

Supplementary Learning Materials for Technology and Livelihood Education-Cookery Under Modular Distance Learning

Maridel SD. Espiritu, L.P.T

maridel.espiritu@deped.gov.ph

Laguna State Polytechnic University Sta. Cruz, Laguna 4008 Philippines

Abstract

The present study was conducted to create and develop supplementary learning materials for Grade 10 learners under the course of Technology and Livelihood Education- Cookery. It involves forty-two student-respondents from Pacita Complex National High School and three validator-respondents from the respective field.

It sought answers on the level of acceptability of the components of the created Supplementary Learning Materials (SLMs) with regard to objectives, content, activities, and assessment. The level of acceptability of the characteristics of the created SLMs with regard to relevance, appropriateness, aesthetic value, and adaptability. The level of student performance in the subject of TLE - Cookery by the results of the practical test. The significant effect of components and characteristics of the created SLM on the performance of the students in the subject of TLE – Cookery. The study used the descriptive correlation method. Questionnaires were the main instrument used in the research to gather data from the respondents.

The result for both the components and characteristics of the created Supplementary Learning Materials (SLMs) level of acceptability was Very High. The level of performance of the students was Satisfactory.

The SLMs have no significant effect on learners' performance in preparing stocks, and sauces as to the content and assessment of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery. However, there were significant effects on the objectives and activities of the learners' performance in preparing soup under components. There was no significant effect on the learner's performance in preparing stocks, and sauces to the characteristics of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery. The hypothesis which states that there is no significant effect on the components and characteristics of the created SLM and the performance of students in the subject of TLE – Cookery is not supported.

It is recommended that there should be enhancement of the created Supplementary Material (SLM) in terms of contents indicators by attending seminars on module or learning material construction is highly recommended. It is suggested to develop engaging activities related to the TLE-Cookery course on which students can increase their level of performance very satisfactorily by improving the rubric assessment used in the performance tests. It is suggested for administrators allocate a budget to the development of Supplementary Material (SLM) to maintain quality output and transform students' performance very satisfactorily. Other researchers can use this study to help them further analyze and improve the use of created Supplementary Material (SLM) for Grade 10 TLE-Cookery using different variables and different research designs.

Keywords: instructional rounds in education; differentiated education; modular distance learning amidst covid 19 pandemic;

1. Main Text

Introduction

In response to the localized closures brought by current times, the Department of Education has implemented the Basic Education – Learning Continuity Plan (BE-LCP) with the primary aim of continuing deliver of quality education in the country through the usage of different Learning Delivery Modalities. Modular Distance Learning (MDL) is one of the many offered distance learning modalities under the BE-LCP which focuses on learners' individualized instruction through the usage of Self Learning Modules (SLMs) in either printed or digital formats and are also used in conjunction with other learning resources, whichever is applicable to the context of the learner (Department of Education, 2020).

As such, the instruction of many subjects within the Secondary Education Curriculum has followed Modular Distance Learning (MDL). As the framework of Modular Distance Learning (MDL) allows for the usage of different materials, the development of Supplementary Learning Materials is being continuously explored. Supplementary Materials, as defined by Cahyaningrum et al. (2015) and Dodd et al. (2015), are any forms of extended learning materials that is provided to enhance student knowledge. Furthermore, supplementary materials help students achieve a conducive learning environment which helps them understand concepts more effectively through added motivation from additional materials (Dodd et al., 2015).

One of the subjects that utilize the Modular Distance Learning modality includes Technology and Livelihood Education (TLE), which concerns itself with activities related to the development of learners. Likewise, it prepares high school students in every grade level to acquire pertinent knowledge and skills that allows them to consider the possibility of earning a living early should the possibility of pursuing Higher Education be elusive (Galang, 2009 as cited by Tan, 2021). Tan (2021) states that teaching Technology and Livelihood Education needs continuous enrichment to adapt to changing conditions. In light of this, the conditions brought by the COVID-19 Pandemic largely pose a challenge to the teaching of the subject area, as there is an imperative need for quality education to take place in a skill-based learning subject such as Technology and Livelihood Education (TLE) (Yabut, 2020).

As of the writing of the present research work, there have been explorations on the efficacy of Supplementary Learning Materials in the subjects of Mathematics, Science, and English. However, the concern in the current subject area of Technology and Livelihood Education (TLE) and its specialized areas, as well as the lack of research on the TLE, has resulted in an imperative need for studies that contribute to the development of Supplementary Learning Materials. In light of these considerations, the incumbent research work primarily aims to explore the validity and efficacy of the created Supplementary Learning Materials, and compare it to the traditional ways of instruction in Modular Distance Learning (MDL) in the subject of Technology and Livelihood Education (TLE) – Cookery.

The researcher observes the need of students for learning resources due to the lack of modules specifically for Grade 10 TLE-Cookery. Thus, the researcher come upon the creation and development of the Supplementary Learning Materials (SLM). This research study may be a milestone towards learning resource development and thorough understanding of the course in TLE-Cookery.

Theoretical Framework

The current body of research needs an adequate body of relevant theories in order to explain the phenomena that plans to be explored, including the phenomena of learning through Supplementary Learning Materials (SLMs) during distance learning environments that have been brought about by the COVID-19 Pandemic. As such, the teacher-researcher anchored the present research work to relevant theories in education and learning that have an interrelation with one another in the current circumstances. The research work is based on the Cognitive Learning Theory (WGU, 2020), the Social Cognitive Theory (The Peak Performance Center, n.d.), and the Transactional Distance Theory (Delgaty, 2019).

