

# Laboratory Work in Home Economics for Improved Performance of Third Year BTVTED Students

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## Abstract

Home Economics is adapting to the 21st century where practical skills and hands-on experiences lead to potential technical- vocational career journeys. Laboratory works provides the opportunity to learn important life skills, such as cooking, nail services, cosmetology, and textile and sewing. It is a link between theory and practice in teaching and learning process that develop student's creativity problem solving capabilities. However, the effectiveness of these teaching methods is dependent upon their systematic implementation, with schools and educators being key to transferring those hands-on skills to learners and fostering a progression from novice to expert through active learning and practical application.

With that, this paper explored the in integration of laboratory works to Home Economics lessons such as cookery, nail services, cosmetology and textile and sewing. Descriptive research design was utilized in the study. Results showed that students demonstrated satisfactory performance across various subjects. Incorporating laboratory work improved their performance in hands-on workshops, project-based learning, real-life simulations, and demonstrations. The integration of laboratory work was deemed effective in enhancing student performance both practical tasks and theoretical assessments. However, respondents identified resource shortages, safety concerns, and the gap between theory and practice as the primary challenges in utilizing laboratory work. The study concludes that laboratory work significantly enhances both practical and theoretical competencies of students. To address these challenges, strengthen experiential learning and bridge gap between academic instruction and real-world application, Realistic Experiences for Actual Learning (REAL) as a Job Shadowing Program, was proposed.

**Keywords:** *Home Economics, Laboratory Works, Cookery, Textile and Sewing, Cosmetology, Nail Services, REAL Program*

## Introduction

Home Economics education has evolved into a dynamic field that equips learners with essential life skills and vocational competencies. In the context of the 21st century, it emphasizes experiential learning, where students acquire knowledge through direct engagement in practical activities. Laboratory work plays a critical role in this process, serving as a bridge between theoretical concepts and real-life application.

The Bachelor of Technical-Vocational Teacher Education (BTVTEd) program prepares future educators to teach skill-based subjects such as cookery, cosmetology, nail care, and textile and sewing. These areas require mastery of both cognitive and psychomotor skills. However, observations indicate that many third-year students exhibit low engagement and inconsistent performance in these skill-based disciplines. This may be attributed to insufficient exposure to structured laboratory experiences and limited opportunities to apply theoretical knowledge in practical settings.

Anchored on Kolb's Experiential Learning Theory, which posits that learning occurs through experience, reflection, and application, this study investigates the role of laboratory work in enhancing student performance. Specifically, it aims to assess student performance across Home Economics areas, evaluate the integration of laboratory work, identify level of effectiveness and challenges encountered, and propose an intervention program to improve learning outcomes.

## Methodology

### Research Design

This study employed a descriptive research design to systematically gather and analyze data regarding the effectiveness of laboratory work in Home Economics education.

### Participants

The respondents consisted of forty (40) third-year BTVTEd students enrolled at Colegio de Naujan, Oriental Mindoro, during the academic year 2025–2026. Purposive sampling was used to select participants who were actively engaged in Home Economics courses.

### Research Instrument

A researcher-made questionnaire served as the primary data-gathering tool. It consisted of four parts:

- Performance in Home Economics (cookery, nail care, cosmetology, textile and sewing)
- Integration of laboratory work (hands-on workshops, project-based learning, simulations)
- Effectiveness of laboratory work (performance task/practicum, theoretical assessment)



- Challenges encountered

The instrument underwent validation by subject matter experts and was tested for reliability.

### Data Gathering Procedure

Permission was secured from the college administrator prior to data collection. Questionnaire was the main tool used to gather data needed for the study. Construction, validation, administration, retrieval and scoring of responses were the steps followed to ensure reliability and validity. The questionnaire was administered through Google Forms and in-person for students with limited internet access. Respondents were informed of the purpose of the study and assured of confidentiality.

### Data Analysis

Data were analyzed using weighted mean and ranking to determine the level of performance and effectiveness. Verbal interpretations were assigned based on established scale ranges.

## Results

### 1. Performance in Home Economics Lessons

The tables below present the performance of the respondents in Home Economics particularly in lessons about cookery, nail care, cosmetology and textile and sewing.

#### 1.1 Cookery

The findings revealed that students demonstrated an overall satisfactory performance in all areas of Home Economics. Table 1 presents the performance of the students in Cookery having a mean of 2.92 with the verbal interpretation of Satisfactory. Students performed well in following safety procedures and organizing tools. However, lower scores were observed in sanitation practices and accurate measurement of ingredients.

