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Development of Supplementary Learning Material in Cookery for Grade 10 Learners

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Abstract: ***In the context of this study, the researcher assessed the competencies of the Grade 10 learners in Cookery, specifically, this study described their level of competencies in preparing appetizers, preparing salad and dressing, preparing sandwiches, preparing desserts, and preparing egg dishes as basis for the development of valid supplementary learning materials. Interestingly, this developmental study revealed that they were excellent in terms of preparing egg dishes. Also, the developed supplementary learning materials in video format are based on the competencies below excellent level. Last, the level of validity of the developed supplementary materials is very high. Findings revealed that, the learners are closely approaching mastery in terms of required competencies. Additionally, video format of supplementary learning materials on preparing appetizer, preparing salad and dressing, preparing sandwiches, and preparing desserts were developed, and are valid, responsive, acceptable, useful, and quality. It is recommended that the competencies of students should be improved further by using supplementary learning material and other intervention materials and activities. Teachers should use the developed supplementary learning materials as additional instructional materials in teaching cookery to learners. Future studies should look into the effectiveness of the developed supplementary learning materials, and other variables in assessing the performance of learners in cookery course.***

Keywords: ***Experiential Course, Cookery, Cooking Skills, TLE Education, Vocational Course.***

1. INTRODUCTION

The secondary school curricula in the nation include a course called Technology and Livelihood Education (TLE). The goal of the TLE course is to give the students the practical skills they will need for the workplace through training, performance demonstrations, and other hands-on activities. It gives students in high school practical experiences, technical knowledge, and competence in fields including home economics, entrepreneurship, and many facets of technology.

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Agri-Fishery Arts, Home Economics, Industrial Arts, and Information and Communication Technology make up the K–12 Basic Education Program (BEP), which also uses TLE as one of its nomenclatures. Among these four components, one of the foci of secondary schools is Home Economics course specifically cookery.

In addition to the K–12 Program of DepEd, the Enhanced Basic Education Act of 2013 (RA) 10533, also known as the Act Enhancing the Philippine Basic Education System by Strengthening its Curriculum and Increasing the Number of Years for Basic Education, Appropriating Funds Therefor and for Other Purposes, provides clear direction for cooking course instruction (officialgazette.gov, 2013).

The study of Siachifuwe (2017) found that teachers find it challenging to achieve students' academic performance goals because there aren't any instructional resources or tools available at the school. Due to this, it is challenging for teachers to present their lectures as planned, which in turn affects how effectively pupils comprehend the subject matter.

In spite of the problems confronting cookery course instruction, it is undeniable that learners and teachers thrive and succeed. This is accentuated by the attainment of the learning competencies in the light of inadequacy of resources. The importance of the cooking course necessitates an evaluation of the learning experience. It is obvious that improving the teaching and learning process for cooking depends on assessing the learning abilities.

In the light of the aforementioned matters, the researcher found it interesting to assess the competencies of Grade 10 learners in Ilocos Sur Polytechnic State College, Sta. Maria and Tagudin Campuses. This study hopes to provide information that could serve as bases of the schools in improving their journey to quality and excellence. Likewise, this study hopes to provide an output in video format that could help the teachers in teaching the pertinent skills, knowledge, and competencies in cookery. Notably, at a time when Tiktok, Youtube, and other social media platforms are gaining popularity among students, offering supplemental materials in video formats is in line with new trends in education. After all, utilizing videos in educational settings provides benefits to learners. Which include fostering group learning, assisting learning in the areas of movement, color, and sound, bringing surroundings from outside of the classroom into the classroom, and encouraging tangible and enduring learning.

Framework of the Study
Theories in Education.
Progressive education places a strong emphasis on the value of experiential learning. Dewey believed that "hands-on" learning produces the finest results. Dewey is thus positioned as a proponent of the pragmatism-based educational philosophy. Realists claim that one must come into contact with reality. The connection between students and their surroundings is essential for adaptation and learning, in line with Dewey's educational theory. His view of the classroom was firmly rooted in democratic principles, which favored an equal voice for everyone in the instruction. Learning by doing is an educational philosophy put out by American philosopher John Dewey.

