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Validated Modular Learning in TLE Dressmaking: Exhibiting its Effects on the Academic and Hands-on Competency of Students

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Abstract:

This research evaluated the effectiveness of developed dressmaking learning modules in improving the academic performance and hands-on competencies of Junior High School learners under the Technical-Vocational- Livelihood (TVL) Garments specialization in selected public secondary schools in the South District, Division of Mandaue City, for School Year 2024–2025. The modules were assessed based on content quality, clarity of instructions, alignment with curriculum standards, and usability in both classroom and modular settings. Findings revealed that learners demonstrated significant improvement in their academic achievement, progressing from an Average Mastery Level in the pretest (M = 3.7) to a Level of Closely Approximating Mastery in the posttest (M = 8.2). Hands-on performance also increased notably, with learners achieving Excellent competence in garment construction and Very Satisfactory ratings in basic sewing techniques and creativity. Statistical analysis confirmed a significant difference between pre- and post-implementation performance, validating the modules as an instructional intervention. The study further revealed that while both teachers and learners rated the modules as Strongly Agree in terms of acceptability, challenges such as limited access to sewing machines, insufficient materials, and reduced motivation in modular learning environments persisted. These findings underscore the importance of providing resource support and structured facilitation to maximize module utilization. It is recommended that schools institutionalize the developed modules, provide sewing kits or practice hubs, and integrate feedback mechanisms and video-based demonstrations. The study concludes that well- designed learning modules, when paired with adequate support systems, can significantly enhance both theoretical understanding and practical competency in TVL programs.

Keywords: Development Education, modular learning, academic and performance skills, Descriptive Method, Mandaue City, Philippines.

CHAPTER 1

THE PROBLEM AND ITS RESEARCH DESIGN

INTRODUCTION

Rationale of the Study

Modular learning, characterized by self-contained instructional materials designed for independent or guided study, has gained traction as a flexible approach to instruction across various educational settings (Balolong et al., 2021). While it has been recognized for promoting continuity of learning and accommodating diverse learner needs, its effectiveness in technical-vocational programs—where hands-on skills are integral—remains uncertain. Global perspectives on technical education emphasize that programs like dressmaking must not only deliver theoretical knowledge but also ensure mastery of practical competencies.

In the Philippines, the Department of Education (DepEd) has long promoted modular distance learning as one of the most accessible and inclusive delivery modalities, especially for learners with limited access to digital technologies (Serrano & Farin, 2022). Within the K to 12 curriculum, the Technical- Vocational-Livelihood (TVL) strand aims to prepare learners for employment or entrepreneurship through a combination of academic and technical training. However, questions persist on whether modular learning alone can achieve these dual outcomes, especially in efficient subjects such as dressmaking.

Existing local research provides valuable insights. Serrano and Farin (2022), in their study in Zambales, found that modular learning contributes positively to academic achievement, although many learners reported challenges in coping without real-time instructional guidance. Palmerola et al. (2023) compared modular, synchronous, and asynchronous learning modalities and revealed significant variances in student performance across delivery modes. These findings confirm that modular learning influences academic outcomes; however, they seldom explore its effectiveness in developing technical or performance-based skills.

Efforts to develop high-quality dressmaking modules have also been made. Madrideo (2023) assessed a supplementary instructional module in dressmaking and found it to be highly usable and adaptable. Similarly, Villareal (2023) developed and validated a dressmaking module that received favorable evaluations from both educators and industry practitioners in terms of structure and relevance. Despite these encouraging findings regarding usability and instructional quality, few studies have examined whether such modules genuinely improve learners' technical proficiency in garment construction.

Studies have also highlighted broader constraints associated with modular learning. Bustillo and Aguilos (2022) reported that learners often struggle with delayed feedback, limited access to tools and materials, and inconsistent distribution of learning kits—issues that are more pronounced in practical subjects. Sumbilon and Valmorida (2023) further emphasized that parental support, instructional strategies, and student self-efficacy have a significant influence on learner performance in modular setups. However, much of this literature focuses on academic performance rather than skill acquisition.

In Central Visayas (Region VII), TVL education continues to be strengthened; however, empirical studies on the impact of modular learning on technical skill development remain limited. Cebu's growing garment and creative industries create a pressing need for competent TVL graduates,

particularly in the field of dressmaking. However, it is still unclear whether students trained primarily through modular learning are adequately prepared to meet labor market demands. In urbanized localities such as Mandaue City, schools may have better access to resources. However, TVL learners still face barriers related to the availability of equipment, materials, and close supervision. The self-paced nature of modular learning often limits opportunities for demonstrations and guided practice— elements vital to skill formation in dressmaking.

The implementation of modular learning in the TVL programs of South District schools in Mandaue City, therefore, presents crucial concerns. While learners can accomplish written tasks and worksheet-based outputs, teachers report uncertainty regarding the accuracy and depth of students' actual competencies in pattern drafting, sewing techniques, and garment construction. This disconnect suggests that academic compliance does not always equate to mastery of the skill.

Although earlier studies have examined modular learning in relation to academic achievement (Balolong et al., 2021; Serrano & Farin, 2022; Palmerola et al., 2023) and module design quality (Madrideo, 2023; Villareal, 2023), evidence remains scarce on its capacity to foster technical proficiency among TVL learners, particularly in dressmaking. This gap highlights the need to assess modular instruction not only as an academic tool but also as a mechanism for performance- based learning.

This study, titled "Modular Learning in Dressmaking: Effects on the Academic and Skills Performance of Learners," addresses this research niche by examining both academic and skill outcomes among TVL learners in the South District of Mandaue City. By situating modular learning within global, national, regional, and local contexts, the study aims to provide empirical insights on how modular instruction can be strengthened to meet the twin demands of academic excellence and technical competence. The results will inform teachers, school leaders, and policymakers in refining modular strategies to better prepare TVL students for real-world employment and industry standards.

Theoretical Background

This study is based on various learning theories and policy frameworks that elucidate the potential impacts of modular learning in dressmaking on the academic and skills performance of Technical-Vocational-Livelihood (TVL) strand learners. This theoretical framework clarifies how students acquire knowledge and technical skills through modular instruction, along with the impact of institutional policies and national mandates on its implementation in the Philippine context.

Moore's Transactional Distance Theory (as referenced in Moore, 2020) posits that distance education encompasses not only physical separation but also pedagogical factors, wherein the extent of structure, dialogue, and learner autonomy influences educational outcomes. In modular dressmaking education, the lack of ongoing interaction between teachers and students may increase transactional distance, which could hurt academic performance and skill acquisition. This theory is crucial for understanding how the structure of a module and the learner's autonomy influence their academic performance. This theory suggests that distance learning encompasses not only physical separation but also differences in teaching style, communication, and student autonomy.

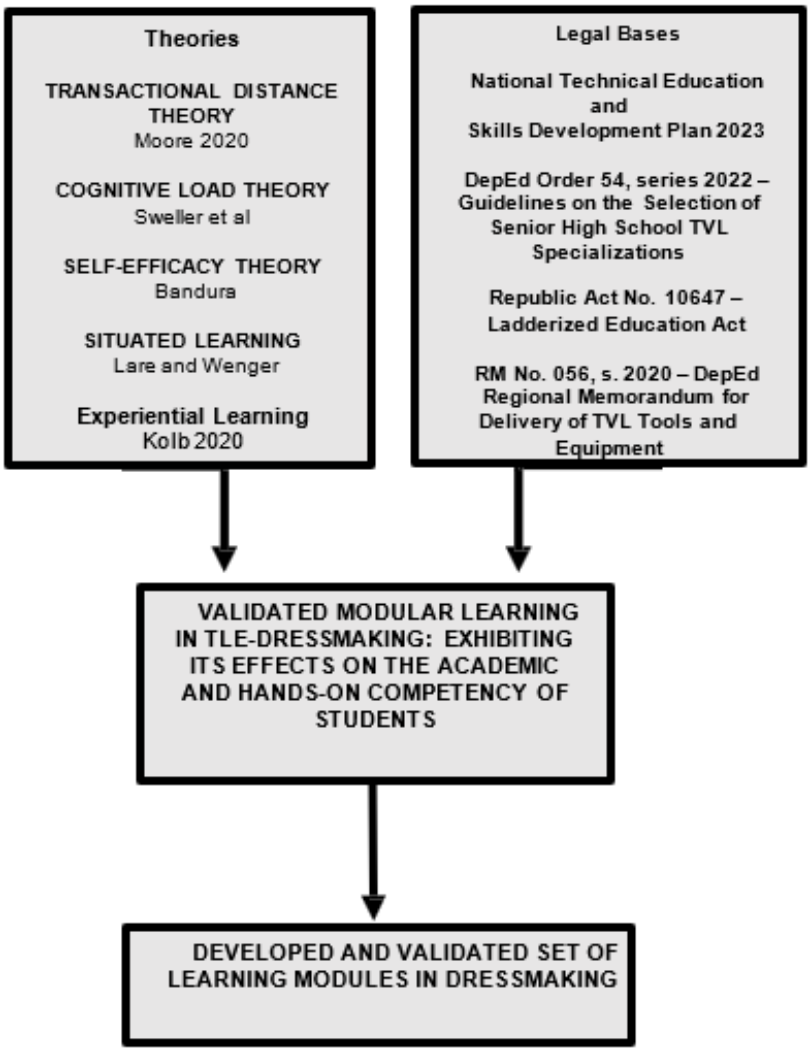

Figure 1 Theoretical Framework

Modular learning often makes things more organized, but it also makes it harder to communicate with teachers in real-time. In dressmaking, a helpful skill, a considerable transactional distance can make it hard to learn if the learner is not given enough freedom. Using TDT makes it easier to examine how structure, dialogue, and autonomy interact to influence academic and skill performance.

Bloom's Taxonomy has also been widely used to measure students' progress in the cognitive, affective, and psychomotor domains. According to Saflor et al. (2022), modular learning should not only help students retain what they learn but also enable them to develop higher-order skills, such as application and creation. Bloom's taxonomy is critical in dressmaking because it includes both theoretical knowledge and psychomotor skills. This helps students transition from merely memorizing to actually creating clothes.