**Table 1**  
**Performance in Home Economics in Cookery**

Cookery	Weighted Mean	Verbal Indicator	Rank
1. Follows the safety procedures before doing any related cooking activities.	3.20	Satisfactory	1
2. Prepares the tools and equipment needed.	3.10	Satisfactory	4
3. Cleans the kitchen area hygienically in accordance with food safety and health regulation.	2.48	Fair	7
4. Sanitizes and prepares tools, utensils and	2.90	Satisfactory	5

equipment based on the required tools.

5. Stores cleaned kitchen tools and equipment safety in the designated area.	3.19	Satisfactory	2
6. Incorporates the standard procedure based on the given recipe plan.	3.12	Satisfactory	3
7. Utilizes properly the measuring tools in preparing the dry and liquid ingredients.	2.49	Fair	6
<b>Composite Mean</b>	<b>2.92</b>	<b>Satisfactory</b>	

### 1.2 Nail Care

Table 2 presents the performance of the students in Nail Care having a mean of 2.76 with the verbal interpretation of Satisfactory. Students showed competence in preparing tools and materials. Weaknesses were noted in ensuring client comfort and applying nail polish neatly.

**Table 2**  
**Performance in Home Economics in Nail Care**

Nail Care	Weighted Mean	Verbal Indicator	Rank
1.Pre pares tools, materials, and equipment properly.	3.34	Satisfactory	1
2.Cleans and sanitizes hands, feet, and tools before and after use.	2.91	Satisfactory	3.5
3.Performs correct nail trimming, shaping, and polishing techniques.	2.91	Satisfactory	3.5
4.Demonstrates proper cuticle care and product application.	2.76	Satisfactory	4
5.Presents well-groomed and polished nails.	2.54	Satisfactory	5
6.Ensures client comfort and safety throughout the procedure.	2.43	Fair	7
7.Applies nail polish and decorative materials neatly.	2.44	Fair	6
<b>Composite Mean</b>	<b>2.76</b>	<b>Satisfactory</b>	

### 1.3 Cosmetology

Table 3 presents the performance of the students in Cosmetology having a mean of 2.54 with the verbal interpretation of Satisfactory. Students demonstrated strength in preparation and product selection but struggled with advanced techniques such as blending, contouring, and maintaining hygiene standards.

**Table 3**  
**Performance in Home Economics in Cosmetology**

Cosmetology	Weighted Mean	Verbal Indicator	Rank
1.Pre pares the client, tools, and materials properly.	3.32	Satisfactory	1
2.Performs skin analysis and selects appropriate	2.65	Satisfactory	2



products.

3. Demonstrates correct techniques in cleansing, steaming, massaging, and masking.	2.41	Fair	5
4. Observes hygiene, sanitation, and safety throughout the procedure.	2.43	Fair	4
5. Selects and applies suitable makeup products for each type.	2.51	Satisfactory	3
6. Demonstrates blending, contouring, and color-matching techniques accurately.	2.32	Fair	6
7. Ensures neatness and enhancement of natural beauty.	2.20	Fair	7
<b>Composite Mean</b>	<b>2.54</b>	<b>Satisfactory</b>	

### 1.4 Textile and Sewing

Table 4 presents the performance of the students in Textile and Sewing having a mean of 2.81 with the verbal interpretation of Satisfactory. Students showed strong foundational knowledge of tools and equipment. However, challenges were observed in stitching accuracy, seam allowance, and workspace organization.

**Table 4**  
**Performance in Home Economics in Textile and Sewing**

Textile and Sewing	Weighted Mean	Verbal Indicator	Rank
1. Identifies sewing tools and their functions correctly.	3.41	Satisfactory	1
2. Demonstrates proper handling and maintenance of tools and machines.	3.20	Satisfactory	2
3. Observes safety and organization in the workspace.	2.65	Satisfactory	4
4. Prepares a labeled display or visual presentation of tools and their uses.	3.10	Satisfactory	3
5. Executes neat and even stitches (running, backstitch, overcast, basting).	2.48	Satisfactory	5
6. Follows seam allowances accurately.	2.43	Fair	6.5
7. Maintains a clean and organized work area.	2.43	Fair	6.5
<b>Composite Mean</b>	<b>2.81</b>	<b>Satisfactory</b>	

## 2. Integration of Laboratory Work

Tables 5, 6, and 7 covers the integration of laboratory work to enhance the performance of students with regards to hands-on workshops, project-based learning tasks, and real-life simulations and demonstrations.