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Lavelle et al., it has been demonstrated that learning how to cook as a young child or teenager is positively related to current use of cooking and food skills, cooking practices, cooking attitude, and diet quality. This finding suggests that learning how to cook early in life may have associations with health, cooking behaviors, and food sustainability. Garduque (2012) as cited by Juan (2014), learning theories alone is insufficient; we also need practical skills. These technical skill development and livelihood initiatives could aid students and recent graduates in securing skilled employment in the future.

Food literacy can benefit from interventions that focus on enhancing cooking confidence and consumption of fruits and vegetables, with disadvantaged and low-socioeconomic groups benefiting more. To draw stronger conclusions about how cooking programs are helping to improve diet and health, consistency across study designs, delivery, and measurement of outcomes over short and long terms is required (Garcia et al., 2016).

Legal Bases of Cookery Course.
The Republic Act No. 10533, an act enhancing the Philippine basic education system by strengthening its curriculum and increasing the number of years for basic education, and appropriating funds therefor and for other purposes, was passed by the government in response to the Philippines trailing other nations in terms of access to basic education (Macanas, 2016).

Cookery Course.
The Commercial Cookery course is a hands-on, skill-oriented technical vocational course that focuses on the students' skill competences, which are a critical component of their academic performance. The equipment, facilities, and space required for the aforementioned course are provided by private establishments since they recognize their importance. The Cookery Curriculum Guide leads to the Level II National Certificate (NC II). In Cookery, some of the skills they will learn from the course include preparing appetizers, preparing salad and dressing, preparing sandwiches, preparing desserts, and preparing egg dishes.

Students may obtain a Certificate of Competency (COC) or a National Certificate Level I (NC I) after finishing Grade 10. A student can earn a National Certificate Level II (NC II) in the Technical-Vocational-Livelihood (TVL) track if they complete the Technical-Vocational-Livelihood track in Grade 12 and pass the competency-based test given by the Technical Education and Skills Development Authority (TESDA). Through NC I and NC II, graduates' employability in sectors including trade, electronics, and agriculture is enhanced.
Unquestionably, the ability to cook is a practical life skill that has been associated with higher diet quality, including increased consumption of fruits and vegetables and knowledge of healthier meal options (McGowan et al., 2015). Cooking was identified as the fifth most important life skill for modern living (the highest non-tech talent) in a UK research of 2000 residents, behind mastering online banking, using a mobile device, and conducting internet searches.

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Statement of the Problem

This study developed a Supplementary Learning Material in Cookery for Grade 10 learners. Specifically, this study sought answers to the following questions: What is the level of competencies of the learners along the following: preparing appetizers; preparing salad and dressing; preparing sandwiches; preparing desserts; preparing egg dishes? What supplementary learning material can be developed for cookery students? What is the validity level of the Supplementary Learning Material?

Review of Literature

The theory of experiential learning is a style of instruction in which teachers give learners the chance to learn by doing without taking into account their prior knowledge from the workplace or their personal lives. According to Bohn & Schmidt (2008), it can be broadly described as "the process by which a learner creates meaning from direct experience". In 1984, Kolb presented his theory on experience learning. In order to pinpoint the traits that determine the nature of experiential learning, he draws on research by Dewey, Lewin, and Piaget (Kolb, 1984).

Reicks et al. (2014) evaluated 28 cooking skills intervention programs and concluded that these treatments may have a positive impact on food preferences, dietary outcomes, and other health-related outcomes. An increasingly common prerequisite for promoting good health is having the ability to cook (Lang & Caraher, 2001). Dietetic professionals must have the necessary skills in order to take the lead in performing cooking skill interventions (Begley & Gallegos, 2010).