A way to group learning goals into cognitive, affective, and psychomotor domains, usually in a hierarchy (Remember → Understand → Apply → Analyze → Evaluate → Create). Bloom's Taxonomy has been around since 1956, but many recent studies, such as Saflor et al. (2022), still utilize it to measure academic performance in modular and distance learning settings.

Dressmaking involves both cognitive understanding and psychomotor skills, including sewing, creating patterns, and assembling garments. Bloom's Taxonomy makes it easier to create modules

and tests that focus on skill acquisition at different levels, especially the higher ones (Apply, Create), rather than just memory or comprehension.

Cognitive Load Theory (Sweller et al., 2020) is another important idea. It states that teaching materials should be designed in a way that they do not overload students' working memory. In modular dressmaking, poorly organized instructions and a lack of support can increase cognitive load, making it harder to understand the theory and perform the technical work. To achieve the best learning results, well-structured modules must strike a balance between being complex and precise.

Looks at the limits of working memory and how good instructional design can lower extraneous load, control intrinsic load, and raise germane load. Recent research on online and modular learning investigates the impact of cognitive load on memory retention and performance. A recent study in the Philippines examined the impact of cognitive load on memory retention in accounting students who learn online.

If the order of the modules in dressmaking is wrong or the instructions are unclear, students may feel overwhelmed by the amount of information they need to learn (skills + theory). Good module design (clear instructions, organized tasks, and enough examples) can lower cognitive load and improve both academic and skill performance.

Recent research (Rincón-Gallardo, 2021) supports Bandura's Self- Efficacy Theory, which posits that students' confidence in their abilities has a significant impact on their motivation and performance. In modular dressmaking, students who believe in their own abilities are more likely to continue working on their sewing skills and complete projects with minimal assistance, which enhances their skill performance. This demonstrates the importance of having modules and support systems that help students feel more confident and stay committed.

The students' belief in their ability to do things affects their motivation and success. Recent research on TVL modularity has found that self-efficacy affects performance. In modular dressmaking classes, students who are more confident in their abilities are more likely to persevere when things get tough, improve their skills, ask for feedback, and, as a result, achieve better grades and skills. Teachers can create modules or support systems to help students feel more capable and confident.

Constructivism and Constructionism provide a strong framework for this research. Orey (2021) states that students learn through hands-on experiences and personal interactions. In dressmaking, students learn best when modules encourage them to explore, experiment, and reflect on their work, rather than passively receiving information.

People learn when they build mental frameworks, utilize what they already know to understand concepts better, and actively engage with relevant resources.

Papert's Constructionism also emphasizes the importance of learning by doing and creating things.

Dressmaking is a highly efficient field, and the best way for students to learn is through hands-on experience. Modular learning should include tasks that enable students to build, practice, reflect on, and receive feedback on their work. Constructivist methods support modules that allow students to try things out, reflect on their work, and correct mistakes.

According to Situated Learning Theory (Lave & Wenger, 2020), the most effective way to learn is through real-life situations, such as performing real-world sewing tasks. This illustrates the importance of learning activities that are grounded in real-life situations and allow you to practice what you have learned. In dressmaking, real-life situations include real sewing labs, workshops, and materials. Modular learning that separates practice from real-life situations may make skills less effective. Adding module tasks that mimic real-world practice, such as project-based assignments and collaborative work with peers, may help address this issue.

Kolb's Experiential Learning Theory (2020) supports the idea that learning new skills follows a cycle of experience, reflection, conceptualization, and experimentation. Because of this, dressmaking modules should include reflective activities and iterative practice, allowing students to learn from their mistakes and improve their skills.

Students learn how to sew in cycles: they sew (experience), receive feedback and observations, learn theory or technique, and then apply what they have learned to new projects. Even when there is less face-to-face interaction, modular learning must be able to replicate or support these stages.

The Universal Design for Learning (UDL) framework (CAST, 2021) encourages flexible and welcoming teaching design. For TVL students from diverse backgrounds, UDL ensures that dressmaking modules are easy to understand, engaging, and tailored to the individual learning needs of each student. Students in Technical-Vocational-Livelihood (TVL) programs with modular learning have different needs, such as insufficient materials or supervision. Using UDL makes modules more open to everyone. Giving instructions in different ways, making it easier for students to show off their skills, and keeping their interest.

Modern ideas, such as Connectivism (Siemens, 2020), emphasize the importance of networks and digital resources in learning. Modular learning is often conducted with print materials; however, students can enhance their skills and knowledge by utilizing online sewing tutorials, collaborating with peers, and exploring digital design platforms.

Printed modules are often used in modular learning, but they can also use digital resources, peer or online forums, and support networks. Connectivism suggests that networks can facilitate the acquisition of new skills, such as those learned through video tutorials, peer collaboration, and online feedback.

Lastly, the frameworks on 21st Century Skills for TVET (ADB, 2021) emphasize that technical-vocational education should extend beyond merely teaching individuals how to perform tasks effectively. It should also teach them how to be creative, solve problems, and adapt—skills that are directly useful for dressmaking, both as a job and a business.

Dressmaking as a job gives you both technical skills and opportunities to start your own business (creativity, design, and innovation). A modular learning system should help students enhance their technical skills and acquire essential 21st-century skills. Skill performance should be evaluated based on creative design, problem-solving (such as correcting mistakes), and other key factors.

The legal and policy framework makes this study even more important. The National Technical Education and Skills Development Plan (NTESDP) 2023– 2028 (TESDA, 2023) sets the national standards for Technical and Vocational Education and Training (TVET). It emphasizes that training should be flexible and tailored to the industry's specific needs.

This document outlines the plan for Philippine Technical and Vocational Education and Training (TVET). It emphasizes the concept of "responsive and flexible TVET," ensuring that TVET skills align with those required in the industry, and helping individuals recover from the impact of the COVID-19 pandemic. It gives guidance on how to improve technical-vocational education, including TVL strands, in terms of content, delivery, and assessment. It supports research that examines how various learning approaches, such as modular methods, facilitate the acquisition of academic and technical proficiency.

Similarly, DepEd Order 54, s. 2022 states that TVL specializations, such as dressmaking, should be chosen strategically to meet the needs of both students and the local community. These rules demonstrate the importance of offering modular education that significantly enhances technical skills.

This directive outlines the process by which schools select TVL specializations to offer, considering factors such as capacity, relevance, student preferences, and local and national development priorities. It has an impact on the choice of dressmaking specialization, the allocation of resources, and may even influence the implementation of modules and skills training.

The Ladderized Education Act (RA 10647) is important because it links TVET to higher education. This means that learning skills through modular instruction is essential for advancing in school and securing a job.

Strengthens the link between Technical-Vocational Education and Training (TVET) and higher education, facilitating the transfer of credits and other related activities. It emphasizes the importance of TVL students acquiring skills that are both recognizable and transferable. This demonstrates the importance of quality and the effectiveness of modular learning. Although it is not new, it remains an important law that emphasizes the importance of skills and technical development.

This policy states that TVL programs must provide students with the necessary tools and equipment to access the right resources for learning new skills. When making clothes, you need tools and equipment to do the practical skills. This legal basis makes sure that modular learning understands the need for real, hands-on resources.

In addition, DepEd Regional Memorandum No. 056, s.2020 stresses the importance of tools and equipment in TVL programs, recognizing that effective modular instruction in dressmaking requires access to sewing machines, fabrics, and other materials. Recent studies on the effectiveness of modular learning (for example, Cruz & Cruz, 2022) reveal both its advantages and disadvantages. This suggests that we examine how it impacts skill-based programs, such as dressmaking.

This is a study, not a law, but its results may be important to policy discussions. It demonstrates that modular learning can enhance academics and reveals its limitations, which could inform legal and policy suggestions.

This theoretical framework combines ten modern learning theories with five legal and policy foundations, which together support the study. Theories explain how modular learning affects academic and technical skills, and legal frameworks confirm that it is necessary in Philippine education. All these perspectives emphasize the importance of evaluating the effectiveness of modular learning in dressmaking. This links academic success with the ability to apply skills in real-life situations for TVL strand students.

THE PROBLEM

Statement of the Problem

This research focused on the validated competencies in TLE Dressmaking for improving the academic performance and hands-on competencies for Junior High School learners under the Technical-Vocational-Livelihood Dressmaking strand in the select public secondary schools in the South District Division of Mandaue City, during school year 2024-2025, towards the adoption.

Specifically, this study sought to answer the following questions:

1. What is the demographic profile of the respondent groups in terms of:

1.1 teachers

1.1.1 age and gender,

1.2.2 highest educational attainment,

1.2.3 length of teaching experience,

1.2.4 number of professional development trainings attended,

1.2 learners

1.2.1 age and gender,

1.2.2 grade level,

1.2.3 prior exposure to dressmaking skills, and

1.2.4 access to learning resources and materials at home?

2. What is the level of acceptability of the developed dressmaking modules as evaluated by experts and teachers in terms of:

2.1 content quality and accuracy,

2.2 clarity of instructions and organization,

2.3 alignment with curriculum standards and competencies, and

2.4 usability and practicality in classroom and modular settings?

3. What is the level of hands-on competency of students using the modules in terms of:

3.1 basic sewing techniques,

3.2 garment construction and finishing, and

3.3 creativity and craftsmanship as evaluated using performance rubrics?

4. Is there a significant difference between learners' academic performance and hands-on competency before and after the implementation of the developed modules?

5. What challenges do learners and teachers encounter in using the developed TVL Dressmaking modules in modular learning?

6. Based on the findings, what validated set of TVL-Dressmaking learning modules can be adopted to enhance learners' academic performance and hands-on competencies in the TVL strand?

Null Hypotheses

H01: There is no significant difference between learners' academic performance and hands-on competence before and after the implementation of the developed modules.

