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Kitchen Tools and Utensils Familiarity Using Interactive Multimedia as an Intervention

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Abstract:
Aside from diverse learning challenges, learners may also have different skills and learning preferences. Some learners learn better visually, while others must rely on their tactile or actual experience using interactive multimedia in educating learners to become comfortable in teaching kitchen tools and utensils familiarization. This study used a non-experimental research method known as the quantitative-descriptive correlation method. It uses statistical analysis to find out the correlation between two variables. The impacts of unrelated variables under examination are not examined in correlational research. The purpose of the study is to determine whether using interactive multimedia in Mabayuan Senior High School's class of 42 students in Grade 11 Home Economics and Cookery is successful.

In using Interactive Multimedia Intervention, the age group of 15-17 was interested in the class discussion. The post-mean tests were higher than the pretest mean which meant that performance of the learners improved after use of the Interactive Multimedia Intervention The null hypothesis was thus rejected, the 4 learners with mediocre performance will undergo further intervention and the proponent will adopt various teaching methods to their performance in Cookery. According to Christina & Ganing (2021) cited the study of (Putri & Muhtadi, 2018), wherein multimedia learning is proven to be effective in increasing the achievement of students' cognitive learning outcomes.

Keywords: interactive multimedia, intervention, performance

INTRODUCTION

Every competency of Cookery NCII discusses the proper use of tools, utensils, and equipment in preparing the learners following K to 12 Basic Education Curriculum, Junior High School Technical Livelihood Education, and Senior High School - Technical-Vocational-Livelihood Track, Home Economics – Cookery (NC II) which is equivalent to 320 Hours. Allow those who cannot afford to go to college by giving them a National Certificate II (NC II) by passing the examination.

According to Griffin (2018) kitchen utensils and equipment are small handheld tools used for preparation common kitchen tasks include, cutting food or open fire on the stove, baking, grinding, mixing, blending, and measuring. There are many types of kitchen utensils and equipment, and different utensils are very helpful and preparing for cooking. In some situations, when you first start cooking kitchen utensils seems to be not that much important but knowing the importance of kitchen utensils means a lot because using the proper kitchen utensils will make a job easily and perfect.

Apart from various learning difficulties, learners may have different abilities and styles of learning. Some are more competent in visual learning while and must learn through the sense of touch or practical experiences. In using Interactive Multimedia Intervention, the remediation of the learners who did not

meet the passing grade of the assessment, therefore, this should design diversified teaching activities and adopt various teaching methods to help students develop their potential and remove the obstacles in learning.

The researcher will determine the kitchen tools and utensils familiarity of students using Interactive Multimedia Intervention (IMI) on Grade 11 Home Economics-Cookery learners of Mabayuan Senior High School. In this research, the researcher will be studying how the Grade 11 Cookery learners understand the proper use of kitchen tools and utensils needed for their specialized subject Cookery NC II.

This study answered the following questions:

1. How may the profile of the respondents be described in terms of:
   1.1.age; and
   1.2.gender
2. What is the performance of the learners before implementation of Interactive Multimedia intervention in Grade 11 Cookery learners? What is the performance of the learners after implementation of Interactive Multimedia intervention in Grade 11 Cookery learners?
3. Is there a significant difference in the performance of the students after the conduct Interactive Multimedia intervention when they were group together according to profile variable?

This study was conducted in Mabayuan Senior High School, Mabayuan, Olongapo City.

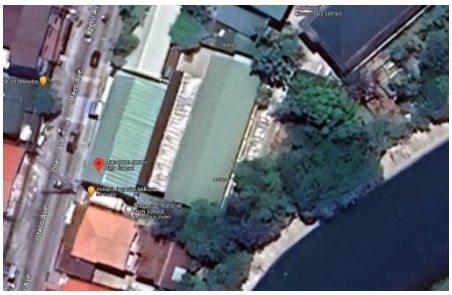

Figure 1. Locale of the Study

1. METHODOLOGY

This study determined the effectiveness of using interactive multimedia strategy in familiarity in kitchen tools and utensils and it is important to know on how well they know the kitchen tools and utensils basis for passing Cookery Subject and employed quantitative- descriptive correlation method of research which refers to a non-experimental research method. It studies the relationship between two variables with the help of statistical analysis. Correlational research does not study the effects of extraneous variables under study (Kermer, 2021). The study designs to test the effectiveness of using Interactive Multimedia in Grade 11 Home Economics Cookery/learners class.