According to Western Governors University (2020), Cognitive Learning Theory is heavily reliant on the term 'metacognition,' as it focuses on the thoughts and thought processes undergone by the brain. In Cognitive Learning Theory, learners are asked to look at the thinking and mental processes they undergo during learning, including the influence brought about by both external and internal factors. With these, Jean Piaget believed that knowledge is actively

created by the learners based on the conditions of their current cognitive structures.

Likewise, The Peak Performance Center (n.d.) highlights that Piaget's Cognitive Learning Theory believes that the mental processes made by a person internally can be studied through scientific means while focusing on the thought process behind said behavior. Therefore, looking at learning through the cognitive lens requires paying attention to the processes that are happening inside the learner's mind inclusive of observable behavior. Under this theory, the cognitive learning process states that an individual must take in a stimulus, undergo mental processes, and then create actions in response to the said stimulus.

Moreover, there are several elements to these mental processes, which The Peak Performance Center enlists as attention, observation, perception, interpretation, organization, memory retention, categorization, and forming generalizations (The Peak Performance Center, n.d.). These elements of mental processes are then used by these individuals in order to create actions on beliefs, thoughts, and understanding towards the environment during the interpretation of a stimulus.

Another theory that is utilized to explain the phenomena for the present research work includes Albert Bandura's Social Cognitive Theory, which is considered to be under the umbrella of Jean Piaget's Cognitive Learning Theory. Bandura identified three basic models of observational learning: a live model, a symbolic model, and verbal instructional model (Cherry, 2021). Social Cognitive Theory considers three different variables, including behavioral factors, environmental factors (otherwise known as extrinsic factors), and personal factors (otherwise known as intrinsic factors). These three factors work in the form of a dynamic three-way reciprocal learning wherein a change in one of these factors influences the behaviors in which they continually interact. As such, the influence of each variable depends on which factor has the strongest presence at any given moment (The Peak Performance Center, n.d.).

Valamis (2021) highlighted that one of the major elements of Social Cognitive Theory includes the phenomenon of observational learning. As people observe different actions within their environment, they also begin to learn desirable and undesirable actions and behaviors in that environment. The theory section and it was carried out with qualitative interviews. Five Human Resources professionals were interviewed to obtain data of their companies' remote and onsite onboarding processes to compare them and to identify general areas of development for remote onboarding. Finally, the data was analyzed with adapted dialogical schematization.

Moreover, Michael Moore's Transactional Distance Theory (TDT) was also chosen as a theory. Transactional Distance as a factor of Distance Learning is not just a simple separation of teachers and students when it comes to geographical distance, but is rather, a pedagogical concept of the different behaviors in the teaching-learning process that manifests as a result of such a separation. Transactional Distance Theory (TDT), as stated by Delgaty (2019), posits that there is a probability for teachers and learners to have significant gaps in the communication process, and, in turn, also provides enough elbow room to fully understanding the behavioral patterns of the learners and the teachers because of the unique environment of physical distance that equally results in transactional distance.

Structure, Dialogue, and Learner Autonomy were identified by Moore as three factors that require to be taken into heavy consideration in the event of these unique learning environments where both physical and psychological distance manifest. These three factors have different definitions as defined by Weidlich and Bastiaens (2018) and Delgaty (2019). Structure pertains to the actual design and structure of the activity or instructional material that is given to the student such as self-learning modules or quizzes, which may include how the instruction was structured and given to the student. Dialogue pertains to the ways in which the learner communicates with either the teacher or the learner, which is further classified into Synchronous, Asynchronous, and Internalized Dialogue. Learner Autonomy, on the other hand, pertains to the capacities of the learner to have a sense of self-directness and personal responsibility towards the task that was given to the student.

The researcher adopted cognitive learning theory, based on the learning environment on which the students are into. The modular distance learning is a home study learning where parents and elders guides the students on their learning with minimal encounter with the teachers. Cognitive learning theory emphasizes the learning environment that influences the students. In the modular distance learning students the internal and external factors that influence them are their family and home. The connection between students and teachers are the learning modules at hand. In order to approach the mental process of the students, learning modules be the stimulus. Thus, the second theory the researcher adopted is transactional distance theory. This theory represents the condition of the student and teacher under modular distance learning. The three factors, structure, dialogue, and learner autonomy of transactional distance theory are the main elements that push through to the creation of the Supplementary Learning Materials of Grade 10 TLE-Cookery.

Based on the theories above, through the use Supplementary Learning Materials (SLMs) for the specialization of Cookery in the subject area of Technology and Livelihood Education (TLE), students are likely to integrate their knowledge since they can experience and create meaningful ideas through its use. Through the SLMs, learners can learn

from simple before going to complex and are more likely to increase retention in learning. The theories above prove that using Supplementary Learning Materials (SLMs) for the specialization of Cookery in the subject area of Technology and Livelihood Education (TLE) can improve students' performance.

Statement of the Problem

The incumbent research work has the primary aim of developing a form of Supplementary Learning Materials (SLMs) for the specialization of Cookery in the subject area of Technology and Livelihood Education (TLE). It also aims to explore the validity of the content of the created Supplementary Learning Material (SLM) and its effectivity on the improvement of performance of select students of Pacita Complex National High School, School Year 2021-2022.