Significance of Study

The objective of this study was to develop and validate a series of learning modules in Dressmaking and to evaluate their impact on the academic performance and practical skills of Senior High School students in the Technical- Vocational-Livelihood (TVL) strand. The study's findings were advantageous to the subsequent groups:

Department of Education (DepEd). The results supported DepEd's efforts to improve the K to 12 TVL track by providing them with a validated teaching tool in Dressmaking. The modules served as the basis for enhancing the implementation of the curriculum, ensuring that students acquired both academic and practical skills that met TESDA standards. The study further supported DepEd's efforts to implement competency-based education, modular learning methods, and skills development programs that align with the MATATAG agenda.

Education Policymakers. The findings provided policymakers with empirical evidence regarding the importance of validated, skills-oriented learning modules in Technical and Vocational Education and Training (TVET). The study emphasized the importance of instructional materials

tailored to specific situations and industries, and that effectively linked theory to practice. Policymakers could use the results to inform their decisions on resource allocation, curriculum improvement, and ensuring the consistent use of validated modules across all TVL specializations.

Curriculum Planners. This study is significant as it provides a structured and contextual intervention designed to enhance the technical and entrepreneurial competencies of students in the TVL Dressmaking strand. The study develops practical learning modules and competency-based tools that equip students with confidence and skills aligned with industry standards, crucial for future employment or self-sustaining livelihoods. It helps teachers by providing a standard and flexible way to plan lessons, grade students, and manage the classroom. The results provide curriculum planners with important information that will help them improve the sequence of competencies, adjust the scope of content, and ensure that everything aligns with DepEd and TESDA standards. School leaders can use the results to improve TVL programs by better managing resources, supervising students effectively, and fostering connections with local businesses. This study benefits the larger community by training young people who can assist local tailoring businesses and contribute to a more stable economy.

School Administrators. School principals and program coordinators could use the validated modules as extra teaching tools for Dressmaking classes. The study identified gaps in current learning materials and implemented changes that improved teaching and learning. It also provided administrators with proof to support their requests for additional resources, such as sewing machines, materials, and teacher training.

Teachers. Dressmaking teachers found that structured and easy-to-use modules made it easier to teach, reduced prep time, and set clear goals for students' performance. The modules were practical for both classroom-based and modular teaching approaches. The results also encouraged teachers to adopt evidence-based methods that helped students improve in both academic and hands-on skills.

Learners. The study mainly helped the students. Learners received coherent, practical, and curriculum-aligned materials through validated modules, which helped them better understand dressmaking concepts and improve their technical skills. The modules encouraged students to learn independently, be creative, and develop their skills, all of which are essential for securing a job or starting their own business.

Parents/ Guardians. Parents indirectly benefited by seeing their children's academic and practical skills improve. Structured learning materials made it easier for students to learn at home and increased their motivation to do so. As a result, parents felt more confident that their children were acquiring skills that would help them secure jobs and support their families in the future.

Stakeholders. Local clothing stores, sewing businesses, and industry partners all benefited from knowing that students were being taught according to industry standards. The results showed that schools and businesses should collaborate more on workforce development programs.

Prospective Researchers. This study yielded foundational data and a validated framework for developing instructional modules in Technical and Vocational Education and Training (TVET). It served as a guide for researchers who want to learn more about validating modules, testing skills, or using technology in skills-based teaching.

THE RESEARCH METHODOLOGY

This section discusses the research methodology employed in the study. It encompassed the employed methodology, the study's progression, the research setting, the participants, the research instruments, the data collection procedures, the statistical analysis, the scoring methods, and the operational definitions of terms.

Design

This study utilized a quantitative descriptive-experimental research design to investigate the development, validation, and efficacy of learning modules in Dressmaking, as well as their influence on the academic performance and practical skills of Junior High School students within the TVL strand. Creswell and Creswell (2021) argue that descriptive-experimental research is well-suited for educational contexts, as it enables the characterization of current conditions while evaluating the impact of an intervention under controlled variables. This design enabled the researchers to record initial performance, implement the intervention (modules), and evaluate progress in an unbiased manner.

The study's participants were TVL learners enrolled in Dressmaking specialization classes at select public secondary schools in Mandaue City's South District. TVL-Dressmaking teachers were involved in the validation stage to ensure that the modules were accurate, functional, and met the industry's needs.

For data collection, we utilized a modified and validated questionnaire, along with performance-based assessment tools. The questionnaire collected information about the learners' demographics, their perceptions of the modules, and the problems they encountered with the modular learning approach. Written tests were used to assess academic performance, while practical dressmaking tasks were employed to evaluate technical skills. In accordance with Ary et al. (2020), the amalgamation of descriptive and experimental components enhanced the credibility of findings by merging contextual viewpoints with quantifiable results.

The Delphi technique was employed to validate the modules. TVL teachers, subject experts, and industry professionals reviewed the materials to ensure they were relevant, straightforward, and easy to use. A pretest-posttest methodology was employed to assess the enhancements in learners' academic and technical performance following their engagement with the validated modules. We gathered baseline data before starting the project and did post-assessments after it was finished. Descriptive statistics and paired t-tests were used to look at the data.

This design was particularly beneficial for Mandaue City's TVL program, as it provided real-world evidence that structured modules can enhance both academic learning and hands-on skills in modular and self-paced learning environments.

Flow of the Study

This study commenced with the identification of the primary research issue: the need to enhance the academic performance and practical skills of Junior High School learners enrolled in the Technical-Vocational-Livelihood (TVL) strand in Dressmaking. It proceeded by establishing a theoretical and conceptual framework grounded in competency-based education, constructivist learning principles, and the Department of Education (DepEd) guidelines for implementing TVL programs. This framework emphasized the significance of validated instructional modules as tools for strengthening learners' proficiency in both theoretical concepts and practical skills in dressmaking. Guided by this foundation, a systematic set of research questions was formulated to examine the development, validation, and effectiveness of the learning modules.

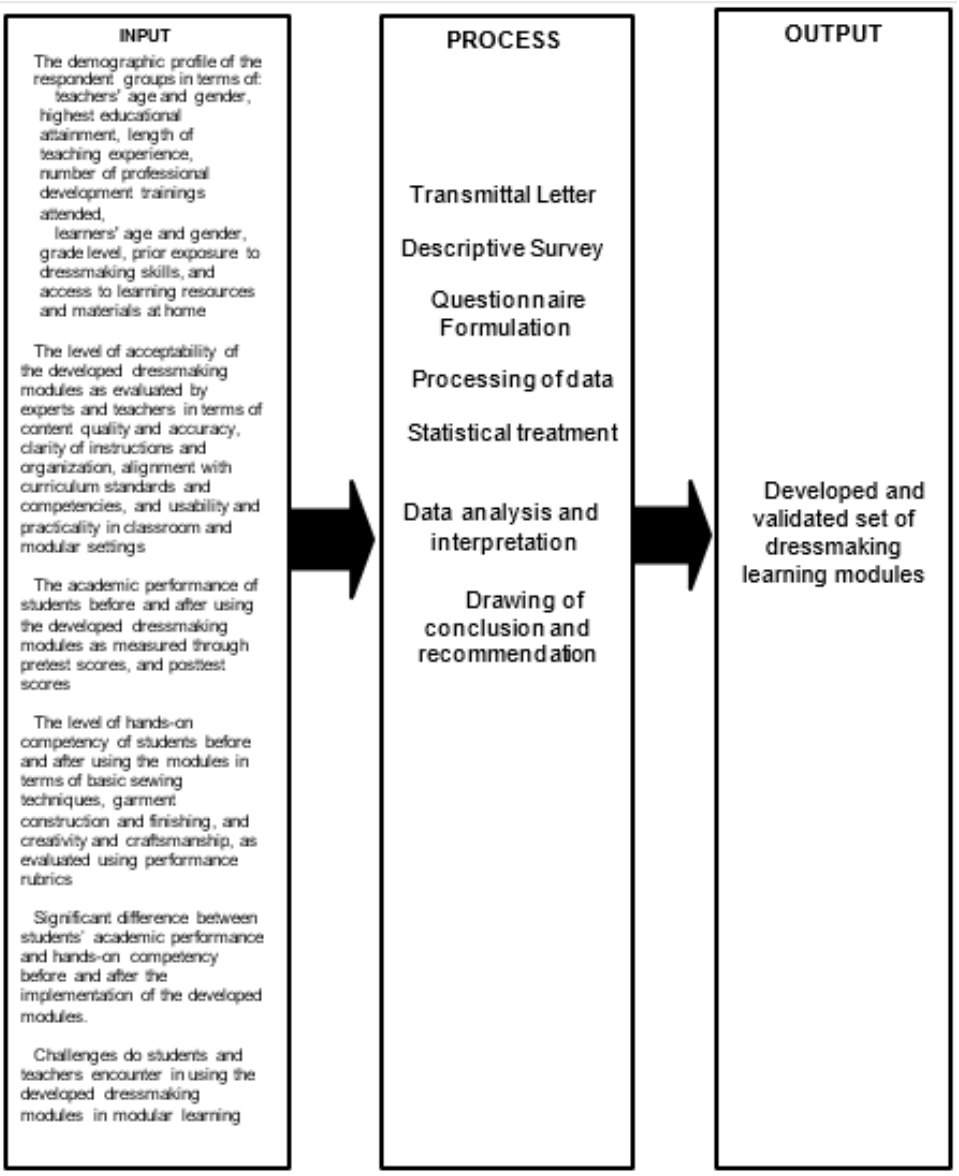

Figure 2 Flow of the Study

The preliminary phase of the study involved profiling the participants, which included teachers and learners from selected public secondary schools in the South District, Division of Mandaue City. Demographic information of teachers—such as age, gender, highest educational attainment, length of teaching experience, and number of professional development sessions attended—was gathered. Likewise, learners were profiled based on age, gender, grade level, prior exposure to dressmaking, and availability of learning resources at home. This profiling provided contextual grounding and illustrated the diversity of experiences and competencies among respondents.

The next phase focused on validating the developed dressmaking modules. Educators and subject-matter experts evaluated the materials in terms of content accuracy, clarity of instructions, curriculum alignment, and usability in both modular and classroom-based settings. Their evaluations ensured that the modules were academically sound and responsive to learner needs.