The participants of this study were Forty-two (42) Grade 11 TVL Home Economics-Cookery learners of Mabayuan Senior High School for School Year 2021-2022.

The researchers utilized Purposive sampling. (Dudovskiy, 2022) Purposive sampling also known as judgment, selective or subjective sampling is a sampling technique in which researcher relies on his or her own judgment when choosing members of population to participate in the study. Alternatively, purposive sampling method may prove to be effective when only limited numbers of people can serve as primary data sources due to the nature of research design and aims and objectives. This contextualized instructional

material using multimedia was developed which aims to help the learners familiarize the kitchen tools and utensils. The learners demonstrate an understanding the uses of the kitchen tools and utensils. It is an interactive multimedia intervention material as additional learning resource which is plan to be used regularly and as will aid them in acquiring their TESDA certification.

Table 1 The Topic and Competency Needed for Intervention using Multimedia

Date	Topic/ TVL Curriculum	Intervention using Multimedia	Competency in the Curriculum Guide
June 15, 2022	Prepared Egg Dishes (ED) Home Economics/ Cookery NCII	Presented the 1 to 15 tools and utensils needed in egg preparation.	LO 1. Perform mise en place 1.1. clean, sanitize, and prepare tools, utensils, and equipment needed in preparing egg dished TLE_HECK9- 12ED-Ia-1
June 16, 2022	Prepared And Cook Seafood Dishes (PC). Home Economics/ Cookery NCII	Reviewed the 1 to 15 tools and utensils and present the 16-30 tools and utensils needed in Cook Seafood Dishes	LO 1. Perform Mise en Place 1.1. prepare the kitchen tools, equipment, and ingredients based on required standards TLE_HECK9- 12PC-IIe-14
June 17, 2022	Prepared and Cook Meat (PCM). Home Economics/ Cookery NCII	Reviewed the 1-30 tools and utensils needed in Cook Meat	LO 1. Perform mise en place 1.1. prepare the tools, equipment, ingredients, and other supplies based on the given recipe TLE_HECK9-12PCM-IVa-30

Table 1 showed the topic and competency needed for intervention using Multimedia with the corresponding dates as given. The table presented the topic in Cookery such as: egg preparation, seafood dishes, and cooked meat with their corresponding Learning competencies and the proceeding activities i.e. presentation of lesson, use of the multimedia presentation on tools and utensils spread over two days in which day 3 will be the review as preparation for their posttest on June 17, 2022.

The instrument used in this study was a researcher-made test with 30-item multiple choice questions and it was in a form of an objective assessment in which respondents were asked to select only correct answers from the choices offered as a list. Also, a questionnaire was to secure despondence to certain questions. The questionnaire that was used in this study was designed to obtain information that pertained to the evaluation for Interactive multimedia about kitchen tools and utensils. This instrument was a questionnaire provided by the researchers (see appendix B). Respondents were asked to answer the following questions provided in the questionnaires. Interactive multimedia; such as interactive games was multimedia with user-operated controller tools. The most significant feature of interactive multimedia was that students paid attention to both the media and the object and it was also essential during the learning process.

The steps made by the researcher was to seek permission from the principal in Senior High School to conduct the study. Then the researcher conceptualized the Interactive Multimedia and a teacher-made test and collects data from a sample of a population in Grade 11 Home Economics-Cookery learners (see table 3). The target date was the 2nd Semester School Year 2021-2022. The conduct of pilot testing of Cookery Interactive Multimedia, was done through pretest assessment of the learners and retrieved all the pretest, the researcher checked the result and identified learners who gets the low score were the respondents, they attended the face to face class. The Interactive Multimedia was an intervention and monitoring of the learners' progress and gave posttest. The distribution and retrieval of the tool are based on the schedule of the distribution and retrieval of the modules. All the procedures made by the researcher are based on the health protocols set by the Inter-Agency Task Force on Emerging Infectious Diseases (IATF) and the Department of Education strictly implemented. The data conformity and validity to verified and cross-checked several times to determine their validity and reliability of the research.