### 2.1 Hands-on Workshops

Table 5 pertains to the integration of laboratory work as to hands-on workshops. The composite mean of 2.64 indicates that the respondents agreed on the integration of hands-on

workshops in home economic lessons. It can be deduced that the respondents agreed on the notion that hands-on workshops for the students in performing tasks like cooking, sewing, or hairstyling correctly with the highest weighted mean of 3.10. Meanwhile making new designs, recipes, or solutions (2.41) was placed to bottom. This resulted to areas were integration of hands-on workshops less evident.

**Table 5**  
**Integration of Laboratory Work as to Hands-on Workshops**

<i>Through integration of Hands-on workshops in Home Economics, I can...</i>	<b>Weighted Mean</b>	<b>Verbal Indicator</b>	<b>Rank</b>
1.perform tasks like cooking, sewing, or hairstyling correctly.	3.10	Agree	1
2.apply what they learned in class to real activities.	2.43	Disagree	4
3.fix mistakes or handle challenges during practical work.	2.54	Agree	7
4.make new designs, recipes, or solutions.	2.41	Disagree	5
5.finish tasks on time.	3.00	Agree	2
6.work well with classmates during group activities.	2.51	Agree	3
7.Feel that I am confident in my skills and able to follow hygiene and safety religiously.	2.54	Agree	6
<b>Composite Mean</b>	<b>2.64</b>	<b>Agree</b>	

## 2.2 Project-based Learning

Table 6 presents the integration of laboratory work to enhance the performance of students with regards to project-based learning. The composite mean of 2.52 signifies a favorable perception on PBL in Home Economics. PBL is perceived to be more effective in developing collaboration, producing tangible results and improving confidence but less efficient in bridging the gap between theory and practice, nurturing creativity and stimulating student ownership. The highest-ranked with weighted mean of 2.59 focus on collaboration and eagerness to finish the assigned task within the time frame. On the other hand, utilizing theoretical knowledge in practical situations (2.41), helping demonstrate creativity and innovation in projects (2.43), and owning learning (2.50) ranks among the bottom three.

**Table 6**  
**Integration of Laboratory Work as to Project-Based Learning**

<i>Through integration of Project – based learning in Home Economics, I can...</i>	<b>Weighted Mean</b>	<b>Verbal Indicator</b>	<b>Rank</b>
1.create a tangible product and present my findings and solutions confidently.	2.58	Agree	2
2.take ownership of my learning.	2.50	Agree	5
3.conduct in-depth investigation of the assigned work.	2.54	Agree	4
4.apply theoretical knowledge in real-life situations.	2.41	Disagree	7
5.demonstrate creativity and innovation in projects.	2.43	Disagree	6



6.gain self - confidence and motivation.	2.61	Agree	3
7.collaborate and finish the assigned project with my groupmates on time.	2.59	Agree	1
<b>Composite Mean</b>	<b>2.52</b>	<b>Agree</b>	

### 2.3 Real-life Simulations and Demonstration.

Table 7 presents the integration of laboratory work to enhance the performance of students with regards to real-life simulations and demonstrations. The overall mean of 2.54, with a verbal indicator "Agree", is an indication that real-life simulations and demonstration in Home Economics are considered as fairly good on average. It illustrates that the students were able to adapt or change the materials/ resources if needed as it obtained the highest mean score of 2.76. The lowest was perform challenging movements/ procedures scored the lowest (2.31) exemplifies the opportunity to reconsider the creation and delivery of simulations and demonstrations in order to better emphasize complex skills, support self-assessment, and increase transferability to practice.

**Table 7**  
**Integration of Laboratory Work as to Real-life Simulations and Demonstrations**

<i>Through integration of Real – Life Simulations and Demonstrations in Home Economics, I can...</i>	<b>Weighted Mean</b>	<b>Verbal Indicator</b>	<b>Rank</b>
1.practice learned skills into my daily life.	2.43	Disagree	5
2.evaluate the situation and decide on the best course of action.	2.67	Agree	3
3.perform the correct procedural steps.	2.69	Agree	2
4.practice new skills and measure my own progress.	2.32	Disagree	6
5.practice challenging movements/ procedures	2.31	Disagree	7
6.master one small task at a time.	2.65	Agree	4
7.modify or adjust the materials/ resources as needed.	2.76	Agree	1
<b>Composite Mean</b>	<b>2.54</b>	<b>Agree</b>	

### 3. Effectiveness of Laboratory Work

Tables 8 and 9 pertains to the level of effectiveness of laboratory works in the performance of teacher education students in terms of performance task/practicum and theoretical assessment.