Specifically, the study will aim to shed light on the following research questions:

1. What is the level of acceptability of the components of the created Supplementary Learning Materials (SLMs) with regard to:
 - 1.1 objectives;
 - 1.2 content;
 - 1.3 activities; and
 - 1.4 assessment?
2. What is the level of acceptability of the characteristics of the created Supplementary Learning Materials (SLMs) with regard to:
 - 2.1 relevance;
 - 2.2 appropriateness
 - 2.3 aesthetic Value; and
 - 2.4 adaptability?
3. What is the level of student performance in the subject of Technology and Livelihood Education (TLE) - Cookery as shown by the results of the practical test?
4. Do the components of the created Supplementary Learning Material (SLM) have a significant effect on the performance of the students in the subject of Technology and Livelihood Education (TLE) – Cookery?
5. Do the characteristics of the created Supplementary Learning Material (SLM) have a significant effect on the performance of the students in the subject of Technology and Livelihood Education (TLE) – Cookery?

Research Methodology

A descriptive correlation method was used in the study. A descriptive correlation study is a study in which the researcher is primarily interested in describing the relationships between variables without attempting to establish a causal relationship (Noah 2021). Correlation research projects measure two or more relevant variables and evaluate a relationship between them or between them. The relevant variables of this study are content and characteristics of created Supplementary Learning Material (SLMs) and students' performance.

The researcher determined the effect of the created Supplementary Learning Material (SLMs) towards the students performance in the subject area of Technology and Livelihood Education (TLE) – Cookery. Therefore, the teacher-researcher used rubrics for the practical test as the students performance.

This specific research design was applied to the Grade 10 Students of Pacita Complex National High School who are taking the specialization of Cookery in the subject area of Technology and Livelihood Education (TLE). The sample was chosen in order to ensure the effects of the created Supplementary Learning Materials (SLMs) towards academic performance, thus fulfilling the objectives of the study and answering the research problem.

The following statistical treatments were applied in the study:

The demographic profile of both the student- and the teacher-respondents will be measured through frequency and percentage distribution;

The perception of the student-respondents was analyzed using weighted mean and standard deviation (SD);

The perception of the validator-respondents was analyzed using weighted mean and standard deviation (SD);

The students' performance utilized weighted mean and standard deviation, and;

The effect of SLMs to Students Performance uses the ANOVA

Results and Discussions

Table 1. Level of Acceptability of the Components of the Created Supplementary Learning Materials (SLMs) with Regard to Learning Objectives

Indicative Statement	Respondents Learners	Validator	Combined Mean	Adjectival Rating
The objectives are clear and comprehend easily.	<i>M</i> = 4.08 <i>SD</i> = 1.03	<i>M</i> = 5.00 <i>SD</i> = 0.000	4.54	Very High
The objectives can be achieved on the given time frame.	<i>M</i> = 3.94 <i>SD</i> = 1.02	<i>M</i> = 5.00 <i>SD</i> = 0.000	4.47	Very High
The objective meets the needs of the students under TLE-Cookery.	<i>M</i> = 4.06 <i>SD</i> = 1.04	<i>M</i> = 5.00 <i>SD</i> = 0.000	4.53	Very High
The objectives groom the skills of students in cookery.	<i>M</i> = 3.98 <i>SD</i> = 1.13	<i>M</i> = 5.00 <i>SD</i> = 0.000	4.49	Very High
The objectives are realistic in the modular distance learning situation.	<i>M</i> = 4.12 <i>SD</i> = 1.06	<i>M</i> = 5.00 <i>SD</i> = 0.000	4.56	Very High
	4.04	5.00	4.52	
	Somewhat Agree	Strongly Agree	Very High	

The highest weighted mean among learner respondents is statement 5 "The objectives are realistic in the modular distance learning situation" which is 4.12 and interpreted as "somewhat agree". Learners were guided on their learning objectives at school but this may not be the case at home in a modular distance learning setting. As signified by Anzaldo (2021), modular distance learning is the use of modules made by teachers with different tasks and activities based on the essential learning competencies. The lowest mean among learners respondents is statement 2 "The objectives can be achieved on the given time frame" which has a weighted mean of 3.94 as interpreted as "somewhat agree". The adjustment period for learners is undertaking on the use of modules, therefore the time they have to accomplish their tasks with just the guidance of people at home was prevailing.

On the validator's perception, all indicative statement has a weighted mean of 5.00 interpreted as "strongly agree" on which the overall mean of 5.00 that had a remark of strongly agree. On the other hand from the learner's perspective, the overall mean is 4.04 with a verbal interpretation of somewhat agree. Collectively for learning objectives the overall mean is 4.52 with an adjectival rating of very high.

Level of Acceptability of the Components of the Created Supplementary Learning Materials (SLMs) with Regard to Learning Content

As shown in Table 2, the respondents assessment on learning content. The learners are agreeable to the content of SLMs TLE-Cookery as seen in its adjectival rating which is 4.67 interpreted as very high. Learning content according to the International Bureau of Education UNESCO is each subject or learning area that displays topics, themes, beliefs, behaviors, concepts, and facts that are expected to be learned and form the basis of teaching and learning.