Supplementary Learning Material.

Strategic Intervention Material or Supplementary Learning Material, Bunagan (2012), is intended to re-teach the concepts and abilities that have not yet been learned. Students are given this information to assist them master competency-based abilities that they were unable to acquire in a typical classroom setting. Both material improvement for teachers and student learning approaches are included. It is a multifaceted approach to helping pupils learn effectively and independently. He made other distinctions between SIM and modules. The subject of this intervention material is the skill that the pupils weren't able to grasp in regular class. Kits, textbooks, magazines, newspapers, photos, recordings, slides, transparencies, videos, video discs, workbooks, and electronic media, such as music, movies, radio, software, CD-ROMs, and internet services are additional examples of instructional materials. The term "instructional materials" refers to a variety of printed and non-printed resources used in schools that are intended to help students learn (Dahar, 2011). Instructional material plays a critical role in the teaching and learning process. It enhances student retention and makes the teaching-learning process more engaging (Nicholls, 2000; Raw, 2003). Albaico et al. (2014) claimed that as students learn best by doing, having outstanding instructional materials has a significant impact on student learning. Its adequate amounts of units in relation to the number of learners go along with its excellent instructional materials.

On the use of video materials in teaching, Tony Blakes (2012) noted that video is not being

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used in higher education as much as it should be. He argued that it should not be an "extra" component of the learning design but should be utilized in a more integral manner. Despite the lower cost of video, teachers are still reluctant to use it in higher education. Since most higher education is text-based, instructors are not familiar with the potential of video in the classroom. Erebus International (2007), for maximum learning outcomes, it is suggested that not only modules but also videolar instructions be created. Learning media are useful instruments for encouraging and supporting management of the learning process, enabling students to quickly pick up knowledge, abilities, processes, and traits outlined in the curriculum requirements. Natural media, print media, technical media, and varied local learning networks are a few examples of the different types of learning media. By setting attainable, realistic learning goals within a personalized study plan, these promote learning, enhance classroom management strategies, and motivate achievement for greater use of existing educational resources (Rillo, 1995). Many students find that hearing about lessons is not enough; they also need to see them, as stated by a particular professor. Students will benefit immensely from the use of films, attractive diagrams, and visuals that have a beautiful appearance when explaining an operation or a skill. Documented classes allow students to study at their own pace by being recorded by video cameras, technology, and other recording devices. Students can view these courses as needed and whenever they don't understand them. This can be accomplished by utilizing a document camera to display the lesson or by using more sophisticated technology like a video or other technological tool. It should be noted that children learn best when instruction is combined with a picture; a visual is not always an effective teaching tool. To keep students interested, mix up your usage (Linde, n.d.).

The effectiveness of an instructional strategy depends on the students' learning requirements. Teachers must take into account both the kids' learning styles and emotional requirements. The creation of educational resources is essential to the teaching-learning process. According to Dahar (2011), there is a significant correlation between the use of instructional resources and secondary students' academic achievement. The Department of Education has recommended strategic intervention material as a teaching tool to raise students' performance across subject areas.

2. METHODOLOGY

Research Design

This study used developmental as its research design. Developmental research is defined as the systematic study of designing, developing, and evaluating instructional programs, processes, and products that must meet criteria of internal consistency and effectiveness (Richey, 1994) cited by Bongolan (2018). In this study, developmental research design was considered, wherein development of Supplementary Learning Material for the cookery subject in video format based on competencies below excellent level was undertaken. The Supplementary Learning Material in video format were validated by five (5) experts.

Population and Locale of the Study

The respondents of the study were the Grade 10 learners in Cookery using total enumeration.

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Table 1. Population of the study

ISPSC Campuses	Grade 10 Learners
Sta. Maria	14
Tagudin	22
TOTAL	36

Research Instrument
Questionnaire adapted from DepEd was used in evaluating the Instructional Materials with slight modification used as the instrument in gathering the evaluation of experts on the Supplementary Learning Material in video format.

