity of the developed interactive module for cookery 9 and student’s performance?

The descriptive and experimental research design was used. The respondents of the study included were the twelve TLE teachers who evaluated the developed interactive learning module. Three hundred nineteen Grade 9 students of Lucban Academy who used the module for the school year 2020-2021.

The findings revealed that the parts of the interactive learning module as perceived by the TLE teachers was interpreted as very high in terms of its components such as; learning objectives, learning contents, learning procedures, and learning assessments. While its Characteristics was interpreted by the respondents as highly acceptable in its aesthetic value, clarity, organization, relevance and suitability.

The respondents’ performances, shows that the interactive learning module used for the four quarters was verbally interpreted as very satisfactory. The hypothesis stated there is no significant relationship between the validity of the learning module and student’s performance for the four quarters was rejected.

KEYWORDS; *Interactive learning module, Learning objectives, Learning contents, Learning Procedures, Learning assessment, Aesthetic value, Clarity, Organization, Relevance, Suitability, Practical test*

I. INTRODUCTION

Today were facing the most challenging times, and everyone is affected not only Filipinos even other nationalities because the challenges brought by the pandemic was borderless. In times of lockdown measures, many of us experienced to struggle just to survive for everyday living, our economic was freeze for a while and as a result people lost their sources of income, and Education is no exception for the challenges, many of private schools closed their doors, some people wanted freeze the education.

Education is very important to every individual; it is our ultimate way to conquer all the personal and social problem that we’re facing right now. Educational institution finds ways to support distance learning, to adapt in the new setting of education, teachers was trained to maximized the use of technology in education including the online platform for learning but not all students are capable for online platforms because these requires gadgets and internet



connection that's why teacher's really need to be flexible in order to deliver learning to all the learners and ensuring that no one will left behind. Printed learning materials needs to be more interactive to support the needs of learners with varies learning abilities. The teachers actual teaching strategies in classroom setting can be put into printed materials.

K-12 learners have unique characteristics that also need to be considered when designing online, and printed learning materials. learner's today is well experienced in using the Internet to acquire knowledge, they also learn effectively when they are actively engaged in the lesson. This skill enables the learner to transition into different leaning situations, they are also less likely to be patient with instructional settings where they are not motivated or engaged (Simonson et al., 2012). Thus, as educators, we must avoid treating our platforms, printed materials like an information dissemination center, the content must be engaging.

As a response to the addressing challenges of the pandemic the Department of education has released the most essential Competencies (MELCS) to be used nationwide. This MELCS can be used under certain circumstances as a mechanism to ensure the continuity of education. It will also enable the department to focus instruction to the most essential and indispensable competencies.

Cookery 9 is one of the courses in home economics in which varied and relevant activities and opportunities are provided to demonstrate student's understanding of concepts and core competencies as prescribed in TESDA Training Regulation in Cookery and provides quality foods and services to target clients. This will also be a venue for the learners to assess their self to become a part of the workforce. As indicated in the MELC's the following topics must be covered under certain circumstances; cleaning, sanitizing kitchen equipment and premises, prepare appetizers, prepare salad and salad dressing, prepare sandwiches and prepare desserts.

In distance learning, teachers will not be physically present to monitor and guide students as they go on with the lesson. The Learning material must be engaging wherein when the students read the learning material, they will feel like they're talking to their teacher and to their classmates just like in a face-to-face classroom setting. The content of learning module must provide support for self-regulated learning, it should be adaptable for self-paced instructions, individualized instructions and for student-controlled learning.

II. STATEMENT OF THE PROBLEM

This study aimed to develop, validate, determine the acceptability of an interactive learning module for cookery 9. Specifically, this study sought answers to the following questions.

1. What is the level of validity of the components of the module as rated by the respondents in terms of:
 - 1.1. learning objectives;
 - 2.2 content;
 - 2.3 learning procedure; and
 - 2.4 learning assessment?
2. What is the level of acceptability of the characteristics of the developed interactive module for cookery as evaluated by the experts based on:
 - 2.1. aesthetic value ;
 - 2.2. clarity;
 - 2.3. organization;
 - 2.4. relevance; and
 - 2.5. suitability?
3. What is the level of student's performance in cookery 9 in terms of practical test as to;
 - 3.1. preparing appetizers;
 - 3.1. preparing salads;
 - 3.1. preparing sandwiches; and
 - 3.1. preparing desserts?
4. Is there a significant relationship on the validity of the developed interactive module for cookery 9 and student's performance?



III. METHODOLOGY

The descriptive and experimental research design was used in this study. Since this study aimed to evaluate the perceptions of the experts and focuses only to the performances of those students taking cookery 9, a purposive sampling technique was used.

The respondents of this study were the 319 grade 9 TLE students were 137 are males and 187 females from Lucban Academy for academic year 2020-2021. Likewise, twelve (12) TLE Cookery 9 teachers were considered as another group of respondents who determined the acceptability of the Interactive learning module.