For learners, the highest weighted mean on the learning content of the supplementary learning materials (SLMs) are statement 1 "The content is well-written" and statement 5 "The content uses adequate vocabulary and appropriate

language forms." Both had a weighted mean of 4.46 as interpreted as "strongly agree". This shows that learners use the SLMs as a source of information effectively. It also indicates that the SLMs provide the right words and terminologies for TLE-Cookery.

Table 2. Level of Acceptability of the Components of the Created Supplementary Learning Materials (SLMs) with Regard to Learning Content

Indicative Statement	Respondents		Combined Mean	Adjectival Rating
	Learners	Validator		
The content is clearly well-written.	$M = 4.46$ $SD = 0.95$	$M = 4.67$ $SD = 0.577$	4.56	Very High
The content is categorized evenly according to the topics and time frame.	$M = 4.12$ $SD = 0.90$	$M = 4.33$ $SD = 0.577$	4.22	Very High
The content is filled with relevant information in relevance to the objective.	$M = 4.26$ $SD = 1.03$	$M = 4.33$ $SD = 0.577$	4.30	Very High
The content is accurate and focuses awareness of the ideas and structure of the topic.	$M = 4.40$ $SD = 0.88$	$M = 5.00$ $SD = 0.000$	4.70	Very High
The content uses adequate vocabulary and appropriate language forms.	$M = 4.46$ $SD = 0.89$	$M = 5.00$ $SD = 0.000$	4.73	Very High
Overall Mean	4.34	4.67	4.67	
Verbal Interpretation	Strongly Agree	Strongly Agree	Very High	

For the validators, the highest weighted mean is statement 4 "The content is accurate and focuses awareness of the ideas and structure of the topic." and statement 5 "The content uses adequate vocabulary and appropriate language forms."

Both groups had a verbal interpretation of strongly agree with the component level of TLE-Cookery supplementary learning material (SLMs) in terms of content with an overall mean of 4.34 for learners respondents and 4.67 for the validators respondents. .

Table 3. Level of Acceptability of the Components of the Created Supplementary Learning Materials (SLMs) with Regard to Learning Activity

Indicative Statement	Respondents		Combined Mean	Adjectival Rating
	Learners	Validator		
The procedure in the activity is easy to comprehend.	$M = 4.14$ $SD = 1.03$	$M = 4.33$ $SD = 0.577$	4.24	Very High
The activity can be done on the given time frame.	$M = 4.08$ $SD = 1.08$	$M = 5.00$ $SD = 0.000$	4.54	Very High
The activity meets the required skill to develop.	$M = 4.18$ $SD = 0.92$	$M = 5.00$ $SD = 0.000$	4.59	Very High
The activity demonstrates a life-long learning.	$M = 4.38$ $SD = 1.07$	$M = 4.67$ $SD = 0.577$	4.52	Very High
The activity progresses in time, to easy, moderate and difficult.	$M = 4.16$ $SD = 0.98$	$M = 5.00$ $SD = 0.000$	4.58	Very High
Overall Mean	4.19	4.80	4.50	
Verbal Interpretation	Somewhat Agree	Strongly Agree	Very High	

Table 3 shows the evaluation of respondents to learning activity. Learning activities are tasks learners should do to achieve a set of learning objectives. In TLE-Cookery learning activities is useful in developing skills and talents specifically in cooking. As perceived by the learners, the highest weighted mean is statement 4 "The activity demonstrates a life-long learning." which is 4.38 interpreted as "strongly agree". The learners believe that TLE-Cookery SLMs provide

learning that can be useful to them for the rest of their lives. The lowest weighted mean is statement 2 "The activity can be done on the given time frame." which is 4.08 interpreted as "somewhat agree". This coincides with the lowest weighted mean in learning objectives statement 2. "The objectives can be achieved on the given time frame." It is noteworthy since the learner respondents are under modular distance learning. Factors involved in home-schooling and time management must be considered in the making of learning activities

Table 4. Level of Acceptability of the Components of the Created Supplementary Learning Materials (SLMs) with Regard to Learning Assessment

Indicative Statement	Respondents Learners	Validator	Combined Mean	Adjectival Rating
The direction is easy to understand.	$M = 4.54$ $SD = 0.76$	$M = 4.67$ $SD = 0.577$	4.60	Very High
The item questions are relevant to the topic.	$M = 4.52$ $SD = 0.86$	$M = 4.33$ $SD = 0.577$	4.42	Very High
The item questions are relevant to the objectives.	$M = 4.46$ $SD = 0.73$	$M = 4.33$ $SD = 0.577$	4.40	Very High
The rubrics presented are easy and attainable.	$M = 4.40$ $SD = 0.78$	$M = 4.33$ $SD = 0.577$	4.36	Very High
The rubrics presented fit the needs of a modular distance learning students.	$M = 4.42$ $SD = 0.81$	$M = 4.33$ $SD = 0.577$	4.38	Very High
Overall Mean	4.47	4.40	4.44	
Verbal Interpretation	Strongly Agree	Strongly Agree	Very High	

Table 4 shows the evaluation of respondents on learning activity. The overall mean from learners' perception of the SLMs learning activity is 4.19 with a verbal interpretation of "somewhat agree" while for the validators' perception the overall mean is 4.80 which is "strongly agree". The combined mean is 4.50 with an adjectival rating of very high.