#### 3.1 Performance Task/Practicum

Table 8 presents the level of effectiveness of laboratory works in terms of performance task/practicum. A composite mean of 2.60 signifies that the integration of laboratory work in Home Economics is generally perceived as effective. Students reported the highest effectiveness in recalling and explaining tasks accurately (3.22). Meanwhile, students perceived the least effective in exhibiting creativity and initiative in performing laboratory tasks (2.43) This indicates a potential need to re-evaluate the design of laboratory activities to incorporate elements that encourage innovation, emphasize the importance of cleanliness and safety, and

provide opportunities for students to practice effective time management strategies.

**Table 8**  
**Effectiveness of Laboratory Work in terms of Performance Task/ Practicum**

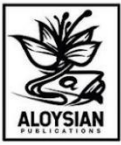
<i>Through the integration of laboratory work in Home Economics, I can.....</i>	<b>Weighted Mean</b>	<b>Verbal Indicator</b>	<b>Rank</b>
1. recall and explain tasks with accuracy and efficiency.	3.22	Effective	1
2. demonstrate mastery of skills learned through practice.	2.62	Effective	2
3. apply correct procedures during hands-on activities.	2.54	Effective	3
4. complete assigned projects and outputs within the given time.	2.46	Least Effective	6
5. exhibit creativity and initiative in performing laboratory tasks.	2.43	Least Effective	7
6. show confidence and independence while performing practicum activities.	2.50	Effective	4
7. maintain cleanliness, safety, and orderliness in laboratory performance.	2.47	Least Effective	5
<b>Composite Mean</b>	<b>2.60</b>	<b>Effective</b>	

### 3.2 Theoretical Assessment

Table 9 presents the level of effectiveness of laboratory works in terms of theoretical assessment. It can be gleaned from Table 9 that through laboratory works activities for recalling and explaining theoretical principles were seen effective as it obtained the highest mean of 3.12. On the other hand, students consider that the least effective learning experiences were to apply learned theories in practical problems (2.43). The low scores necessitate to closer look into theory with practical problem solving and more actively encourage students to critically analyze the relationship between theory and practice, including lifting opportunities for students to show what they understand in different modes of assessment.

**Table 9**  
**Effectiveness of Laboratory Work in terms of Theoretical Assessment**

<i>Through the integration of laboratory work in Home Economics, I can.....</i>	<b>Weighted Mean</b>	<b>Verbal Indicator</b>	<b>Rank</b>
1. recall and explain the theoretical concepts related to laboratory work.	3.12	Effective	1
2. analyze the connection between theory and practice.	2.52	Effective	6
3. answer written or oral tests based on laboratory experience.	2.54	Effective	5
4. demonstrate understanding of safety protocols and scientific principles.	2.76	Effective	4
5. apply learned theories to solve practical problems.	2.43	Least Effective	7
6. evaluate laboratory results using theoretical knowledge.	3.00	Effective	2
7. integrate classroom lessons in performing laboratory-based assessments.	2.97	Effective	3
<b>Composite Mean</b>	<b>2.76</b>	<b>Effective</b>	



#### 4. Challenges Encountered

Table 10 presents the challenges the respondents encountered in the utilization of laboratory works in home economics. The composite mean of 2.72, verbal indicator being "Encountered" reflects the fact that several challenges are affecting how laboratories are effectively used. The main challenges are related to constrained resources, safety and hygiene practice adherence, the gap between theory and practice. It is important to address these challenges, in order to improve the quality and effectiveness of lab experiences. The foreseen challenges that the students encountered on the use of laboratory work are lack of budget and resources (3.21). While challenge of time constraints (2.42) was acknowledged as impacting laboratory work, the data suggests they are perceived as less significant obstacles compared to funding limitations, safety concerns, and the disconnect between theory and practice.