Table 3 The Concept of Interactive Multimedia using Gagne's 9 Events of Instruction and Examples of Implementation

Gagne's Event of Instruction	Activity to Produce Event	Examples used in Class
Gain attention	Introduce learners to an engaging introductory activity.	The class begins with a presentation of material relating to the lecture topic, such as a YouTube video.
Inform learners of objectives	Motivation and learning objectives for the class.	Students are given the objectives and then shown how to apply what they've learned in the actual world.
Stimulate recall of prior learning	Present an experience that stimulates memory of prior learning	Questions and visuals were used to review related content and make the connection to prerequisite knowledge easier.
Present stimulus	Deliver content	Every 5-10 minutes, new content was given. Complex concepts are taught using visuals, movies, remembering techniques, and examples.
Provide learner guidance	Give learner examples	As examples of expected learning, students played guess the picture, listened to lecture recordings, examined handouts, and reviewed sample questions.
Elicit performance Provide feedback	Give practice activities Feedback should be immediate, specific and corrective	Students played a game in which they had to Guess the Picture and Share it, with quick feedback.
Assess performance	Provide post-assessment materials to students.	Following lecture sessions, students and teachers were given minimal point quizzes to measure their learning.

		Tests that are designed to evaluate overall learning
Enhance Retention and Transfer	Provide resources that help with knowledge retention and transfer.	This was done to improve information retention and transfer by allowing students to discuss logic and reinforce new understanding.

Table 3 Concept of Interactive Multimedia using Gagne's 9 Events of Instruction and Examples of Implementation is the process by which the intervention phase was done.

The proponent of the study assured that the following ethical principles were observed: the need to (a) do good (known as beneficence) and (b) do no harm (known as non-malfeasance); In the conduct of the study, (c) obtaining informed consent from research participants; (d) protect their anonymity and confidentiality; (e) avoid using deceptive practices; and (f) give participants the right to withdraw from your research.

Chetty (2016) This requires values alike accountability, trust, mutual respect, and fairness among all the parties involved in a study. This, in turn, depends on the protection of intellectual property rights of all the contributors, established through the implementation of ethical considerations. Other ethical considerations in research refer to accountability towards the public funds and gaining public support are also important. All-important data and information were gathered, tallied, analyzed, and interpreted carefully on the basis of statistical statement. All data were encoded, tallied, and interpreted using different statistical tools.

The following statistical treatments were used in analyzing the gathered data:

1. To quantify data on the profile of the respondents- sex, track, and strand, frequency count, mean, and percentage was used;
2. To test the hypothesis if there is no significant difference on the post-performance of the students after the conduct of Interactive Multimedia intervention. The proponent used Pearson's Correlation Coefficient for determining the statistical relationship or association between two continuous variables. Since it is based on the method of covariance, it is known as the best method for quantifying the relationship between variables of interest.

$$r_{xy} = \frac{n\sum x_i y_i - \sum x_i \sum y_i}{\sqrt{n\sum x_i^2 - (\sum x_i)^2}\sqrt{n\sum y_i^2 - (\sum y_i)^2}}$$

Formula:

rxy = Pearson r correlation coefficient between x and y

n = number of observations

xi = value of x (for ith observation)

yi = value of y (for ith observation)

2. RESULTS AND DISCUSSION

The following were the data gathered using the pre-test and post-test in each group with respect to the teaching strategy used.

Table 4 Demographic Profile of Respondents

Age	Male	%	Female	%	Total	%
21-above	3	**17**	3	**13**	6	**14**
18-20	7	**39**	8	**33**	15	**36**
15-17	8	**44**	13	**54**	21	**50**
Total	**18**	**100**	**24**	**100**	**42**	**100**

Table 4 showed that most of the respondents are twenty-one (21) or 50% male and female fell into the age category of 15-17 years old while fifteen (15) with 36% male and female belonged to the age category of 18-20 years and six (6) or 14% on 21-above.

Table 5 Frequency Distribution of Pre-test and Post-test Scores of Learners

Score	Pre-test	%	Post-test	%
26-30	0	0%	7	17%
21-25	16	38%	23	55%
16-20	9	21%	8	19%
11-15	6	14%	3	7%
6-10	11	26%	1	2%
1-5	0	0%	0	0%
Mean Score	**16**	**100%**	**22**	**100%**

Table 5 showed that the performance of the learners before the Interactive Multimedia intervention was implemented with the mean score of sixteen (16), and the performance of the learners in the post-test with the mean score of twenty-two (22) which indicates an improvement.