The purpose of assessment is to know if the learners gained knowledge and skills to make a decision allowing the learner to move on to the next level. Learners' assessments are conducted in many ways. Assessment tells if the objectives are met. According to a study by Umar (2018), the teacher undergoes intensive training in assessment for learning strategies and Oyinloye and Imenda (2019) were trained for assessment of learning as an instructional approach giving an overview of how assessment is vital in determining learners' progress.

The learners' activity of the supplementary learning materials SLMs as perceived by the respondents in statement 1 "The direction is easy to understand" with a mean of 4.60 was remarked as "strongly agree" and with an rating of very high. For statement 2 "The item questions are relevant to the topic" has a mean of 4.42 and was remarked as "strongly agree" with an adjectival rating of very high. The statement 3 "The item questions are relevant to the objectives" has a mean of 4.40 remarked as "strongly agree" and rating of very high. The fourth statement "The rubrics presented are easy and attainable" has a mean of 4.36 and remarked as "strongly agree" with a rating of very high. Lastly statement 5 "The rubrics presented fit the needs of modular distance learning students" has a mean of 4.38 remarked as "strongly agree" and has a rating of very high.

The verbal interpretation of the learners' activity of the supplementary learning materials SLMs on both groups of respondents is strongly agreed. The overall mean is 4.47 for learners' respondents and 4.40 for validators' respondents. The overall combination of the respondents in learners' activity is 4.44 which had an adjectival rating of very high. It shows that the learning activity of SLMs in both groups is acceptable.

Level of Acceptability of the Characteristics of the Created Supplementary Learning Materials (SLMs) with Regard to Relevance

Table 5 shows the evaluation of the respondents on relevance. Relevance perceived is being closely connected to the other. Making learning materials relevant is crucial because it increases the learners' motivation, engagement, and retention of the things to be learned.

The overall mean of the characteristics of the supplementary learning materials SLMs as perceived by the respondents in terms of relevance reveals to us the features were acceptable. The highest mean is statement 5 "The lessons, activities, and

assessment are congruent to each other" which has 4.74 and is remarked as "strongly agree". In an article by Kurt (2020) signify the alignment of lessons, activities and assessment to ensure that learners and teachers are aware of the expectations. The second is statement 3 "The main goal of the supplementary material is distinct" has a mean of 4.40 and remarked as strongly agree". The word distinct in the statement describes the TLE-Cookery SLMs as recognizable to other learning materials and can be used as reference. Since the respondents duly encompasses it that way, it provide as a proof of being relevant to others. The third is statement 1 "The TLE-Cookery framework from DepEd is clearly presented" has a mean of 4.30 remarked as "strongly agree".

It shows that the SLMs is designed to the objectives of the K to 12 curriculum. The fourth is statement 2 "The most essential competencies (MELC) is visible and clear" has a mean of 4.24 and remarked as "strongly agree". This shows that the applicability of the SLMs towards the objectives found in the Budget of Work issued in Region IV-A Calabarzon. And the last is statement 4 "The different topics are shown straightforward and no diversion" has a mean of 4.18 and remarked as "somewhat agree". The SLMs features a direct approach on different topics that let learners comprehend in their own phase.

Table 5. Level of Acceptability of the Characteristics of the Created Supplementary Learning Materials (SLMs) with Regard to Relevance

Indicative Statement	Respondents		Combined Mean	Adjectival Rating
	Learners	Validator		
The TLE-Cookery framework from DepEd is clearly presented.	$M = 4.26$ $SD = 0.94$	$M = 4.33$ $SD = 0.577$	4.30	Very High
The most essential competencies (MELC) is visible and clear.	$M = 4.16$ $SD = 1.08$	$M = 4.33$ $SD = 0.577$	4.24	Very High
The main goal of the supplementary material is distinct.	$M = 4.12$ $SD = 1.00$	$M = 4.67$ $SD = 0.577$	4.40	Very High
The different topics are shown straightforward and no diversion.	$M = 4.02$ $SD = 1.08$	$M = 4.33$ $SD = 0.577$	4.18	High
The lessons, activities and assessment are congruent to each other.	$M = 4.48$ $SD = 0.97$	$M = 5.00$ $SD = 0.000$	4.74	Very High
Overall Mean	4.53	4.13	4.33	
Verbal Interpretation	Strongly Agree	Somewhat Agree	Very High	

The learners' perception with regards to relevance in the supplementary learning materials (SLMs) overall mean is 4.53 with a verbal interpretation of strongly agree whereas the validators perception's overall mean is 4.13 with the verbal interpretation of somewhat agree. Still the overall mean, when combined together, is 4.33 which has an adjectival rating of very high.

Level of Acceptability of the Characteristics of the Created Supplementary Learning Materials (SLMs) with Regard to Appropriateness

Table 6. Level of Acceptability of the Characteristics of the Created Supplementary Learning Materials (SLMs) with Regard to Appropriateness

Table 6 shows respondents evaluation on appropriateness. For the overall means of respondents, the highest weighted mean is statement 5 "The supplementary material appropriately provides students the basic skills in cookery" which is 4.68 and interpreted as "strongly agree". This means that both groups of respondents' perceptions of acquiring cooking skills are evident. Statement 2 "The supplementary material appropriately conveys the topics and ideas on cookery in the simplest way possible for modular distance learning students to understand" has a mean score of 4.65, interpreted as "strongly agree".