The researcher secured first the necessary permits to conduct the study. That includes the validations of the instruments, then the K-12 MELC's of Cookery for grade 9 TLE students, books and other resources was used as a guide in constructing the module. An approval was sought from different experts in the field of Technology and Livelihood Education to validate the developed Interactive learning module of the researcher. Then after the approval the developed module was used by the respondents during the four quarters and they were identified according to their grades. The data was gathered and tabulated by the researcher.

The main instruments used in this study were 1. The developed Interactive learning module in cookery 9 with the following lessons based on grade 9 K to 12 MELC's; preparing appetizers, preparing salad and dressing, preparing sandwiches, preparing dessert, and packaging prepared food. 2. A modified questionnaire used in determining the acceptability level of the learning module.

The mean and standard deviation was used to determine the ratings of evaluators about the developed interactive learning module in cookery 9. Bar graph was used to show the performance of the students' respondents in the developed module. T-Test was also used to determine the significant relationship between the validity of the module and student's performance.

IV. RESULT AND DISCUSSION

This chapter discusses the statistical treatment data presented in tables which are supported by analysis and interpretation. Tables are chronologically arranged depending to order of specific objectives of the study.

The Developed Interactive Learning Module for Cookery 9

It was developed to cater the needs of the grade 9 students in distance learning during the pandemic time. It provided enjoyable activities and easy approach that captures their focus in the learning competencies that were needed to achieve in cookery 9.

This module is an outcome-based approach whereas the students are expected to learn and perform specific skills. It is designed to develop the four major learning competencies in cookery 9 such as; Preparing Appetizers, Preparing Salad and Salad Dressing, Preparing Sandwiches and Preparing Desserts. The learning module has four parts; Learning Objectives, Content, Learning Procedure and Learning Assessment. These parts of the module were carefully designed based on the prescribed standards written on the MELC's and how the teacher delivered the lesson in the class. Each part of the module had undergone a careful evaluation from the experts and the findings was discussed on the next page.

Table 1. Level of validity of the parts of the module as rated by the respondents in terms of learning objectives

Indicative Statement	Mean	SD	Remark
<i>The learning objectives stated in the Instructional Materials...</i>			
1. clearly specify the intent of the course and what it is expected to achieve	4.67	0.65	Strongly Agree
2. are written at the appropriate developmental level for student success	4.75	0.45	Strongly Agree
3. are based on the learning abilities of the students	4.58	0.51	Strongly Agree
4. allows enough time to successfully implement the steps needed to achieve the necessary skills	4.50	0.67	Strongly Agree
5. clearly state when students should be able to demonstrate the skill	4.33	0.78	Strongly Agree
<i>Overall Mean</i>	<i>4.57</i>	<i>Very High</i>	

It could be gleaned from the table that respondents strongly agree that the learning objectives stated in the instructional material clearly specify the intent of the course and what it is expected to achieve (M=4.67: SD=0.65),



are written at the appropriate developmental level for student access (M=4.75: SD=0.45), are based on the learning abilities of the students (M=4.58: SD=0.51), allows enough time to successfully implement the steps needed to achieve the necessary skills (M=4.50: SD=0.67), and clearly state when students should be able to demonstrate the skill (M=4.33: SD=0.78).

The overall mean of 4.57 indicates that the objectives intended for every competency in the module is validated and interpreted as very high. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the objectives of the module.

According to Sobel (2020) Learning Objectives are brief, clear statements about what students will be able to do when they complete instruction, this means that the learning objectives must provide a clear discussion of the course intent with regards to the expected outcome. He also added that the learning objective is a specific, measurable, short-term, observable statement it indicates desirable knowledge, skills, or attitudes expected of students as a result of instructional activities.

The result of the findings also realizes the statement of Batchwood (2019) A learning objective should describe what students should know or be able to do at the end of the course that they couldn't do before. The objectives must be clear to students. They all must know what they are learning and why they are doing it. They also need to see the point of the objectives in the bigger picture; that is, how they relate to the last lesson's learning, the course they are following and the big overall goal. The objectives and outcomes must be differentiated for the individual student. All the learners should be able to see where they are and what they need to do to get to the next level. This should link into subject standards and progression where possible. It is crucial to have high expectations of what can be achieved and engage the students with that belief. 3. Success criteria for achieving the outcomes need to be negotiated with the students for optimum engagement to enable them to be clear about what it will look like and feel like and sound like when they have made that progress.