Treatment of Data
In the analysis and interpretation of data, mean was used to described the level of skill competency of the Grade 10 learners in Cookery and the level of validity of the developed supplementary materials.

Data Categorization
To validate the Supplementary Learning Material, the following 5-point Likert scale was used: Basis for the Development of Supplementary Learning Material: Competency Rating lower than 95 statistical limit

Statistical Limit	Descriptive Rating	Overall DR
4.21 – 5.00	Very Valid (VV)	Very High (VH)
3.41 – 4.20	Valid (V)	High (H)
2.61 – 3.40	Moderately Valid (MV)	Moderate (M)
1.81 – 2.60	Less Valid (LV)	Fair (F)
1.00 – 1.80	Least Valid (LsD)	Poor (P)

Statistical Limit	Descriptive Rating
95 – 100	Excellent (E)
90 – 94	Very Satisfactory (VS)
85 – 89	Satisfactory (S)
80 – 84	Needs Improvement (NI)
75 – 79	Unsatisfactory (U)

3. RESULTS AND DISCUSSIONS

This data gathered with the use of historical data through documentary analysis, have been analyzed and interpreted. The results are shown in tabular forms to facilitate better understanding.

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Level of Competencies of the Grade 10 Learners in Cookery

Table 2. Level of cookery competency of the Grade 10 learners

COMPETENCY	MEAN	DESCRIPTION
Preparing Appetizers	92.16	VS
Preparing Salad and Dressing	93.51	VS
Preparing Sandwiches	92.56	VS
Preparing Desserts	91.14	VS
Preparing Egg dishes	95.29	E
OVERALL MEAN	**92.93**	**VS**

Legend:

Statistical Limit	Descriptive Rating
95 – 100	Excellent (E)
90 – 94	Very Satisfactory (VS)
85 – 89	Satisfactory (S)
80 – 84	Needs Improvement (NI)
75 – 79	Unsatisfactory (U)

The learners were excellent in terms of preparing egg dishes as supported by the 95.29 mean rating. This means that they can prepare excellent egg dishes. This also accentuates the fact that they possess the required knowledge and skills in preparing egg dishes. Thus, they master this competency.

Developed Supplementary Learning Materials
Rationale.
Cookery course enables learners to become more knowledgeable, competent and skilled in all aspects of cooking, including food preparation and food safety. Notably, providing additional materials in video form aligns with emerging trends in education, particularly at a time when TikTok, Youtube, and other social media platforms are gaining traction among students. Utilizing videos in educational settings benefits students. Benefits of using videos in the classroom include encouraging group learning, aiding learning in dimensions of movement, color, and sound, bringing outside-of-class environments into the classroom, and promoting concrete and long-lasting learning. In fact, Mayer (2001) claimed that multimedia components that engage many senses, such as movies used in learning environments, boost student motivation and engagement. Using movies as teaching resources has even another benefit, according to Dale's cone of experience. It is obvious that learning will be simpler and more meaningful the more senses that are used in the learning environment (Kostereliogl u, 2016).

Objectives
In developing the supplementary learning materials, the researcher aims to achieve the following: provide additional instructional materials for teachers who are teaching cookery course; bridge teaching with the needs of the learners towards maximum learning experiences; and enhance the level of competency of the students in the specified competencies in cookery.