In table 6 revealed that only four (4) learners out of 42 did not increase their post-test and decreased to the range of 1 to 7 points that is why they are recommended to undergo another enrichment. This is evidenced by previous research, which states that multimedia is more effectively used in learning to improve student learning outcomes when compared to conventional learning. (Kuswanto et al., 2017; Riyadi & Pardjono, 2014). Other research findings also stated that learning multimedia can be a medium that has enormous potential in helping the learning process (Khan & Masood, 2015; Widyatmojo & Muhtadi, 2017) and according to Christina & Ganing (2021) cited the study of (Putri & Muhtadi, 2018), wherein multimedia learning is proven to be effective in increasing the achievement of students' cognitive learning outcomes.

Table 6 Frequency Distribution of the Respondents' Profile, Pre-test and Post-test

Learners	Male	Female	Age 15-17	Age 18-20	21-above	Pre-test	Post-test	Differences
1		1			1	20	30	10

2		1	1			23	25	2
3		1	1			23	23	0
4	1				1	23	27	4
5		1	1			24	17	-7
6		1	1			23	23	0
7		1		1		23	25	2
8		1	1			22	23	1
9		1	1			22	25	3
10	1		1			24	21	-3
11	1			1		22	27	5
12		1	1			22	21	-1
13		1	1			22	29	7
14	1		1			22	23	1
15		1		1		24	21	-3
16	1		1			22	24	2
17	1			1		22	24	2
18	1			1		20	27	7
19		1	1			19	25	6
20	1				1	14	20	6
21		1		1		17	24	7
22	1		1			18	27	9
23	1				1	18	24	6
24		1			1	9	18	9
25	1			1		8	22	14
26		1			1	9	14	5
27	1		1			16	28	12
28		1		1		12	22	10
29	1			1		11	16	5
30	1			1		7	20	13
31	1		1			8	18	10
32	1		1			11	12	1
33		1	1			6	12	6
34	1		1			9	18	9
35		1	1			11	21	10
36		1		1		11	19	8
37		1	1			10	22	12
38	1			1		7	24	17
39	1		1			8	9	1
40		1		1		19	22	3
41		1		1		9	23	14
42		1		1		16	25	9
Total	**19**	**23**	**21**	**15**	**6**	**686**	**920**	224

The performance of the students after the conduct Interactive Multimedia intervention when they were grouped together according to profile variable

Table 7 The T-value and p-value of Pre-test and Post-test

Coefficient (r):	0.573776003
N:	42
T-statistic	4.430798178
DF:	40
p value:	0.000071

Table 7. showed that based on the computed t-value is 4.43, p-value < .001 the null hypothesis is rejected, therefore, **there is significant difference between the performance of the learners before and after the conduct of Interactive Multimedia intervention.**

3. CONCLUSIONS

Based on the findings presented, the following conclusions are drawn:

1. Demographic profile. Most of the respondents belong to the 15-17 age range and are dominated by female.
2. The pre-test and post-test scores showed that after the Interactive Multimedia intervention was implemented, the performance of the learners increased and improved. Therefore, it can be inferred from the results that interactive multimedia has a positive impact on students' learning outcomes.
3. The null hypothesis is rejected, therefore there is significant difference between the performance of the learners before and after the conduct of Interactive Multimedia intervention.

4. RECOMMENDATIONS:

The researcher recommended the interactive multimedia approach in teaching kitchen tools and utensils familiarity in Cookery subject was effective in Mabayuan Senior High School.

1. The proponent encourages teachers to create an interactive multimedia in their respective learning area to have additional resources in teaching or enrichment.
2. The 4 learners who decreased in their post-test should undergo other enrichment activity. (See Table 6).
3. Teachers may use interactive multimedia instructional/ intervention in Cookery subject so that learners will increase the familiarization regarding kitchen tools and utensils.

Plan for Dissemination and Advocacy

The researcher's plan after the completion of this research, it was expected that:

1. Share and present the findings of this research through School Learning Action Cell on November to teachers and stakeholders.
2. Promote the Interactive Multimedia to colleagues and share to other school for familiarization of Cookery tools and utensils as part of learning resource.
3. A year-round activity on encouraging teacher to develop interactive multimedia and action research in their learning areas.

4. Use this Interactive Multimedia as basis of intervention as method of instructional materials on the learning recovery plan in different learning area.
5. Search for trusted website or social media page to post the findings of this research as an additional reference.

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