Table 2. Level of validity of the parts of the module as rated by the respondents in terms of learning contents

Indicative Statement	Mean	SD	Remark
<i>The content stated in the Instructional Material...</i>			
1. are based on the prescribed/expected learning competency.	4.75	0.45	Strongly Agree
2. are arranged logically.	4.50	0.78	Strongly Agree
3. are appropriate and relevant	4.67	0.65	Strongly Agree
4. are presented with specific instruction	4.58	0.67	Strongly Agree
5. are congruent to the objectives of the lesson	4.67	0.49	Strongly Agree
<i>Overall Mean</i>	<i>4.63</i>	<i>Very High</i>	

Table 2 shows that respondents strongly agree that the content stated in the instructional material are based on the prescribed/expected learning competency (M=4.75: SD=0.45), are arranged logically (M=4.50: SD=0.78), are appropriate and relevant (M=4.58: SD=0.67), are presented with specific instruction (M=4.58: SD=0.67), and are congruent to the objectives of the lesson (M=4.67: SD=0.49).

The overall mean of 4.63 indicates that the content intended for every competency in the module is validated and interpreted as very high. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the content of the module.

Val (2017) The content component of teaching learning situation must be in line with the learning experiences and there must be clear cut objective to be achieved by the end of each respective lesson. The findings of the study also realizes that the Content of an instructional material must have a learning designs that are created using the professional language of education that are specific in framing objectives, developing and sequencing activities and devising assessment. Kalantziz and Cope (2020).



Table 3. Level of validity of the parts of the module as rated by the respondents in terms of learning procedures

Indicative Statement	Mean	SD	Remark
<i>The instructional strategies in the module...</i>			
1. provides the students with clear learning targets	4.58	0.67	Strongly Agree
2. encourages the students to bring their own experience and knowledge throughout the lessons	4.42	0.67	Strongly Agree
3. provides real-life task applicable to the student’s actual work	4.42	0.67	Strongly Agree
4. help students develop the positive attitude towards the lesson	4.58	0.51	Strongly Agree
5. offer learners the opportunity to practice concept and develop understanding	4.42	0.79	Strongly Agree
6. provides detailed and appropriate feedback for the practice opportunities	4.50	0.52	Strongly Agree
7. provides an opportunity to learners to check their mastery of the lesson before he or she proceeds to the next step	4.58	0.67	Strongly Agree
<i>Overall Mean</i>	<i>4.50</i>	<i>Very High</i>	

It could be gleaned from the table that respondents strongly agree that the learning procedures in the instructional material provides the students with clear learning targets (M=4.58: SD=0.67), encourages the students to bring their own experience and knowledge throughout the lessons (M=4.42: SD=0.67), provides real-life task applicable to the student’s actual work (M=4.42: SD=0.79), help students develop the positive attitude towards the lesson (M=4.58: SD=0.51), offer learners the opportunity to practice concept and develop understanding (M=4.42: SD=0.52), provides detailed and appropriate feedback for the practice opportunities (M=4.50: SD=0.52), and provides an opportunity to learners to check their mastery of the lesson before he or she proceeds to the next step (M=4.58: SD=0.67).

The overall mean of 4.50 indicates that the learning procedures intended for every competency in the module is validated and interpreted as very high. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the instructional strategies in the module.

According to Dr. Amin (2016) Learning process must encourage active learning students do not learn much from memorizing facts and reproducing set answers. They drive greater benefits by being active in their learning. Jackson (2015). In designing instructional material, it is important to address student’s characteristics. Include factors such as age, gender, race/ethnicity, special needs, achievement/developmental levels, culture, language, interests, learning styles/modalities or students’ skill levels. In designing learning instructions, the designer have to make sure she/he address student’s skills and prior learning that may influence the development of the learning goals, instruction and assessment. Instructional implications. Address how contextual characteristics of the community, classroom and students have implications for instructional planning and assessment. Include specific instructional implications for at least two characteristics and any other factors that will influence the implementation of the unit.

Table 4. Level of validity of the parts of the module as rated by the respondents in terms of learning assessment

Indicative Statement	Mean	SD	Remark
1. The number of questions is adequate from the topic	4.33	0.65	Strongly Agree
2. The assessment develops higher order thinking skills	4.33	0.89	Strongly Agree
3. Questions are easy to understand	4.75	0.45	Strongly Agree
4. Key answer for the assessment are clear and easy to understand	4.33	0.65	Strongly Agree
5. The evaluation matched the content of the topic	4.50	0.52	Strongly Agree
6. Provides a real-world scenario	4.33	0.78	Strongly Agree
<i>Overall Mean</i>	<i>4.43</i>	<i>Very High</i>	

It could be gleaned from the table that respondents strongly agree that the learning assessment has number of questions is adequate from the topic (M=4.33: SD=0.65), develops higher order thinking skills (M=4.33:



SD=0.89), Questions are easy to understand (M=4.75: SD=0.45), Key answer for the assessment are clear and easy to understand (M=4.33: SD=0.65), The evaluation matched the content of the topic (M=4.50: SD=0.52), and Provides a real world scenario (M=4.33: SD=0.78).