Following validation, the study proceeded to the implementation stage, in which junior high school learners utilized the modules in their dressmaking classes. To determine the impact of the modules on academic performance, learners were administered pretests before exposure to the modules and

posttests after completing the lessons. The comparison of scores provided evidence of academic improvement.

Simultaneously, learners' practical competencies were assessed through performance rubrics that evaluated basic sewing techniques, garment construction and finishing, as well as creativity and craftsmanship. These assessments were conducted before and after the module implementation to determine the extent of skill enhancement and to demonstrate the effectiveness of the modules in linking theory with practice.

Subsequently, statistical analyses were applied to determine whether significant differences existed in learners' academic performance and practical competencies before and after the intervention. This quantitative treatment ensured objectivity in evaluating the modules' effectiveness.

Another vital phase of the study involved identifying the challenges encountered by both learners and teachers in utilizing the modules. Difficulties related to resource availability, clarity of instructions, time constraints, and technical barriers in modular learning were documented to provide a realistic account of implementation issues.

The final phase integrated the findings from validation, implementation, performance assessments, and identified challenges. These findings served as the basis for establishing a comprehensive and validated series of dressmaking learning modules that can improve both academic achievement and practical proficiency. The study further presented a model that could be replicated across other TVL specializations and incorporated into broader curriculum development initiatives.

Questionnaires were distributed to respondents, and the retrieved answers were tallied and tabulated. Statistical treatments were then applied to derive the intended results. The data were carefully analyzed to formulate interpretations, conclusions, and recommendations. The schematic diagram in Figure 2 served as a visual representation to facilitate understanding of the research process.

Environment

The research was conducted at Cabancalan National High School, and Subangdaku Technical and Vocational School.

Cabancalan National High School. This research study and observation were conducted at the Cabancalan National High School (CNHS) where the researcher is currently employed. It is in Manuel Quezon Street, Cabancalan, Mandaue City, Cebu. It was established on June 1, 1985.

Figure 3. Map of Mandaue City

The school in question was one of the top-performing schools in Mandaue City. Catherine C. Requilme currently leads the program and offers curricula for Junior High and Senior High School. The school had one (1) head teacher, one hundred thirteen (113) teaching staff members, and seven (6) non-teaching staff personnel.

There were many students at the school. Twelve (12) sections per grade level are divided into two periods, with a total enrollment of two thousand seventy- two (2,072) pupils in Junior High School. Moreover, there are four hundred sixty- four (464) students in Senior High School, with four sections in Grade 11 and five sections in Grade 12.

In addition, the school's Senior High Curriculum included the following strands: General Academic, Humanities and Social Sciences, Technical Vocational, and Livelihood. The school is equipped with a working library, three computer laboratories, a cultural center, and science and home economics laboratories.

Subangdaku Technical Vocational School. In SY 2006-2007, Subangdaku Technical Vocational School implemented the technical vocational curriculum for its first-year entrants. The school acquired tools and equipment from the city government, DepEd, NGOs, and private individuals for specializations in: Baking, Food Trade, Beauty Care, Auto Mechanics, Electrical Installation and Maintenance, Metal Works, and Garments. Classrooms are converted into shops for the students' hands-on activities. Fortunately, the Metal Workshop was adopted by the Aboitiz Construction Group Inc. in their "kauban ta bai" project. The partnership includes consumables, students and teacher training, and tools. The school endorses the graduates to partner industries for employment.

Subangdaku Technical Vocational School has implemented the strengthened technical vocational curriculum since SY 2006-2007. As a vocational school, our goal is to equip our students with the skills necessary to succeed in the workforce. With the ten-hour session per week, and free consumables, the school aims to train the students in their shop specialization so that they can pass the TESDA NC I and NC II assessment.

STVS was selected as a pilot school to model the implementation of the Senior High School Program in Region VII in relation to the K to 12 curricula of the Department of Education.

STVS also offers TVL and ACADEMIC TRACK - GAS for the Senior High School.

Respondents

The sample population was selected using stratified random sampling, ensuring representation across grade levels and gender distribution within the TVL- Dressmaking major. A total of 60 students participated in the study, supported by four Dressmaking teachers from different schools within the South District. This method allowed the researcher to capture diverse perspectives while maintaining the study's representativeness. Table 1 summarizes the distribution of respondents in this study.

Table 1 Distribution of Respondents

Respondents	Teachers	Learners	Total	Percentage (%)
Cabancalan NHS	3	30	33	50.00
Subangdaku Technical Vocational School	3	30	33	50.00
TOTAL	**6**	**60**	**66**	**100.00**

Instrument

The principal instruments for data collection in this study were a structured questionnaire and a performance-based assessment, both of which were adapted and validated from established, expert-designed tools that emphasized the evaluation of instructional materials, Technical-Vocational-Livelihood (TVL) competencies, and modular learning. The instrument comprised five principal sections, each focusing on critical aspects of the experiences of teachers, experts, and Junior High School learners with the developed dressmaking modules.

The initial section of the instrument focused on the demographic characteristics of the respondents. This section gathered data on teachers' age, gender, highest educational qualification, years of teaching experience, and number of professional development trainings attended. The section for learners collected data on age, gender, grade level, previous exposure to dressmaking skills, and availability of learning resources and materials at home. These profiling items were derived from conventional demographic survey methodologies widely utilized in educational research, as noted by Creswell and Creswell (2018) and Gay, Mills, and Airasian (2012).

The second section of the instrument measured the acceptability of the developed dressmaking modules. A 5-point Likert scale ranging from *Strongly Disagree* to Agree Strongly was utilized to assess indicators such as content quality and accuracy, clarity of instructions and organization, alignment with curriculum standards and competencies, and usability in both classroom-based and modular learning contexts. This evaluation framework was modified from the instructional materials validation tools developed by Badayos (2016) and aligned with the Department of Education's Learning Resources Management and Development System (LRMDS) checklist.

The third section evaluated learners' academic performance using a 20- item multiple-choice examination that served as both a pretest and a posttest. The assessment items measured

fundamental dressmaking competencies, including identification and use of sewing tools and equipment, safety practices, fabric selection, sewing techniques (stitches and seams), and procedural steps in garment construction. These items were anchored on the learning competencies specified in the K to 12 Curriculum Guide for TVL–Home Economics (Dressmaking/Tailoring) (DepEd, 2016) and guided by sample assessments from previous TVL-related studies such as Manalo and De Castro (2019).

The fourth section assessed learners' practical competencies through a performance-based rubric administered before and after the module implementation. The rubric evaluated three domains: basic sewing techniques, garment construction and finishing, and creativity and craftsmanship. Its structure was based on the TESDA Training Regulations for Dressmaking NC II (TESDA, 2015) and performance rubric design frameworks from Brookhart (2013). This section ensured that the modules were both theoretically sound and practically practical in fostering technical skills.

The fifth section identified the challenges encountered by both teachers and learners in utilizing the dressmaking modules within a modular learning setup. It consisted of 10 Likert-scale items that addressed constraints such as limited access to sewing machines and tools, insufficient fabric and materials, unclear or complex module instructions, time constraints in completing tasks, limited opportunities for immediate teacher feedback, and difficulties in independent learning. These items were constructed based on frameworks from modular learning challenge studies by Agaton and Cueto (2021) and Lapada et al. (2020). The complete instrument underwent pilot testing and validation. The questionnaire and performance rubrics were initially administered to a small group of TVL–HE teachers and Junior High School learners—who were excluded from the final respondents—to determine clarity and usability. Three experts in dressmaking, education, and research reviewed the instruments for content validity, confirming their alignment with curriculum standards and industry-relevant expectations. Reliability testing using Cronbach's alpha yielded coefficients above 0.80 for the sections assessing module acceptability and challenges, indicating strong internal consistency. The instruments' validity was further supported through their consistency with previous research on instructional module development and competency-based assessments in the TVL track, including works by Manalo and De Castro (2019) and TESDA (2015).

Data Gathering Procedure

To acquire relevant and accurate data for this study, the researcher first secured formal authorization from the Schools Division Superintendent of Mandaue City and the principals of the identified public secondary schools in the South District where the Technical-Vocational-Livelihood (TVL) strand was offered. Upon approval, the researcher coordinated with the designated TVL coordinators and dressmaking teachers to identify the qualified respondents, which included both Junior High School learners enrolled in the TVL–Home Economics strand (Dressmaking) and their subject teachers. Prior to the administration of the instruments, all respondents were fully informed of the purpose of the study and were asked to provide their informed consent. This ensured the ethical conduct of the research by upholding confidentiality, voluntary participation, and data privacy.

The research instruments—composed of a structured questionnaire, a multiple-choice test, and a performance-based rubric—were then administered to the identified participants. Depending on school accessibility, the tools were provided either in printed form or through a secure online platform (such as Google Forms) to maximize participation. The researcher carefully explained the procedures to ensure that respondents clearly understood the instructions and to avoid misinterpretation of the questions. Learners and teachers were given three to five working days to complete the instruments, and timely reminders were issued to maintain a high response rate. For

schools or learners with limited internet access, printed copies of the questionnaires and assessments were distributed and collected manually.

Once retrieved, all responses were thoroughly reviewed, coded, and organized according to the significant variables of the study: demographic profile of respondents, level of acceptability of the developed dressmaking modules, learners' academic performance before and after the intervention, learners' level of hands-on competency, and challenges encountered during the use of the modules. The data were then systematically arranged and prepared for analysis. Throughout the data collection phase, strict measures were observed to ensure the accuracy and honesty of responses. This stage was crucial in establishing the foundation for the subsequent processes of data analysis and interpretation, which ultimately guided the validation and refinement of a set of dressmaking learning modules aimed at improving Junior High School learners' academic performance and technical competencies in the TVL strand.

Statistical Treatment of Data

The data gathered from the respondents were carefully organized and analyzed using appropriate statistical tools to address the research questions of the study. Both descriptive and inferential statistics were employed to provide a comprehensive interpretation of the findings.

For the demographic profile of teachers and learners, frequency counts. Percentages were computed to describe categorical variables such as gender, grade level, educational attainment, and prior exposure to dressmaking skills. For continuous variables such as age and length of teaching experience, the mean and standard deviation were calculated to indicate measures of central tendency and variability.