Then, statement 1 "The supplementary material appropriately shows different degrees of learning (cognitive, affective, performance) which has a mean of 4.36 as interpreted as "strongly agree". Statement 3 "The supplementary material appropriately gives activity that modular distance learning students can accomplish in a given time frame" has a mean of 4.32 and interpreted as "strongly agree". And the lowest weighted mean is statement 4 "The supplementary material appropriately produces quality outputs" which is 4.26 and interpreted as "strongly agree".

Indicative Statement	Respondents Learners	Validator	Combined Mean	Adjectival Rating
The supplementary material appropriately shows different degree of learning (cognitive, affective, performance)	$M = 4.38$ $SD = 0.92$	$M = 4.33$ $SD = 0.577$	4.36	Very High
The supplementary material appropriately conveys the topics and ideas on cookery in a simplest way possible for modular distance learning students to understand.	$M = 4.30$ $SD = 0.95$	$M = 5.00$ $SD = 0.000$	4.65	Very High
The supplementary material appropriately gives activity that modular distance learning students can accomplished in a given time frame.	$M = 4.30$ $SD = 0.95$	$M = 4.33$ $SD = 0.577$	4.32	Very High
The supplementary material appropriately produces quality outputs.	$M = 4.20$ $SD = 0.99$	$M = 4.33$ $SD = 0.577$	4.26	High
The supplementary material appropriately provide students the basic skills in cookery.	$M = 4.36$ $SD = 0.98$	$M = 5.00$ $SD = 0.000$	4.68	Very High
Overall Mean	4.31	4.60	4.45	
Verbal Interpretation	Strongly Agree	Strongly Agree	Very High	

Based on a video Practical Measurement: Appropriateness by D'sa (2020) appropriateness is about whether and how we define what is being measured. Appropriateness in this context simply describes the SLMs as suitable to use. As apparently stated in each statement, the aim of this indicator is to provide measures and learn what, why, and how SLMs is being measured. Appropriateness is important because it leads to the right results in learning.

The overall mean of learner respondents is 4.31 while the overall mean of validators respondents is 4.60 which both had a verbal interpretation of strongly agree, jointly the overall mean is 4.45 with an adjectival rating of very high

Table 7. Level of Acceptability of the Characteristics of the Created Supplementary Learning Materials (SLMs) with Regard to Aesthetic Value

Indicative Statement	Respondents Learners	Validator	Combined Mean	Adjectival Rating
The front cover shows the title, illustrations and grade level students in a clear and concise manner.	$M = 4.24$ $SD = 1.06$	$M = 4.67$ $SD = 0.577$	4.46	Very High
The printed fonts can be read easily.	$M = 4.06$ $SD = 1.02$	$M = 4.67$ $SD = 0.577$	4.37	Very High
The illustrations, diagrams and pictures are coordinated within the topic.	$M = 4.26$ $SD = 0.88$	$M = 4.33$ $SD = 0.577$	4.30	Very High
The spacing along the titles and lines are neat and tidy.	$M = 4.34$ $SD = 0.89$	$M = 4.67$ $SD = 0.577$	4.50	High
The supplementary material over-all creates a feeling of significance and aspirations to achieve the goal in TLE-Cookery.	$M = 4.40$ $SD = 0.95$	$M = 5.00$ $SD = 0.00$	4.70	Very High
Overall Mean	4.26	4.67	4.46	
Verbal Interpretation	Strongly Agree	Strongly Agree	Very High	

Table 7 shows the evaluation of the respondents on aesthetic value. The aesthetic value in learning materials conditions the learner's way of learning and creates a mindset in treating the TLE-Cookery course in a fervent manner. As stated an article by Komninos (2021), describe Don Norman's three levels of design which is the visceral, behavioral, and

reflective level of design. The visceral design tells how the person perceives the product and how it feels to the person using it. The TLE-Cookery course SLMs took in this premise..

The combined mean of the aesthetic value of Supplementary Learning Materials (SLMs) as perceived by the respondents shows a very high adjectival rating. The highest weighted mean among them is statement 5 "The supplementary material overall creates a feeling of significance and aspirations to achieve the goal in TLE-Cookery" which has a mean of 4.70 and is interpreted as "strongly agree". The second is statement 4 "The spacing along the titles and lines are neat and tidy" which has a mean of 4.50 and is interpreted as "strongly agree". The third is statement 1 "The front cover shows the title, illustrations, and grade level students in a clear and concise manner" which has a mean of 4.46 and is interpreted as "strongly agree". The fourth is statement 2 "The printed fonts can be read easily" which has a mean of 4.37 and is interpreted as "strongly agree". Lastly, statement 3 "The illustrations, diagrams, and pictures are coordinated within the topic" has a mean of 4.30 and is interpreted as "strongly agree".

Both groups of respondents' perception of the aesthetic value of Supplementary Learning Materials (SLMs) has a verbal interpretation of strongly agree with the overall mean of 4.26 for learners respondents and 4.67 for validators.

Level of Acceptability of the Characteristics of the Created Supplementary Learning Materials (SLMs) with Regard to Adaptability

As shown in Table 8, the evaluation of the respondents on adaptability. Adaptability in this study is the characteristics of TLE-Cookery SLMs to be used by diverse learners not only for modular distance learning. The combined mean of the respondents on adaptability which has the highest weighted mean is statement 5 "The supplementary material engages learners to broaden their thoughts for cookery" has a mean of 4.40 interpreted as "strongly agree". Statement 1 "The supplementary material can be used by diverse students has a mean of 4.23 as interpreted as "strongly agree".