The overall mean of 4.43 indicates that the learning assessment intended for every competency in the module is validated and interpreted as very high. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the learning assessment of the module.

According to Fisher (2017) Student assessment is important because it provides useful feedback to both instructors and students about extent to which students are successfully meeting course learning objectives. That is why it is important that the evaluation must match the content of the topic. Wiley (2017) Students become more involved in the learning process and from this gain confidence in what they are expected to learn and to what standard. Learning assessment must enables a student with the help of their teacher, to find out what level they are at, Students understand what successful work looks like for each task they are doing. Students become more independent in their learning, taking part in peer assessment and self-assessment, this statement realizes that the learning assessment must be easy for the learners to understand and must develop a higher order thinking skill.

Banta et al; (2016), said that effective assessment planning must be connected to valued Goals and processes and building a culture based on evidence. According to Manitoba (2019), Effective Assessment should be authentic and meaningful, tasks worth mastering for their own sake rather than tasks designed simply to demonstrate student proficiency for teachers and others. Through assessment, teachers discover whether students can use knowledge, processes, and resources effectively to achieve worthwhile purposes. Therefore, teachers design tasks that replicate the context in which knowledge will be applied in the world beyond the classroom. Effective assessment assists learning. It helps focus effort on implementing strategies to facilitate learning both inside and outside the classroom.

Table 5. Level of Acceptability of the Developed Module Based on its Characteristics as to Aesthetic Value

Characteristics as to Aesthetic Value	Mean	SD	Remark
1. colorful	4.42	0.69	Strongly Agree
2. attractive	4.50	0.67	Strongly Agree
3. has appropriate designs	4.42	0.69	Strongly Agree
4. has proper spacing	4.33	0.65	Strongly Agree
5. suitable to the learners	4.67	0.49	Strongly Agree
<i>Overall Mean</i>	<i>4.47</i>	<i>Highly Acceptable</i>	

It could be gleaned from the table that respondents strongly agree that the Aesthetic value of the module are colorful (M=4.42: SD=0.69), attractive (M=4.50: SD=0.67), has appropriate designs (M=4.42: SD=0.69), has proper spacing (M=4.33: SD=0.65), and suitable to the learners (M=4.67: SD=0.49).

The overall mean of 4.47 indicates that the learning assessment intended for every competency in the module is validated and interpreted as highly Acceptable. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the Aesthetic value of the module.

According to Burns (2019), typeface and fonts have a subtle but powerful impact on how learners react to, view, interact with, and learn the lesson content. She also added that typeface gives personality to a body of text. It provokes emotional responses that affect how we perceive content. The perceive content affect's the learner's direct engagement to the learning material.

The findings of the study also supported by the statement of Ilene (2018), A well-spaced typeface particularly a text design where legibility is of the essence should have even color and texture. Sadko (2017), Fonts play an essential role in design they set the mood, evoke emotions, and help form an opinion before you get to read the text. They are secret agents of visual communication working with the subconscious of the viewer. He also added that usually, people notice each corner of the typeface and focus the sharper the corners in an inscription that leads to easier it catches the attention of the viewer. Sadiq (2013) Pictures make it possible to absorb large amounts of data quickly. Using photographs for explaining the lesson topic especially the complex lesson is one of the teaching aids of modern education system all over the world.



Table 6. Level of Acceptability of the Developed Module Based on its Characteristics as to Clarity

Characteristics as to Clarity	Mean	SD	Remark
1. simple	4.42	0.67	Strongly Agree
2. understandable	4.58	0.67	Strongly Agree
3. clear	4.50	0.80	Strongly Agree
4. has proper directions	4.67	0.65	Strongly Agree
5. based on users' vocabulary	4.50	0.80	Strongly Agree
<i>Overall Mean</i>	<i>4.53</i>	<i>Highly Acceptable</i>	

It could be gleaned from the table that respondents strongly agree that the Clarity of the learning module contents are simple (M=4.42: SD=0.67), understandable (M=4.58: SD=0.67), clear (M=4.50: SD=0.80), has proper directions (M=4.67: SD=0.65), and based on users' vocabulary (M=4.50: SD=0.80).

The overall mean of 4.53 indicates that the clarity of content intended for every competency in the module is validated and interpreted as highly acceptable. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the clarity of the module.

The findings is hereby supported by the statement of Amy Burge (2019) According to her there are three key things to think about when designing successful modules and courses, first, Be clear about the module purposes and aspirations for student participants and communicate these to students. This means that the instruction in the learning module must be simple and clear for easy understanding. Second make sure your module is constructively aligned this means that the learners must be able to actively constructs their own understanding and all teaching and assessment is aligned with the intended outcomes, A successful module is one in where the stated learning outcomes or objectives align with teaching activity and assessment. This means that a learning module must have a proper direction and lastly the designer must consider the course in context of the department, institution, and sector. Bernat (2019) stated that learning is will occur best when instructions fit within an individual's own knowledge structures and when it is meaningful and purposeful. This means that the learning content must be based on the learner's vocabulary.