To determine the level of acceptability of the developed dressmaking modules as evaluated by experts and teachers, weighted mean and standard deviation were computed for each indicator: content quality and accuracy, clarity of instructions and organization, alignment with curriculum standards and competencies, and usability and practicality. The interpretation of the mean scores followed a 5-point Likert scale range to assess the degree of module acceptability.

For learners' academic performance, the mean scores of pretests and posttests were calculated to determine the improvement after exposure to the developed dressmaking modules. To verify whether the observed difference was statistically significant, a paired-samples t-test was conducted. This test was appropriate because it compared the means of two related measures (pretest and posttest performances) within the same group of learners.

For the level of hands-on competency in dressmaking, scores from the performance rubric—covering basic sewing techniques, garment construction and finishing, and creativity and craftsmanship—were summarized using mean and standard deviation. Similar to academic performance, a paired-samples t-test was conducted to determine significant differences between pre-implementation and post-implementation competency levels.

To analyze the challenges encountered by both teachers and learners in using the developed modules, weighted mean and standard deviation were computed for each item in the Likert-scale questionnaire. The results were interpreted using a descriptive scale that reflected the extent of agreement with each identified challenge.

Finally, to holistically address the research questions, all data were processed using Microsoft Excel. This tool enabled accurate computation and clear presentation of the statistical results. The combination of descriptive and inferential statistics ensured that the study not only described the current condition but also provided empirical evidence on the effectiveness of the developed

dressmaking modules in improving the academic performance and hands-on competencies of Junior High School learners in the TVL strand.

Scoring Procedure

The questionnaire items were rated using a 5-point Likert scale to assess the challenges encountered by both teachers and learners in utilizing the developed dressmaking modules. Each response was assigned a corresponding weight, range, category, and verbal interpretation, as shown in the table below:

Weight	Range	Category	Verbal Description
5	4.21 – 5.00	Strongly Agree	The challenge is highly evident and consistently affects learning or module implementation.
4	3.41 – 4.20	Agree	The challenge is generally evident and often affects learning or module implementation.
3	2.61 – 3.40	Neutral	The challenge is moderately evident and sometimes affects learning or module implementation.
2	1.81 – 2.60	Disagree	The challenge is somewhat apparent and rarely impacts learning or module implementation.
1	1.00 – 1.80	Strongly Disagree	The challenge is not evident and does not affect learning or module implementation.

For the academic performance component, the pretest and posttest scores of students were evaluated using a percentage scoring system, where each correct answer was awarded one point. The total raw scores were converted into percentages and described using the following interpretation.

Percentage Score	Descriptive Rating	Verbal Interpretation
90 – 100%	Outstanding	Demonstrates excellent mastery of dressmaking concepts and skills.
80 – 89%	Very Satisfactory	Demonstrates strong mastery with minor errors.
75 – 79%	Satisfactory	Demonstrates adequate mastery, meeting the minimum standard.
70 – 74%	Fairly Satisfactory	Demonstrates partial mastery but needs improvement
Below 70%	Did Not Meet Expectations	Demonstrates minimal mastery and requires significant intervention

For the performance rubric (hands-on dressmaking tasks), scores were assigned based on specific criteria such as sewing techniques, garment construction, and finishing quality. Each criterion was rated on a 4-point scale (4 = Excellent, 3 = Proficient, 2 = Developing, 1 = Beginning). The total scores were averaged to obtain an overall competency rating.

DEFINITION OF TERMS

The following terms were defined operationally as they are used in this study to ensure clarity and consistency in interpretation:

Academic Performance – The measurable outcomes of students' learning, usually expressed through scores, grades, or achievement in assessments.

Pretest Scores – The initial assessment results that measure students' baseline knowledge and skills before using the modules.

Posttest Scores – The assessment results after exposure to the modules indicate learning gains and improvement in knowledge and skills.

Challenges in Using the Developed Dressmaking Modules. The difficulties encountered by both students and teachers may include accessibility of materials, time constraints, clarity of instructions, availability of resources, and varying levels of learner readiness in applying dressmaking competencies.

Developed and Validated Set of Learning Modules in Dressmaking – Instructional materials specifically designed, tested, and evaluated to ensure accuracy, relevance, and effectiveness in teaching dressmaking competencies.

Demographic Profile – The descriptive characteristics of respondents, such as age, sex, grade level, and other relevant variables.

Hands-on Competencies of Dressmaking – The practical skills and abilities demonstrated by students in applying sewing techniques, garment construction, finishing, and creative craftsmanship.

Basic Sewing Techniques – Fundamental skills in stitching, hemming, and fabric handling.

Garment Construction and Finishing – The ability to assemble clothing pieces accurately and apply appropriate finishing techniques.

Creativity and Craftsmanship (as evaluated using performance rubrics) – The originality, neatness, precision, and aesthetic quality of the students' dressmaking outputs.

Level of Acceptability – The degree to which the developed modules are considered appropriate, practical, and effective by teachers and students**.**

Alignment with Curriculum Standards and Competencies –Consistency with prescribed learning outcomes in the curriculum**.**

Clarity of Instructions and Organization – Ease of understanding, logical flow, and structured presentation of lessons.

Content Quality and Accuracy – Correctness, depth, and relevance of information provided.

Usability and Practicality in Classroom and Modular Settings – Applicability and adaptability of modules in both face-to-face and self-directed learning contexts.

CHAPTER 2

REVIEW OF RELATED LITERATURE AND STUDIES

The literature review lays the groundwork for the current research by providing both theoretical and empirical support. The study is framed within the current body of knowledge, highlighting deficiencies that necessitate further exploration and substantiating the need for the creation and validation of instructional modules in Dressmaking. This review aims to elucidate the interrelationships among learning theories, competencies in technical and vocational education, and the impact of instructional materials on enhancing academic performance and practical skills.

Relevant local and international literature is presented to underscore the importance of integrating practical skills in Dressmaking through structured instructional modules that adhere to curriculum standards. Additionally, empirical studies are examined to demonstrate the influence of instructional materials on students' performance in both theoretical and practical aspects of learning. The focus is on research related to competency-based education, enhancing skills in technical and vocational pathways, and the effectiveness of self-directed and modular learning.

This section is organized by theme, beginning with literature that explores the impact of teaching and learning on academic performance. After that, it proceeds to research on improving skills in dressmaking and related fields, as well as studies on teaching materials and methods for validating their effectiveness. The review examines studies that assess the acceptability of modules based on their content, clarity, alignment with curriculum standards, and ease of use in various learning settings. This section concludes with an examination of the challenges that teachers and students encounter when utilizing the developed modules. It provides ideas for improvement and highlights areas of concern.

This thorough review ensures that the proposed dressmaking modules are based on established theories, adhere to educational standards, and meet the needs of both teachers and students.

Related Literature

Instructional modules are widely recognized as crucial tools for fostering self-directed learning, particularly in technical and vocational fields. Madrideo (2023) emphasized that a validated dressmaking module for classroom use can significantly enhance students' understanding of theoretical concepts while allowing them to practice essential sewing and garment construction skills. The study demonstrated that modules tested for content accuracy, usability, and adaptability enhance teachers' lessons, providing students with structured guidance and making competency-based education more accessible. This highlights the importance of validating instructional materials before they are integrated into the educational process.

Fernandez (2021) also looked into the effectiveness of modular learning methods in secondary education. The study demonstrated that well-organized self- learning modules enable students to become more independent, comprehend material more effectively, and retain knowledge more efficiently. It also cautioned, however, that the effectiveness of modular learning depends on how well the instructions are written and how well they match the goals. In dressmaking, this emphasizes the necessity to create modules that distinctly convey content while integrating sequential demonstrations to enhance practical skills.

In the field of Technical and Vocational Education and Training (TVET), flexible and modular approaches are being increasingly utilized. Pallado, Navarra, and Tenedero (2022) investigated the effectiveness of flexible learning delivery in TESDA institutions and concluded that these approaches improve access to vocational education while maintaining instructional quality. However, their research highlighted problems, such as insufficient resources and a lack of adequately prepared trainers, that hinder the acquisition of practical skills. This means that dressmaking teachers need to have not only validated modules but also enough resources and professional help to help students learn technical skills.

Daryono (2023) conducted an empirical assessment of student competencies in vocational education, demonstrating that the mastery of practical skills is profoundly influenced by the quality of instructional materials and the relevance of assessment instruments. The study recommended the use of competency-based rubrics to evaluate learners' proficiency in task execution, especially in dressmaking, where creativity, craftsmanship, and technical precision necessitate systematic assessment.

There are also changes happening in how people around the world see competency-based assessment. The Carnegie Foundation (2024) has put forward a skills-based assessment framework that prioritizes performance tasks and real- world applications over traditional testing methods. This framework clarifies learning goals and proficiency descriptors, which can help you create rubrics for evaluating dressmaking work, such as sewing accuracy and garment finishing.

A 2021 study conducted in Bali reinforced this methodology by elaborating on the evolution of competency-based assessments in vocational high schools. It emphasized the creation of rubrics, alignment with professional competencies, and the standardization of educator evaluations. The results indicate that for modules to be practical, they must include assessments that measure both technical skills and creative outputs, guaranteeing that students' learning is quantifiable and pertinent to the industry.

Recent systematic reviews of competency-based education (CBE) (2021– 2025) underscore that CBE facilitates learner progression based on demonstrated proficiency rather than the duration of classroom attendance. These reviews also highlight issues such as ensuring test validity, managing

administrative tasks, and providing teachers with the necessary tools. Using a CBE framework in dressmaking makes sure that the modules are set up to help students learn specific skills, from basic sewing to advanced garment construction.

Applying CBE in various situations provides us with valuable insights. A study on the use of Competency-Based Education (CBE) in healthcare education found that mentorship, hands-on training, and assessments based on standards were all important for effective learning (PMC, 2023). The results indicate that structured guidance and reliable evaluation criteria are essential for teaching dressmaking, where hands-on experience plays a crucial role in the learning process.