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Table 3. Level of validity of the developed supplementary learning materials

Indicators	Mean	DR
A. Content		
1. Content is suitable to the student's level of development	4.60	VV
2. Material contributes to the achievement of specific objectives of the subject area and grade/year level for which it is intended.	5.00	VV
3. Material provides for the development of the psychomotor skills for students' performance.	5.00	VV
4. Material arouses interest of the students.	5.00	VV
5. Adequate warning/cautionary notes are provided in topics and activities where safety and health are of concern.	5.00	VV
Submean	4.92	VH
B. Format		
1. Size of letters are appropriate to the intended user.	4.50	VV
2. Spaces between letters and words facilitate reading.	5.00	VV
3. The letters/words are readable and appropriate.	4.75	VV
4. There are no typographical and other errors (e.g., inappropriate, or unclear illustrations, missing labels, wrong captions, etc.)	4.50	VV
5. Harmonious blending of elements (e.g., illustrations and text)	4.75	VV
Submean	4.70	VH
C. Quality		
1. The video conveys huge amounts of information in a short time.	4.80	VV
2. It increases an individual's understanding of the topic/lesson.	4.60	VV
3. The video attracts the audience and engage them in the performance.	4.80	VV
4. The video is a high-definition video having (720p) to (1080p) resolution.	5.00	VV
5. The video displays better quality pixels that store lots of details such as color, contrast, and shadow, etc.	5.00	VV
Submean	4.84	VH
OVERALL MEAN	4.82	VH

Supplementary Learning Materials.
The developed supplementary learning materials are composed of five (5) video clips. The videos are centered on preparing appetizers, preparing salad and dressings, preparing sandwiches, preparing desserts, and preparing egg dishes.

Level of Validity of the Developed Supplementary Learning Materials
As shown in the table 3, content posted the highest mean rating of 4.92 described as very high. The results indicate that the developed supplementary materials contain inputs or information that are responsive and suitable to the needs of the learners. The materials can be used to get the attention of the learners and possess the quality needed for an instructional material. Clearly, the content and quality of the proposed material is responsive (Terano, 2015) since alignment of the objectives and content is implied. This is vital in material development in

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education. In fact, Corpuz and Salandanan (2013) highlighted the teaching materials' content and quality should respond to the needs of the learners.

The created video materials offer higher benefits for student learning when compared to traditional teaching (Greenberg & Zanetis, 2012). The findings support a study by Pekdağ (2010) that found the use of videos in teaching and learning environments is effective in three areas: improving learning and memory, motivating students to learn more, and aiding in knowledge visualization.

Notably, the rating suggests that the materials were formatted in a way that the fonts, transitions, and other elements of audio-visual instructional materials meet the standards and criteria. However, the format of the supplementary materials can still be improved for maximum acceptability. Videos and their formats are suitable for the character of today's youth and can be used in the classroom today for instructional purposes (Gentry, 2008). According to Zhang et al. (2006), in video practices, the learner masters the actual objects and movement patterns through observation, and the films offer opportunities for in-depth learning. Videos used in learning environments will in this context assure the effectiveness of hearing and vision senses by allowing interaction between the video and the students, as opposed to the content delivered in the classroom during traditional presentations (Kosterelioglu, 2016).

Overall, the level of validity of the developed supplementary materials is very high as supported by the 4.82 overall mean. This suggests that the output of the study is useful, suitable, responsive, and can improve the quality of teaching and learning experiences in cookery. Also, the developed output meets the standard of the evaluators. By combining different learning elements, such as visuals, movement, and music, instructional materials in video format undoubtedly offer potential for in-depth learning (Kosterelioglu, 2016). This ensures control over information reception and permits learning to occur at individual rates (Greenberg & Zanetis, 2012).

4. CONCLUSIONS

The following conclusions are drawn: The learners are closely approaching mastery in terms of required competencies. Video format of supplementary learning materials on preparing appetizer, preparing salad and dressing, preparing sandwiches, and preparing desserts can be developed. The developed supplementary learning materials in video format are valid, responsive, acceptable, useful, and quality.

Recommendations

The following recommendations are offered: The competencies of students should be improved further by using supplementary learning material and other intervention materials and activities. Teachers should use the developed supplementary learning materials as additional instructional materials in teaching cookery to learners. Future studies should look into the effectiveness of the developed supplementary learning materials. Future studies may look into other variables in assessing the performance of learners in cookery course.

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