**Table 10**  
**Challenges Encountered in Utilization of Laboratory Works**

Indicators	Weighted Mean	Verbal Indicator
1. Lack of fully equipped laboratories.	2.53	Encountered
2. Insufficient or outdated tools and materials.	2.56	Encountered
3. Budget and resource limitations.	3.21	Encountered
4. Large class sizes limiting to individual attention.	2.49	Least Encountered
5. Time constraints due to packed academic schedules.	2.42	Least Encountered
6. Difficulty integrating theory and practice	3.00	Encountered
7. Safety and hygiene compliance issues.	3.12	Encountered
8. Limited teacher expertise or training	2.76	Encountered
9. Lack of motivation and interest on the subject	2.43	Encountered
<b>Composite Mean</b>	<b>2.72</b>	<b>Encountered</b>

#### 5. Proposed Job Shadowing Program

Based on the results, job shadowing is an attractive option for mitigating the issues surrounding laboratory work in Home Economics. It will allow students to actually see and experience how theory becomes practice, compare actual resource use with those demanded by school-based initiatives, and explore hazard control as it is practiced on-site. Unlike the classroom, job shadowing puts them on the front lines with work and in a real-world experience so they can see what professionals face up close and personal. It is expected that these experiences will create a more holistic understanding for students, develop critical and creative thinking skills and foster appreciation for the application of Home Economics education to future careers and real-life.

With that the researcher proposed the **Realistic Experiences for Actual Learning (REAL) Program** that encapsulates idea effectively, highlighting the importance of authenticity and relevance in the learning process. Learning is most effective when it mirrors real-life situations. This means providing opportunities for students to engage in tasks, projects, and simulations that closely resemble what they will encounter in their future careers or daily lives.



The learning experience that goes beyond rote memorization and fosters deep understanding, critical thinking, and problem-solving skills. It's about students being able to apply their knowledge and skills in meaningful ways, rather than simply reciting facts or following procedures blindly.

REAL Program could contribute to addressing issues in Home Economics, where laboratory work is fraught with challenges like shortage of resources, safety issues or theory practice gap. Through the opportunity of observing professionals in fields associated with their vocation, job shadowing programs promote creative problem solving, safety-mindedness and help foster a direct link between what is being taught in the classroom and how it will be used outdoors. The purpose of the three job shadowing schemes below is to address these problems and to help improve the efficiency of Home Economics education through targeted educational experiences.

## Discussion

The findings affirm the importance of laboratory work as an effective instructional strategy in Home Economics education. Consistent with Kolb's Experiential Learning Theory, students learn best when actively engaged in hands-on activities that allow them to apply theoretical knowledge.

The satisfactory performance across all areas suggests that laboratory work contributes positively to skill acquisition and student engagement. Similar findings were reported by Cahyani and Cahyono (2021), who emphasized that experiential learning enhances self-efficacy and academic performance. Likewise, Budhai and Skipwith (2021) highlighted the role of hands-on activities in improving comprehension and retention in technical-vocational subjects.

However, the observed gaps in creativity, problem-solving, and application of knowledge indicate limitations in the current implementation of laboratory activities. These challenges may be attributed to insufficient resources, limited exposure to real-world scenarios, and inadequate time for practice. Mau (2024) emphasized that structured and continuous practical training is essential to fully develop students' competencies.

The findings suggest the need for enhanced instructional strategies that go beyond basic laboratory activities and incorporate real-life experiences, collaborative learning, and reflective practices.

## Conclusion

This study concludes that laboratory work significantly enhances the performance of BTVTEd students in Home Economics. While students demonstrated satisfactory performance,



there is a need to improve higher-order skills such as creativity, problem-solving, and application of theoretical knowledge.

To address these gaps, educational institutions should strengthen laboratory facilities, provide adequate resources, and integrate structured experiential learning programs.

### **REAL Program (Proposed Intervention)**

The Realistic Experiences for Actual Learning (REAL) Program is designed to enhance experiential learning through authentic and industry-based activities.

#### Key Components:

- Job Shadowing – Students observe professionals in real work environments
- Laboratory Immersion – Regular structured hands-on sessions
- Project-Based Tasks – Real-world problem-solving activities
- Reflective Journals – Students document learning experiences
- Performance Assessment – Skills evaluation using rubrics

#### Expected Outcomes:

- Improved technical and practical skills
- Enhanced confidence and self-efficacy
- Better application of theory to practice
- Increased readiness for employment

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