The Aurora Institute (2023) emphasized the importance of work-based learning in competency-based education policy frameworks. It stated that incorporating real-world tasks into educational modules increases students' interest in learning and enhances their likelihood of securing employment. In dressmaking, modules should include not only basic sewing skills but also teach students how to make clothes that meet market standards. This way, what they learn in class can also be applied in real life.

Official curricular resources have a significant impact on how teachers teach. The Department of Education (DepEd) has released K to 12 Dressmaking and Tailoring modules that set basic standards for teaching technical skills (DepEd, 2020). These modules are standards that researcher-created materials must meet in order to be relevant and acceptable in the curriculum. The existence of official resources underscores the importance of validation in the development of supplementary materials, thereby avoiding duplication and ensuring added value.

Futalan (2024–2025) investigated students' attitudes, dressmaking skills, and resource sufficiency, revealing that the accessibility and efficacy of learning resources significantly influenced performance and entrepreneurial readiness. The study emphasized that students who had access to well-organized modules and adequate resources demonstrated increased creativity and proficiency. This directly supports the need to test modules for usability and usefulness in dressmaking lessons.

Recent research on self-learning modules in dressmaking (2024–2025) found that students who worked with carefully designed modules were more independent and demonstrated better proficiency in basic sewing skills. Still, there were problems, such as a lack of sewing supplies and difficulty understanding unclear instructions. These findings confirm that modules must be evaluated for clarity, organization, and resource requirements to be practical in technical fields.

Extensive research on TVET and competency-based frameworks in the Philippines (2021–2023) has underscored the need to align educational modules with national certification standards. Competency mapping, standardized assessments, and alignment with industry standards were identified as crucial elements in ensuring that vocational graduates are equipped for employment. In dressmaking, this means that modules should not only build on what students learn in class, but also prepare them for TESDA competency tests.

Diagnostic tools are essential in competency-based education. Recent curricular studies (2020–2023) have developed and validated diagnostic assessments and test banks for dressmaking, focusing on measuring students' basic knowledge and performance following instruction. These tools helped teachers identify the skills students were lacking and adjust their lessons accordingly. This study corroborates the use of pretests and posttests to assess improvements in academic performance following engagement with validated modules.

Ultimately, research conducted during the pandemic on modular learning continuity (2020–2022) demonstrated that modules facilitated the continuation of instruction despite classroom interruptions. Nevertheless, the studies underscored that students required additional support from educators, and practical subjects, such as dressmaking, faced challenges concerning resource

availability and supervision. These findings clarify the difficulties that both educators and learners might encounter when employing developed modules, including concerns related to accessibility, guidance, and material adequacy.

Related Studies

Jocelyn V. Madrideo (2023) developed and assessed a researcher- designed dressmaking module by analyzing its usability, adaptability, generalizability, and content validity. The research employed descriptive- developmental methodologies and found that thoroughly validated modules can substantially enhance TLE instruction by providing structured procedures and reference materials that facilitate students' practice of sewing and garment construction outside the classroom. Madrideo's research directly supports the rationale for creating a validated set of dressmaking modules and for evaluating their acceptability among educators and students.

Villareal (2023) documented the development and evaluation of a Basic Dressmaking module for Grade 7–8 students, noting that subject-matter experts and DepEd educators highly rated the module in terms of content relevance and instructional design. The study highlights the importance of expert panel validation and local teacher feedback in developing modules for classroom or modular delivery, emphasizing the need for alignment with curriculum standards and practical applicability.

A 2023 study on the creation and testing of tailoring or related modules found that expert review, pilot testing, and repeated improvements result in modules that teachers perceive as functional extra classroom materials. These development projects prioritize the creation of rubrics and practical performance assessments (e.g., sewing samples, garment fitting) as critical elements of validation—methods that are directly applicable for validating dressmaking learning modules in your research.

Roque's (2023) systematic review of modular distance learning in the Philippine "new normal" synthesized local evidence regarding printed and digital modules, highlighting both the modality's advantages (continuity of learning, learner autonomy) and its disadvantages (unequal access to resources and restricted supervised practice for practical skills). This review is especially relevant to dressmaking modules, as it identifies the practical challenges (material accessibility, supervised practice) that must be overcome to achieve proficiency in technical-vocational subjects delivered in a modular format.

Chan, Marasigan, and Santander (2021) examined the experiences of multigrade teachers with modular remote instruction during the COVID-19 pandemic, emphasizing notable classroom challenges, including the logistics of module distribution and collection, inaccuracies or ambiguities in module content, and the heightened workload on teachers necessitated by the creation of supplementary video or printed resources. Their qualitative findings underscore that clarity, organization, and instructor support of the module are essential for acceptability and for enhancing practical skills from pretest to posttest.

Pallado, Navarra, and Tenedero (2022) evaluated the effectiveness of TESDA's flexible learning delivery, determining that flexible or modular TVET delivery can maintain training continuity and improve accessibility; however, success depends on resource availability, trainer preparedness, and material validation. Their findings indicate that dressmaking modules in a flexible TVET environment require trainer orientation and resource allocation to achieve the intended practical competency outcomes.

Global monitoring reports and policy analyses conducted during and after the pandemic (World Bank/ILO/UNESCO surveys, 2020–2021) documented substantial disruptions to Technical and Vocational Education and Training (TVET) and work-based learning, calling for reforms to improve remote and modular delivery while preserving opportunities for supervised practical

experience. International policy perspectives assert that validated modules alone are insufficient; systems must ensure access to tools, supervised practice, and assessment mechanisms that accurately represent genuine performance. These suggestions outline the "challenges" part of your study, which includes materials, supervision, and assessment.

Systematic reviews of competency-based education (CBE) in professional and vocational fields (e.g., McMullen et al., 2023) identify standard CBE features— such as explicit competency statements, performance-based assessments, and standardized rubrics—and note that rigorous evaluation methods improve learner outcomes. These reviews provide methodological guidance on aligning dressmaking module learning outcomes with competency descriptors and on creating rubrics to accurately evaluate fundamental sewing techniques, garment construction, and craftsmanship.

The Carnegie Foundation's "Skills for the Future" (2023–2024) initiative and related reports emphasize the need for assessments that evaluate long-lasting skills and real-world tasks, rather than just time spent in class. They also give guidelines and principles for tests (task design, proficiency descriptors) that can be used in dressmaking performance tests. This global evaluation supports the use of authentic performance tasks, such as completed garments assessed with rubrics, as posttest evaluations instead of solely depending on written exams. The Aurora Institute and Competency Works networks (2023) advocate for the integration of work-based learning (WBL) into competency-based education (CBE) to facilitate students' application of skills in genuine contexts and demonstrate mastery. For dressmaking modules, suggestions include adding tasks that focus on business, workplace simulations, or community sewing projects as part of validation and competency assessment to improve employability and the practical usability aspect of acceptability.

Recent local studies on entrepreneurial training and resource adequacy for dressmaking (e.g., 2023–2024 IJAMS and similar local journal reports) demonstrate that students' attitudes, resource availability, and module effectiveness substantially influence both craftsmanship and entrepreneurial readiness. These studies promote the utilization of validated modules that include clear guidelines for low-cost materials, alternative methodologies in the absence of equipment, and assessment rubrics that integrate creativity and market standards—crucial for assessing practical competence in resource-constrained settings.

Individual Learning Modules (ILMs) are widely regarded as effective instruments in international vocational education for augmenting technical skills, particularly in textile and garment-related fields. McCormick and Brooks (2020) argue that modular learning provides students with the opportunity to acquire specialized skills in a flexible, self-paced manner that is not constrained by the traditional classroom's rules. This adaptability is crucial in dressmaking, as proficiency in fundamental skills such as pattern drafting, fabric cutting, and machine operation requires continual practice and personalized feedback.

Global studies also show that ILMs help people learn how to do things more effectively by providing them with structured, step-by-step learning activities. Billett (2021) stated that modularized training encourages "learning by doing" by breaking down large tasks into smaller, more manageable parts. This allows students to practice sewing techniques such as hemming, stitching, and finishing at their own pace. This method helps keep the mind from becoming too full and ensures that skills are correct, which is crucial in making clothes. Adding multimedia demonstrations to ILMs helps students understand even more because they can see the correct way to do things before attempting it on their own.

In the field of garment technology, personalized modules also help students improve their design and problem-solving skills. Çelik and Yıldırım (2022) stated that ILMs that incorporate design challenges, pattern manipulation tasks, and fabric-handling exercises are particularly beneficial for

fashion and textile students. These modules help people become more creative and flexible with technology, which are two skills essential in the global clothing industry. With ILMs, students have structured opportunities to explore different styles of clothing, modify patterns, and address fitting issues using guided worksheets and performance tasks.

Additionally, international vocational literature underscores that ILMs enhance learner autonomy and self-efficacy in the acquisition of practical skills.

Johnston and Mortimer (2023) argue that individualized, module-based learning fosters confidence because students progress at their own pace, utilize rubrics to evaluate their work, and make adjustments based on their self-assessment of what needs improvement. This freedom is important in dressmaking because students can practice techniques such as dart stitching, bias binding, or zipper installation repeatedly until they master them, without worrying about keeping up with their classmates in group-paced lessons.

Lastly, ILMs support competency-based education, which is the global standard for technical and vocational training. Gopalakrishnan and Ramanathan (2024) stated that modular learning aligns with industry-recognized skills, ensuring that students acquire skills relevant to jobs in garment production and dressmaking. Students learn both technical skills and how to prepare for the workforce through modules that include demonstrations, guided practice, and performance assessments. Individual Learning Modules have become a key component of international TVET systems, helping people enhance their dressmaking skills and prepare for jobs in the ever-evolving fashion and garment industries.

CHAPTER 3

PRESENTATION, DATA ANALYSIS AND INTERPRETATION

This chapter discusses the analysis and interpretation of the collected data in light of the study's goals. It is organized in a way that makes sense based on the research questions asked in Chapter 1. The presentation consists of six main parts.