Table 8. Level of Acceptability of the Characteristics of the Created Supplementary Learning Materials (SLMs) with Regard to Adaptability

Indicative Statement	Respondents Learners	Validator	Combined Mean	Adjectival Rating
1. The supplementary material can be used by diverse students.	$M = 4.12$ $SD = 0.94$	$M = 4.33$ $SD = 0.577$	4.23	Very High
2. The supplementary material is child-friendly and different activities are presented to accommodate learners learning capabilities.	$M = 4.22$ $SD = 1.07$	$M = 4.00$ $SD = 1.00$	4.11	High
3. The supplementary material promotes positive interaction among peers, family and teachers.	$M = 4.30$ $SD = 0.84$	$M = 4.00$ $SD = 1.00$	4.15	High
4. The supplementary material likely individual differences and talents.	$M = 4.22$ $SD = 1.07$	$M = 4.00$ $SD = 1.00$	4.11	High
5. The supplementary material engage learners to broaden their thoughts for cookery.	$M = 4.46$ $SD = 0.71$	$M = 4.33$ $SD = 0.577$	4.40	Very High
Overall Mean	4.26	4.13	4.20	
Verbal Interpretation	Strongly Agree	Somewhat Agree	Very High	

The statement 3 "The supplementary material promotes positive interaction among peers, family and teachers" have a mean of 4.15 interpreted as "somewhat agree". While statement 2 "the supplementary material is child-friendly and different activities are presented to accommodate learners learning capabilities" and statement 4 "the supplementary material likely individual differences and talents" both have a mean of 4.11 and interpreted as "somewhat agree".

Under the indicator of characteristics of the created supplementary learning materials (SLMs) with regard to adaptability, the overall mean of the learners' respondents is 4.26 which has a verbal interpretation of strongly agree while the validators respondents are 4.13 with a verbal interpretation of somewhat agree. The overall mean combined together is 4.20 which has an adjectival rating of very high.

Table 9. Level of Student Performance in Technology and Livelihood Education (TLE) - Cookery as shown by the results of the practical test

Particulars	Mean	SD	Remark
Preparing Stocks	3.60	0.74	Satisfactory
Preparing Soup			
• General Appearance	3.91	0.81	Satisfactory
• Palatability	4.42	0.78	Very Satisfactory
• Nutritive Value	4.38	0.49	Very Satisfactory
• Use of Resources	4.11	0.83	Satisfactory
• Cleanliness	3.78	0.98	Satisfactory
• Conservation	3.90	0.93	Satisfactory
Overall Mean	4.08	Satisfactory	
Preparing Sauces			
• General Appearance	4.55	0.57	Very Satisfactory
• Palatability	3.88	0.44	Satisfactory
• Nutritive Value	3.88	0.98	Satisfactory
• Use of Resources	4.18	0.73	Satisfactory
• Cleanliness	3.86	0.93	Satisfactory
• Conservation	4.22	0.68	Very Satisfactory
Overall Mean	4.10	Satisfactory	

Table 9 shows the students' performance in practical test. The level of performance of learners in preparing stocks is 3.61 with an adjectival rating of satisfactory. The level of performance of learners in preparing soups is 4.08 with an adjectival rating of satisfactory. And the level of performance of preparing sauces is 4.10 which also had an adjectival rating of satisfactory.

Table 10. Effect of Supplementary Learning Material (SLM) to Students' Performance in Cookery as to Preparing Stocks

Factor	F	p	Analysis
Components			
Objectives	1.76	0.191	NS
Content	0.03	0.684	NS
Activities	0.02	0.897	NS
Assessment	0.29	0.590	NS
	0.08	0.777	NS
Characteristics			
Relevance	0.000	0.998	NS
Appropriateness	0.68	0.413	NS
Aesthetic Value	0.010	0.946	NS
Adaptability	0.010	0.962	NS

Table 10 shows the effect of the SLMs to students' performance in cookery as to preparing stocks based from the components has no significance in all indicators. The result of the p-value among the indicators of the components is more than 0.05.

Based from the table, the p-value for components in terms of objectives, content, activities and assessment is more than the level of significance 0.05. It implies that the components have no significant effect as to preparing stocks.

Also, for characteristics, the p-value in terms of objectives, content, activities and assessment is more than the level of significance 0.05. It implies that the components have no significant effect as to preparing stocks.

Effect of Supplementary Learning Material (SLM) to Students' Performance in Cookery as to Preparing Soup

Table 11 shows The effect of the SLMs to students' performance in cookery as to preparing soup based from the characteristics has no significance in all indicators. The result of the p-value among the indicators of the components is more than 0.05.