Table 7. Level of Acceptability of the Developed Module Based on its Characteristics as to Organization

Characteristics as to Organization	Mean	SD	Remark
1. arranged according to parts	4.67	0.49	Strongly Agree
2. sequenced based on the competencies of the curriculum	4.75	0.62	Strongly Agree
3. arranged from easy to difficult	4.58	0.51	Strongly Agree
4. organized according to the level of the learners	4.58	0.51	Strongly Agree
5. the parts are congruent to each other	4.75	0.45	Strongly Agree
<i>Overall Mean</i>	<i>4.67</i>	<i>Highly Acceptable</i>	

It could be gleaned from the table that respondents strongly agree that the organization arranged according to parts (M=4.67: SD=0.49), sequenced based on the competencies of the curriculum (M=4.75: SD=0.62), arranged from easy to difficult (M=4.58: SD=0.51), . organized according to the level of the learners (M=4.58: SD=0.51), and the parts are congruent to each other (M=4.75: SD=0.45).

The overall mean of 4.67 indicates that the organization intended for every competency in the module is validated and interpreted as highly acceptable. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the organization of the module.

Maeli and Cooper (2018) stated that a learning module will become more effective by having these certain characteristics. These include: Logical sequence the steps reflect occupational steps, prerequisite knowledge and abilities, and difficulty. Self-contained learners can pick up or access the module and begin work without instructor intervention, and can proceed through the module based on clear instructions about what to do in all likely situations, including what to do at the end of the module.

Morrison (2019) Said that the learning activities in the instructional materials must be carefully designed to address specific objectives, Activities and resources are carefully selected in terms of the required instructional objectives, it is important to check whether the activities match the prescribed standards and properly sequenced. The learner's mastery of each step is checked before he or she proceeds to the next step. Therefore, it is necessary to require the learner to demonstrate mastery of the content, and to help them the activities should be arrange from easy



to difficult to avoid frustrations and create a positive attitude towards learning the subject. The learner then must receive immediate confirmation of mastery of the objectives. With each success, the learner confidently advances to the next step.

Table 8. Level of Acceptability of the Developed Module Based on its Characteristics as to Relevance

Characteristics as to Relevance	Mean	SD	Remark
1. important to the learners and teachers	4.67	0.49	Strongly Agree
2. suited to all schools	4.42	0.90	Strongly Agree
3. can contribute to the teachers	4.67	0.65	Strongly Agree
4. can contribute to the learners	4.75	0.45	Strongly Agree
5. has the ability to make students discover	4.67	0.49	Strongly Agree
<i>Overall Mean</i>	<i>4.64</i>	<i>Highly Acceptable</i>	

It could be gleaned from the table that respondents strongly agree that the relevance is important to the learners and teachers (M=4.67: SD=0.49), suited to all schools (M=4.42: SD=0.90), can contribute to the teachers (M=4.67: SD=0.65), can contribute to the learners (M=4.75: SD=0.45), and has the ability to make students discover (M=4.67: SD=0.65).

The overall mean of 4.64 indicates that the relevance intended for every competency in the module is validated and interpreted as highly acceptable. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the relevance of the module. Maeli and Cooper (2018) Once the paper-based modules are developed, used, and improved, they can become the blueprint for a digital equivalent such as an online course. Self-paced learning modules are useful for more than one purpose. For example, they can facilitate learning for individualized or self-paced instruction. They can also supplement traditional instruction in order to provide more thorough and/or additional training. Jackson (2015) In designing learning instructions, the designer have to make sure she/he address student’s skills and prior learning that may influence the development of the learning goals, instruction and assessment. Instructional implications. Address how contextual characteristics of the community, classroom and students have implications for instructional planning and assessment. Include specific instructional implications for at least two characteristics and any other factors that will influence the implementation of the unit.

Table 9. Level of Acceptability of the Developed Module Based on its Characteristics as to Suitability

Characteristics as to Suitability	Mean	SD	Remark
1. suitable to the users	4.42	0.69	Strongly Agree
2. based on the k-12 curriculum	4.67	0.49	Strongly Agree
3. correct contents	4.58	0.51	Strongly Agree
4. properly included topics	4.58	0.67	Strongly Agree
<i>Overall Mean</i>	<i>4.56</i>	<i>Highly Acceptable</i>	

The table shows that respondents strongly agree that the module is suitable to the users (M=4.42: SD=0.69), based on the k-12 curriculum (M=4.67: SD=0.49), correct contents (M=4.58: SD=0.51), and properly included topics (M=4.58: SD=0.67).

The overall mean of 4.56 indicates that the suitability intended for every competency in the module is validated and interpreted as highly acceptable. Further, small standard deviation values in all the statements shows that respondents have almost the same perception or insights with regards to the suitability of the module.