The first part discusses the demographics of the respondent groups. For the teachers, data were grouped by age, gender, highest level of education, number of professional development trainings attended, length of time teaching, and number of years of experience. The students' age, gender, grade level, previous experience with dressmaking, and home access to learning materials and resources were examined to determine their readiness for TVL Dressmaking and to understand their background. The second part shows how well students did in school before and after using the dressmaking learning modules that were made. The amount of improvement in theoretical knowledge was found by comparing the scores on the pre-test and the post-test.

As judged by experts and teacher-validators, the third part talks about the level of acceptability of the modules that were made. The results were analyzed based on four criteria: content quality and accuracy, instructional clarity and organization, alignment with curriculum standards and competencies, and utility in both classroom and modular learning environments.

The fourth part demonstrates the students' ability to perform tasks with their hands after using the created modules. Standardized rubrics were used to grade their work, and they were asked to show their creativity and skill while also learning basic sewing techniques and how to build and finish clothes.

The fifth part assesses whether there is a significant difference between students' academic performance and their ability to work with their hands before and after implementing the dressmaking modules. Finally, the sixth part discusses the challenges TVL Dressmaking teachers

and students encountered when using the modules in a modular learning setting. These insights help improve intervention and encourage more people to use it.

RELATED INFORMATION OF THE RESPONDENT GROUPS

The first part discusses the demographics of the respondent groups. For the teachers, data was grouped by age, gender, highest level of education, number of professional development trainings attended, length of time teaching, and number of years of experience. The students' age, gender, grade level, previous experience with dressmaking, and home access to learning materials and resources were examined to determine their readiness for TVL Dressmaking and to understand their background.

Age

One important demographic characteristic of the school heads and master teachers is age. Age determines the maturity and experiences of these respondents throughout their exposures. Table 2 shows the age profile of the respondents.

Table 2 Age Profile

Age	Frequency	Percentage
46-50	**1**	**20**
41-45	**2**	**40**
36-40	**2**	**40**
Total	**5**	**100.00**
SD	**5.86**	
Average	**41.4**	

Table 2 shows that most respondents fall within the age range of 36 to 40, as well as 41 to 45. Together, these age groups comprise 40% of the entire population. Only one respondent (20%) falls within the age range of 46 to 50. The standard deviation is 5.86 years, indicating that the group is relatively uniform in age, with an average age of 41.4 years.

This means that most of the respondents are likely professionals in the middle of their careers, with extensive experience in teaching or working in the field. The range of ages they are in is a good mix of maturity and adaptability, which makes it easier to implement interventions like TVL dressmaking modules.

The fact that most respondents were in their early to mid-40s suggests that people in this age range have been teaching for a long time, making their feedback on teaching materials, such as learning modules, more reliable. Willingness to Try New Things with Insights from Experience: Teachers in this age group are typically open to new ideas, while also possessing a solid understanding of how things work in the real world. This makes them ideal for evaluating how well a module performs. Due to their experience, they could serve as champions or trainers for implementing dressmaking modules on a larger scale.

Overall, the range of ages of the respondents enhances the study's credibility and usefulness, as the insights and performance data are derived from teachers and students who are at a productive and responsive stage in their academic or teaching journey.

Gender

Another crucial demographic characteristic is gender. Gender determines the sexes of the respondents, whether they are males or females. Table 3 shows the gender profile of the respondents.

Table 3 Gender Profile

Indicator	Frequency	Percentage
Females	**5**	**100**
Total	**5**	**100.00**

Table 3 presents the gender breakdown of the respondents, indicating that all respondents were women, thus constituting the entire sample population. This even distribution of men and women aligns with the general trend in the TVL Dressmaking/Garments specialization, where women are more prevalent in both academic settings and the clothing industry. The fact that only women were in the study sample suggests that it accurately reflects the demographics of students or teachers in dressmaking-related programs.

This gender pattern makes the results more useful for female-centered instructional design, but it also makes it more challenging to apply the results to people of other genders. The study cannot comment on gender differences in learning engagement, competency development, or module acceptability because it did not include any male respondents. Still, the results suggest that schools and policymakers may be able to promote gender equality by encouraging more men to pursue technical and vocational tracks traditionally viewed as female- dominated.

Highest Educational Attainment

Another essential variable to consider is the highest educational attainment. This determines the level of attainment among school leaders and teachers. Table 4 shows the respondents' highest educational attainment.

Table 4. Highest Educational Attainment

Highest Educational Attainment	Frequency	Percentage
w/ units in Doctorate Degree	1	20
w/ Master's Degree	1	20
w/ units in Master's Degree	3	60
Total	**5**	**100.00**

According to Table 4, all respondents hold graduate-level degrees. Sixty percent of them have earned units toward a Master's degree, twenty percent have completed a full Master's degree, and twenty percent are currently pursuing or have earned units toward a Doctorate. This high level of academic background suggests that the respondents are not only experienced but also professionally qualified to evaluate teaching materials with academic depth. Garcia and Weiss (2021) suggest that teachers with college degrees are more likely to adapt their lessons effectively and possess better analytical skills. This enables them to plan lessons more effectively and evaluate their progress. Arrieta (2022) also states that teachers in graduate school are more likely to make decisions about teaching based on research. This makes their feedback on the developed dressmaking modules more reliable. Due to this, the respondents' advanced education makes their assessments more reliable and valid. This ensures that the process of evaluating modules is grounded in both theory and practice. However, while this profile indicates that the person excels academically, it also suggests that support systems should be considered when the modules are used with teachers who have less education, in case the intervention is implemented in more locations.

Length of Teaching Experience

The number of years in service is closely related to the length of service that these school leaders and teachers render in performing their duties and responsibilities. Table 5 shows the number of years in service of these respondents.

Table 6 indicates that most respondents are in the middle to late stages of their careers. Forty percent of them have taught for 11 to 15 years, and other forty percent have taught for 6 to 10 years. Not many people (only 20%) have been in the job for more than 15 years. The average length of service is 15.8 years, and the standard deviation is 3.19 years. This means that the group is experienced and evenly spread out.

Table 5. Number of years in service

Number of years in service	Frequency	Percentage
More than 15 Years	1	20
11-15 years	2	40
6-10 years	2	40
Total	5	**100.00**
SD	**3.19**	
Average	**15.8**	

Based on this profile, the respondents have extensive experience in both the classroom and the real world, which is crucial for utilizing and evaluating specialized teaching materials, such as the TVL Dressmaking modules. Bautista and Bernardino (2021) suggest that teachers with longer tenure tend to be more stable and creative in their lessons, which enables them to adapt better learning interventions to meet the diverse needs of a wide range of students. Lopez (2023) also found that having experience as a teacher is strongly linked to confidence in teaching with hands-on and skill-based methods, especially in technical and vocational subjects.

These differences in ages and genders make the study results more reliable because the insights and performance ratings come from experienced teachers who can judge what works in real classroom and modular settings. That being said, this affects module scalability, as newer or less experienced teachers may require additional support to utilize the materials thoroughly. The involvement of experienced teachers in this study not only demonstrates the reliability of the modules but also underscores the importance of peer coaching systems when the modules are made available to a broader audience of teachers.

Number of Professional Development Trainings Attended

Another demographic characteristic that needs to be assessed is the number of appropriate seminars/trainings/workshops attended. Seminars and workshops are helpful for teachers. They measure the training effectively. The school needs to consider what to measure, when to measure the efforts, and how to approach it. Table 7 shows the number of appropriate seminars/ trainings/workshops.

Table 7 Seminars/trainings/workshops attended

Number of appropriate seminars/trainings/workshops attended	Frequency	Percentage
16 and above	2	40
11-15 times	2	40
6-10 times	1	20
Total	**5**	**100.00**
SD	**3.27**	
Average	**15.2**	

Table 7 shows the amount of training respondents received based on the number of professional development activities they participated in. Forty percent of respondents have attended sixteen or more seminars or training courses. The other forty percent have attended eleven to fifteen training sessions, and twenty percent have attended six to ten sessions. With a standard deviation of 3.27, the average number of trainings attended is 15.2. This indicates that most respondents have experienced steady and significant professional growth over time.

The high rate of participation suggests that the respondents are not only experienced but also actively learning new things all the time. This is in line with DepEd's focus on teachers building their skills throughout their careers. Serrano and Villanueva (2021) say that teachers who go to professional development sessions regularly are more open to new ways of teaching and are better at using competency-based approaches. Similarly, Del Rosario (2022) notes that teachers who regularly attend seminars feel more confident in their teaching and are better equipped to utilize new teaching tools, particularly in vocational and technical subjects.

This training profile lends credibility and reliability to the respondents' reviews of the TVL Dressmaking modules, as their opinions are grounded in both theoretical knowledge and extensive field experience. What this means for future implementation, however, is that while the modules may be well-received by experienced teachers, those with less experience or training may require additional support to develop their skills before using them. Ensuring equal access to professional development for all is crucial for expanding the intervention and ensuring that all schools maintain high-quality teaching standards.

Learners

This refers to the Junior High School learners enrolled under the Technical-Vocational-Livelihood (TVL) Dressmaking/Garments specialization who participated in the study as recipients of the developed learning modules.

Age and Gender

Age and Gender are another domain that refers to the learners' biological sex (male or female) and chronological age at the time of data collection. These variables help determine demographic trends among Dressmaking learners**.** Table 8 refers to the age and gender of learners.

Table 8 Age and Gender

Age	Male	Female	Total	Percentage
16-above	1	13	**14**	**25.88**
14-15	5	27	**32**	**48.23**
12-13	4	10	**14**	**25.88**
Total	**10**	**50**	**60**	**100**
Average	**13.9**	**14.72**	**14.31**	
SD	**1.37**	**4.38**	**2.88**	

Table 8 illustrates how the learner respondents were divided by age and gender. Most of the students are between the ages of 14 and 15, making up 48.23% of the population. The largest groups are 12- to 13-year-olds and those 16 and older, each comprising 25.88%. When it comes to gender, there are 75 female learners compared to 10 male learners, which means that 88% of the respondents are female. The students' average age is 14.31 years, with a standard deviation of 2.88 years. This is a relatively young and diverse age group of students in junior high school.