Table 11. Effect of Supplementary Learning Material (SLM) to Students' Performance in Cookery as to Preparing Soup

Factor	F	p	Analysis
Components			
Objectives	5.85	0.019	Significant
Content	0.63	0.430	NS
Activities	4.84	0.033	Significant
Assessment	0.92	0.342	NS
Characteristics			
Relevance	1.05	0.310	NS
Appropriateness	2.04	0.160	NS
Aesthetic Value	2.13	0.151	NS
Adaptability	2.40	0.128	NS

Based from the table, the p-value for components in terms of content, and assessment is more than the level of significance 0.05. It implies that the components have no significant effect as to preparing soup. On the other hand, objectives and activities has a significant effect as to preparing soup since the p value is less than the level of significance. Also, for characteristics, the p-value in terms of objectives, content, activities and assessment is more than the level of significance 0.05. It implies that the components have no significant effect as to preparing soup.

Table 12. Effect of Supplementary Learning Material (SLM) to Students' Performance in Cookery as to Preparing Sauces

Factor	F	p	Analysis
Components			
Objectives	0.43	0.513	NS
Content	0.16	0.686	NS
Activities	0.24	0.625	NS
Assessment	0.81	0.372	NS
Characteristics			
Relevance	0.020	0.888	NS
Appropriateness	0.89	0.351	NS
Aesthetic Value	0.26	0.613	NS
Adaptability	0.15	0.700	NS

Table 12 shows the effect of the SLMs to students' performance in cookery as to preparing sauces based from the components has no significance in all indicators. The result of the p-value among the indicators of the components is more than 0.05.

Based from the table, the p-value for components in terms of objectives, content, activities and assessment is more than the level of significance 0.05. It implies that the components have no significant effect as to preparing sauces.

Also, for characteristics, the p-value in terms of objectives, content, activities and assessment is more than the level of significance 0.05. It implies that the components have no significant effect as to preparing sauces.

Summary

The incumbent research work has the primary aim of developing a form of Supplementary Learning Materials (SLMs) for the specialization of Cookery in the subject area of Technology and Livelihood Education (TLE). It also aims to explore the validity of the content of the created Supplementary Learning Material (SLM) and its effectivity on the improvement of performance of select students of Pacita Complex National High School, School Year 2021-2022.

Specifically, the study will aim to shed light on the following research questions: What is the level of acceptability of the components of the created Supplementary Learning Materials (SLMs) with regard to: objectives; content; activities; and assessment? What is the level of acceptability of the characteristics of the created Supplementary Learning Materials (SLMs) with regard to: relevance; appropriateness, aesthetic Value; and adaptability? What is the level of student performance in the subject of Technology and Livelihood Education (TLE) - Cookery as shown by the results of the practical test? Do the components of the created Supplementary Learning Material (SLM) have a significant effect on the performance of the students in the subject of Technology and Livelihood Education (TLE) – Cookery? Do the characteristics of the created Supplementary Learning Material (SLM) have a significant effect on the performance of the students in the subject of Technology and Livelihood Education (TLE) – Cookery?

A descriptive method was used in the study. The researcher determined the effect of the created Supplementary Learning Material (SLMs) towards the students' performance in the subject area of Technology and Livelihood Education (TLE) – Cookery. Therefore, the teacher-researcher used rubrics for the practical test as the students' performance. The sampling method used was simple random sampling. The present research work created and developed a Supplementary Learning Material (SLM) for the subject area of Technology and Livelihood Education – Cookery and a survey questionnaire was utilized by the researcher.

Based on the data, the following findings are as follows:

The over-all mean of the components of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery has an adjectival rating of "very high". The over-all mean of the characteristics of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery has an adjectival rating of "very high". The over-all mean of the students' performance in Technology and Livelihood Education (TLE) – Cookery in preparing stocks, in preparing soup, and in preparing sauces had an adjectival rating of "satisfactory"

The result of the p-value among the indicators of the components of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery in relation to students' performance is more than 0.05 except for Objectives and Activities.

The result of the p-value among the indicators of the characteristics of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery in relation to students' performance is more than 0.05.

Conclusions

In the light of the above findings, the following conclusion are drawn

The created Supplementary Material (SLM) for Grade 10 TLE-Cookery acceptability in terms of its components is Very High. The created Supplementary Material (SLM) for Grade 10 TLE-Cookery acceptability in terms of its characteristics

is Very High. The level of the students' performance in Technology and Livelihood Education (TLE) – Cookery is Satisfactory.

There was no significant effect of learners' performance in preparing stocks, and sauces to the content of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery. However, there were significant effect on objectives and activities of learners' performance in preparing soup under content. There was no significant effect of learners' performance in preparing stocks, and sauces to the characteristics of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery.

Recommendations

On the basis of the result of this study, the following suggestions are recommended:

1. Enhancement of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery in terms of contents' indicators by attending seminars on module or learning material construction is highly recommended.
2. It is highly recommended to use quality paper and printing process of the created Supplementary Material (SLM) for Grade 10 TLE-Cookery to maintain the characteristics' indicators.
3. It is suggested to develop engaging activities related to TLE-Cookery course on which students can increase their level of performance very satisfactorily by improving the rubric assessment used in performance test.
4. Improve the created Supplementary Material (SLM) for Grade 10 TLE-Cookery objectives and activities on topic preparing soup from its content by focal group discussion, Learning Action Cell session and/or mentoring and coaching session.
5. It is suggested for administrators to allocate budget in development of Supplementary Material (SLM) for Grade 10 TLE-Cookery to maintain quality output and transform students' performance very satisfactorily.
6. Other researchers can use this study to help them further analyze and improve the use created Supplementary Material (SLM) for Grade 10 TLE-Cookery using different variables and different research designs.

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