According to Jackson (2015). In designing instructional material, it is important to address student’s characteristics. Include factors such as age, gender, race/ethnicity, special needs, achievement/developmental levels, culture, language, interests, learning styles/modalities or students’ skill levels. It is also important to based the instruction according to the prescribed standards. Bengtsson et al; (2012) Individualized Instruction is an important role given to educational technologies in the teaching process. The aim is to improve productivity and efficiency through the individualization of learning. The most widely accepted concept of individualization is the arrangement of learning process in sequences which the individual student can follow at his own rate of progress. This means that the content of the instruction must be suited to the needs and ability of the target users.



Table 10. Level of Students’ Performance in the 1st Quarter Practical Test in terms of Preparing Appetizers

Competency	Excellent (5)		Very Satisfactory (4)		Satisfactory (3)		Needs Improvement (2)		No Attempt (1)		Remark
	f	%	f	%	f	%	f	%	f	%	
1. Use of tools and equipment	228	71.5	59	18.5	24	7.52	2	0.63	6	1.89	4.57 E
2. Application of step-by-step procedures	179	56.1	108	33.9	25	7.83	1	1.89	6	1.89	4.42 E
3. Application of knowledge and attitudes in preparing appetizer	115	36.1	175	54.9	20	6.3	3	0.94	6	1.89	4.22 VS
4. Safety Work Habits	114	35.7	123	38.6	73	22.9	3	0.94	6	1.89	4.05 VS
5. Product Presentation	190	59.6	96	30.1	25	7.8	2	0.63	6	1.89	4.45 E
Overall Mean Performance = 4.34 Very High											

Legend:

Range	Remark	Interpretation
4.21 – 5.00	Excellent	Very High
3.40-4.19	Very Satisfactory	High
2.60-3.39	Satisfactory	Moderately High
1.80-2.59	Needs Improvement	Low
1.00-1.79	No Attempt	Very Low

Among the competencies learned in the first quarter with regards to preparing appetizers, it shows that students were excellent in terms of use of tools and equipment (f=228:71.5%:M=4.57), applying step by step procedures (f=179: 56.1%:M=4.42), and product presentation (f=190: 59.6%:M=4.45). On the other hand, a very satisfactory remark was achieved in line with application of knowledge and attitudes in preparing appetizer (f=115: 36.1%:M=4.22), and safety work habits (f=114: 35.7%:M=4.45). Further data shows that students overall mean performance (M=4.34) shows an impressive remark of excellent. Likewise, the level of student’s performance for the first quarter was verbally interpreted as very high.

Table 11. Level of Students’ Performance in the 2nd Quarter in terms of Preparing Salad and Salad Dressings

Competency	Excellent (5)		Very Satisfactory (4)		Satisfactory (3)		Needs Improvement (2)		No Attempt (1)		Remark
	f	%	f	%	f	%	f	%	f	%	
1. Use of tools and equipment	202	63.3	93	29.2	10	3.1	0	0.0	14	4.4	4.47 E
2. Application of step by step procedures	5	1.6	292	91.5	6	1.9	2	0.62	14	4.4	3.85 VS
3. . Application of knowledge and attitudes in preparing appetizer	28	8.8	268	84.0	8	2.5	1	0.31	14	4.4	3.92 VS



4. Safety Work Habits	114	35.7	140	43.9	49	15.4	2	0.62	14	4.4	4.06 VS
5. Product Presentation	81	25.4	180	56.4	43	13.5	1	0.31	14	4.4	3.98 VS
Overall Mean Performance = 4.06 High											

Legend:

Range	Remark	Interpretation
4.21 – 5.00	Excellent	Very High
3.40-4.19	Very Satisfactory	High
2.60-3.39	Satisfactory	Moderately High
1.80-2.59	Needs Improvement	Low
1.00-1.79	No Attempt	Very Low

This table shows the respondent's performances in the second quarter were (f=202: 63.3%:M=4.47) of the students was rated as Excellent in the use of tools, (f=292: 91.5 %:M=3.85) was rated as very satisfactory with regards to the application of step by step procedures, (f=268: 84%:M=3.92) was rated as very satisfactory with regards to application of knowledge and attitudes, (f=140: 43.9%:M=4.06) was rated as very satisfactory with regards to safety work habits and (f=180: 56.4%:M=3.98) of the students was rated as very satisfactory with regards to the product presentation. The overall mean performance of the respondents is 4.06 this shows an impressive remark of very satisfactory, likewise the level of students' performance for the second quarter was high.

Table 12. Level of Students' Performance in the 3rd Quarter Practical Test in terms of Preparing Sandwiches

Competency	Excellent (5)		Very Satisfactory (4)		Satisfactory (3)		Needs Improvement (2)		No Attempt (1)		Remark
	f	%	f	%	f	%	f	%	f	%	
1. Use of tools and equipment	195	61.1	92	28.8	20	6.3	2	0.62	10	3.1	4.44 E
2. Application of step by step procedures	213	66.8	72	22.6	21	6.6	3	0.94	10	3.1	4.49 E
3. Application of knowledge and attitudes in preparing appetizer	27	8.5	249	78.1	30	9.4	3	0.94	10	3.1	3.88 VS
4. Safety Work Habits	92	28.8	139	43.6	76	23.8	2	0.62	10	3.1	3.94 VS
5. Product Presentation	130	40.8	147	46.1	30	9.4	2	0.62	10	3.1	4.21 VS
	126	39.5	99	31.0	42	13.2	19	6.0	33	10.3	E
Overall Mean Performance = 4.19 High											

Legend:

Range	Remark	Interpretation
4.21 – 5.00	Excellent	Very High
3.40-4.19	Very Satisfactory	High
2.60-3.39	Satisfactory	Moderately High
1.80-2.59	Needs Improvement	Low
1.00-1.79	No Attempt	Very Low



This table shows respondent’s performance for the third quarter were (f=195: 61.1%:M=4.44) of the students are excellent in using of tools and equipment, (f=213: 66.8%:M=4.49) are excellent in application of step-by-step procedures, (f=249:78.1%:M=3.88) are very satisfactory in application of knowledge and attitudes, (f=139: 43.6%) are very satisfactory in safety work habits and (f=147: 46.1%:M=4.21) are very satisfactory in product presentation. The findings show an impressive remark of very satisfactory with 4.19 as the overall mean performance of the students. It realizes that the level of student’s performance for the third quarter was high.

Table 13. Level of Students’ Performance in the 4th Quarter Practical Test in terms Preparing Desserts

Competency	Excellent (5)		Very Satisfactory (4)		Satisfactory (3)		Needs Improvement (2)		No Attempt (1)		Remark
	F	%	f	%	f	%	f	%	f	%	
1. Use of tools and equipment	115	36.1	163	51.1	35	11.0	2	0.60	4	0.13	4.20 VS
2. Application step by step of procedures	107	33.5	185	58.0	20	6.30	3	0.94	4	0.13	4.22 VS
3. . Application of knowledge and attitudes in preparing appetizer	98	30.7	188	58.9	28	8.80	1	0.31	4	0.13	4.18 VS
4. Safety Work Habits	110	34.5	150	47.0	50	15.7	2	0.60	7	2.20	4.11 VS
5. Product Presentation	127	39.8	143	44.8	43	13.5	2	0.60	4	0.13	4.21 VS
Overall Mean Performance = 4.18 High											

Legend:

<i>Range</i>	<i>Remark</i>	<i>Interpretation</i>
4.21 – 5.00	Excellent	Very High
3.40-4.19	Very Satisfactory	High
2.60-3.39	Satisfactory	Moderately High
1.80-2.59	Needs Improvement	Low
1.00-1.79	No Attempt	Very Low

This table shows that most of the respondent’s performance for the fourth quarter was rated as very satisfactory in the five competencies such as “use of tools and equipment, application of step by step procedures, application of knowledge and attitudes, safety work habit and product presentation with the frequency and percentage distribution of (f=163: 51.1%:M=4.20), (f=185: 58%:M=4.22), (f=188: 58.9%:M=4.18), (f=150: 47%:M=4.11) and (f=143: 43%:M=4.21) accordingly. Over all 4.18 is the mean performance of the students for the fourth quarter, this shows an impressive remark of very satisfactory likewise the level of students’ performance for the fourth quarter was verbally interpreted as high.

Table 14. Ranked Mean of Students Performance in Different Competencies

Quarter	Competency	Overall Mean	Rank	Interpretation
First	Preparing Appetizers	4.34	1	VS
Second	Preparing Salad and Salad Dressings	4.06	4	VS
Third	Preparing Sandwiches	4.19	2	VS
Fourth	Preparing Desserts	4.18	3	VS
Average Performance on Four Quarters = 4.19 Very Satisfactory				



Table 14 shows the overall mean performance of students in the four quarters using the instructional module was all interpreted as very satisfactory. The first quarter module with regards to “preparing appetizer” ranks first with (M=4.34), followed by the fourth quarter module which ranks second about “preparing desserts” (M=4.18). Third and second quarter modules, however, ranks third and fourth with (M=4.19) and (M=4.06), respectively. The average mean performance of the students for the four quarters is 4.19 and verbally interpreted as very satisfactory.

Table 15. Relationship between Validated Interactive Module for Cookery 9 and Students’ Performance

Validity Indicator	Competency							
	Preparing Appetizer		Preparing Salad and Salad Dressing		Preparing Sandwiches		Preparing Desserts	
	r	p	r	p	r	p	r	p
Learning Objectives	0.418	0.000	0.338	0.000	0.564	0.000	0.388	0.000
Learning Content	0.474	0.000	0.346	0.000	0.393	0.000	0.376	0.000
Learning Procedures	0.423	0.000	0.396	0.000	0.588	0.000	0.444	0.000
Learning Assessment	0.411	0.000	0.388	0.000	0.555	0.000	0.311	0.001
Features (aesthetic, clarity, organization, relevance, suitability)	0.477	0.000	3.62	0.000	0.510	0.000	3.22	0.000

Legend:

statistically significant

±0.80- ±1.00 Very strong

±0.60- ±0.79 Strong

±0.40- ±0.59 Moderate

±0.20- ±0.39 Weak

±0.00- ±0.19 Very weak

Note: $P < 0.05$ is

This table shows the correlation statistics representing the association between the validated interactive module and student’s performance for the four quarters. It can be gleaned that the computed $p < 0.05$ indicating a significant relationship between the validity of the learning objectives to the performance of the student and was interpreted as moderate based on its r-value of 0.418 for preparing appetizer and 0.564 for preparing sandwiches. However there is weak correlation for preparing salad and salad dressing 0.338 and for preparing desserts 0.338 .

The association between the learning content and student’s performance for the four quarters was significant at 0.00 where $p < 0.05$, moreover there is $r = 0.474$ for preparing dessert, 0.564 for preparing sandwiches indicating a moderate correlation. Weak correlation was indicated by the r value of 0.346 for preparing salad and salad dressings and 0.388 for preparing desserts.

The relationship between the validity of the learning procedures and student’s performance for the four quarters has the p value of 0.000 indicating a significant relationship. The value of $r = 0.423$ for preparing appetizer, $r = 0.588$ for preparing sandwiches and $r = 0.444$ for preparing desserts indicates a moderate correlation to the learning procedures, while the $r = 0.396$ for preparing salad and salad dressing shows a weak correlation.

The correlation between validity of the learning assessments and student’s performance found weak with the $r = 0.411$ for preparing appetizer, $r = 0.388$ for preparing salad and salad dressing and $r = 0.311$ highlighting a significant relationship with the p value equal to 0.001. preparing sandwiches indicates a moderate association to the validity of learning assessment with the r value of 0.555. The validity of the features of the learning module was found to have a significant relationship to the performances of the students for the four quarters with the p value of 0.000 which is less than 0.05. the value of r for preparing salad was 0.477, preparing sandwiches was 0.510 which indicates a moderate correlation, preparing salad and salad dressing was 3.62 and preparing desserts was 3.22 indicated a weak correlation to the validity of the learning modules features.

The findings of the study show that the p values are lesser than the 5% level of significance. Hence the null hypothesis stating that there is no significant relationship on the validity of the developed interactive module for cookery 9 and student’s performance was totally rejected. Thus there is a significant relationship between the validity of the developed interactive module for cookery 9 and student’s performance. The result agrees with the



idea of Cabardo (2015), that in order for the learner to grasp and process the information it is important to examine the teaching strategies in the learning material like the learning module so that they can have a useful experience in creating a positive performance at the end. Moreover, Shuja et al; (2019). Argued it is essentially true that the developed learning materials like the learning module has a significant positive effect on the performance of the students to achieve best learning outcomes and improve their performance.

The findings of this study realize the theory of Jerome Bruner (1966) Discovery Learning proposed that it is a method of inquiry- based instruction; discovery learning believes that it is best for learners to discover facts and relationship for themselves. Every student can discover new ideas even in their own ways by just using the interactive module. A student who truly exert effort and is so motivated to successfully answer the activities in the module given to him can discover some techniques in accomplishing specific skills in a particular subject matter. It will make him perform well in his studies especially in TLE.

The result also realizes the Cognitivism a learning theory developed by Jean Piaget (1936) stating that a child develops cognitive pathways in understanding and physical response to experiences. In this theory, students learn most effectively through reading text and lecture instruction. A student who has a learning material like the interactive learning module are given a chance to communicate clearly and effectively to make learning as easy as possible for a specific subject or skills like in preparing appetizers, sandwiches, salads and desserts.

V. CONCLUSION

1. A significant relationship exists between the validity of the developed interactive module for cookery 9 and student's performance for the four quarters.

Recommendations

Based on the findings, the researcher recommended the following:

1. The interactive learning module can be used to help the students to be independent learners in achieving the prescribed standards of cookery 9 during pandemic times.
2. The interactive learning module can be paired with a monitoring booklet to track the students' performances.
3. Studies with the same nature may be made with other scope of learning competencies in TLE.
4. Teachers and educational developers may design and offer an interactive learning module to enhance student's success across their junior high school experience.
5. In order to regularly assess and evaluate the effectiveness of the different learning materials used by students, school heads may require those teachers handling TLE subjects to submit results of school learning material evaluation as well as the grades of student per grading period.
- 6.

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