Based on this distribution, the TVL Dressmaking program appears to continue mainly attracting female students, aligning with cultural norms that view sewing skills as feminine. However, the

small number of male participants suggests that technical and vocational education is becoming more inclusive of both sexes. According to Reyes and Mendoza (2021), the presence of more men in non-traditional TVL fields helps break down gender stereotypes, thereby creating a more equitable learning environment.

The effect of this group of people is twofold. First, the fact that most students are women means that learning materials and activities should continue to take their interests and social and emotional needs into account, especially when it comes to tasks that require skills and creativity. Second, the fact that there are some male students, even if they are few, shows that we need gender-neutral teaching methods to make sure that the module content, pictures, and examples do not reinforce gender bias. Villarin (2023) states that gender-responsive teaching increases students' interest, confidence, and likelihood of staying in vocational programs.

Finally, the respondents' age and gender make up a typical, though changing, TVL Dressmaking classroom. This provides us with valuable insights for creating modules that are both inclusive and beneficial for children's development.

Grade Level

This indicates the academic placement of learners in Junior High School (e.g., Grade 7, Grade 8; Grade 9, or Grade 10), which determines their curriculum coverage and learning readiness. Table 9 shows the grade level of the learner respondents.

Table 9 Grade Level

Indicators	Frequency	Percentage
Grade 10	25	42.35
Grade 9	23	37.65
Grade 8	12	20
Total	**60**	**100.00**

Table 9 illustrates the distribution of learners who responded to the survey by grade level. Grade 10 learners made up the largest group of participants (42.35%), followed by Grade 9 students (37.65%). Grade 8 learners made up just 20% of the total population. Based on this distribution, most respondents are in upper secondary school, which is when students are expected to demonstrate higher levels of competence, independence, and readiness for specialization.

The fact that most learners are in Grades 9 and 10 suggests that the TVL Dressmaking modules are a good fit for the curriculum progression of learners on the specialization track. This is especially true, as these years are often viewed as transitional stages leading to future employment or business ownership. Santos and Del Mundo (2022) argue that upper-grade TVL learners excel at handling tasks and learning new skills, making them ideal candidates for competency-based teaching materials.

Since learners are grouped by grade level, learning modules should incorporate scaffolding strategies that cater to all skill levels. Learners in Grade 10 may be able to handle more advanced clothing construction and business integration. However, learners in Grade 8, who are the smallest group, may need easier-to-understand instructions, step-by-step pictures, and supervised practice. Additionally, when planning lessons, it is essential to ensure that activities are tailored to the students' level of readiness and that the module content remains appropriate for all stages of development.

Prior Exposure to Dressmaking Skills

Table 10 shows the prior exposure of learners to dressmaking skills, which refers to any previous experience or informal training related to sewing or garment- making, whether acquired at home, through school activities, livelihood programs, or community workshops.

Table 10. Prior Exposure to Dressmaking

Indicators	Frequency	Percentage
School-based exposure	25	41.17
Home-based exposure	20	32.94
No prior exposure	15	25.88
Total	**60**	**100.00**

Table 10 shows what the learners already knew about making clothes. Most of the people who answered (41.17%) stated that they had encountered dressmaking concepts in school, indicating that many students had already learned about them in TLE or EPP classes. This is followed by exposure at home (32.94%), which means that almost a third of the learners learned how to sew through family influence or casual practice at home. Additionally, 25.88% of respondents reported never having been exposed to it before, suggesting that a substantial number of respondents are complete beginners in the field.

Based on this distribution, many learners already possess basic skills, but a significant number still require instruction in the fundamentals. Manalo and Rosales (2021) suggest that learners who have prior experience with practical work tend to acquire skills more quickly and develop greater confidence in technical and vocational subjects. Furthermore, Cruz (2022) emphasizes that modules should be flexible enough to accommodate both new and experienced students, offering various pathways for progression.

It is clear how this affects module development: the teaching materials need to strike a balance between reinforcing and remedial learning, ensuring that activities are neither too complex for first-time students nor too repetitive for more experienced ones. This could be strategically addressed by integrating diagnostic tasks with optional enrichment activities, allowing learners to choose their own pace based on their prior knowledge. Overall, the data indicate that the modules will benefit students with a strong foundation in the subject. However, those who require a basic understanding will need careful guidance to ensure everyone has an equal opportunity to learn.

Access to Learning Resources and Materials at Home

Describes the availability of sewing tools (e.g., needles, thread, fabrics, sewing machine) and printed or digital learning materials that learners can use independently outside the classroom. Table 11 shows the results of access to learning resources and materials at home.

Table 11. Access to Learning Resources and Materials at Home

Indicators	Frequency	Percentage
Printed and digital learning modules available	49	82.35
Fabric and practice materials	32	52.94
Sewing machine available	29	49.41
Basic sewing tools	51	84.71
Total	**60**	**100.00**

Table 11 illustrates the ease with which students can access learning materials and resources at home, a key factor in their readiness for modular and hands-on dressmaking activities. Most people

who answered (84.71%) reported having access to basic sewing tools, and a significant majority (82.35%) also had access to printed or digital learning materials. This shows that most students have basic teaching and practical tools. On the other hand, 52.94% reported being able to obtain fabric and practice materials, while 49.41% indicated they could use a sewing machine at home.

This distribution indicates that while many learners have access to the necessary materials, only about half have access to tools that enable more advanced or ongoing practice, such as sewing machines or clothing-making supplies. Torres and Galvez (2021) argue that having physical learning tools at home facilitates memory and independent learning, particularly in technical and vocational subjects where practice directly impacts mastery. However, Aquino (2023) notes that performance gaps may occur when people lack equal access to resources. This is especially true in modular or blended learning settings where teachers have limited control over the students.

These results highlight the importance of creating modules that cater to both learners with abundant resources and those with limited access. For example, learning activities should include various options, such as hand-stitching tasks for those without sewing machines or fabric simulation exercises on paper for individuals without access to textile materials. As a result, schools should consider supporting resources, such as borrower kits, school-based practice hubs, or shared equipment rotation schedules, to ensure all students have equal access and the same level of skill development.

ACCEPTABILITY OF THE DEVELOPED DRESSMAKING MODULES

This section presents the results of the developed dressmaking modules, which experts and teachers evaluated to determine their overall quality and suitability for instructional use. Their level of acceptability was assessed across four key criteria: content quality and accuracy, clarity of instructions and organization, alignment with curriculum standards and competencies, and usability and practicality in both classroom and modular learning settings. The results of this evaluation provide essential feedback for validating the effectiveness and readiness of the modules for full implementation.

Content Quality and Accuracy

This domain refers to the correctness, depth, and relevance of information provided. Table 12 shows the content quality and accuracy.

Table 12 presents the ratings of both teachers and learners for the dressmaking modules in terms of the quality of the content and its accuracy. With an overall weighted mean of 4.68 (Strongly Agree), teachers gave the module a very high rating. Learners, on the other hand, gave it a slightly lower but still positive rating of 4.10 (Strongly Agree). This indicates that both groups consider the information accurate, helpful, and aligned with curriculum expectations. This demonstrates that the module can be effectively used for teaching purposes.

"The module encourages critical thinking and creativity" got the highest score from teachers, with a perfect weighted mean of 5. The next best score was "The lessons encourage both academic and practical knowledge" (WM = 4.80). The item on critical thinking and creativity also got the highest score from the

Table 12. Content Quality and Accuracy

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
The content is factually correct and up-to-date.	4.60	0.62	4.20	0.79	4.40	0.71	**Strongly Agree**
The lessons reflect the competencies required by the K-12 TVL curriculum.	4.50	0.67	4.30	0.86	4.40	0.77	**Strongly Agree**

The examples and activities are relevant to the learners' context.	4.50	0.65	4.10	0.89	4.30	0.77	**Strongly Agree**
Technical terminologies are accurate and clearly defined.	4.70	0.45	4.10	0.75	4.40	0.60	**Strongly Agree**
The lessons promote both academic and practical knowledge.	4.80	0.34	3.40	0.65	4.10	0.50	**Agree**
The module fosters critical thinking and creativity.	5.00	0.00	4.50	0.79	4.75	0.40	**Strongly Agree**
Average Weighted Mean	**4.68**	**0.46**	**4.10**	**0.79**	**4.39**	**0.62**	**Strongly Agree**

Legend:

4.21-5.00 Strongly Agree
3.41- 4.20 Agree
Disagree
2.61 -3.40 Neutral
1.81- 2.60 Disagree
1.00-1.80 Strongly

students (WM = 4.50). These results demonstrate that the modules effectively teach higher-order thinking skills while remaining applicable in real-life settings, a crucial aspect of skill-based learning. Medina and Corpuz (2021) suggest that teaching materials that encourage creativity and problem-solving help students think more deeply and retain what they have learned for a longer period. This finding shows that the modules do more than just teach content; they also promote creativity and individuality, which are crucial in clothing design and making. This means that open-ended tasks and project-based outputs should continue to be included in future modules. This will keep students motivated and encourage them to think about their work.

The indicator that learners liked the least was "The lessons promote both academic and practical knowledge," which got a weighted mean score of 3.40 (Agree) and also got the lowest score in the overall results. Although teachers strongly agreed with this item, students' lower ratings suggest that some activities may require more real-world application or a more precise explanation of how they can be applied in real life. Ramos and Villareal (2022) suggest that technical and vocational learners prefer learning through hands-on activities and tangible materials. They may not find written explanations sufficient without guided demonstrations or hands-on integration. This finding means that the link between theory and practice needs to be strengthened. This could be done by adding more step-by-step visuals, demonstration links, or performance-based checkpoints. This means that improving practical scaffolding will help all students, even those with limited dressmaking experience or few tools at home, fully understand both the academic and practical aspects of dressmaking lessons.

Clarity of Instructions and Organization

Ease of understanding, logical flow, and structured presentation of lessons. Table 13 shows the results on the clarity of instructions and organization.

Table 13 illustrates the evaluators' opinions on the module's structure and clarity. All indicators were rated as Strongly Agree by both teachers and students,

Table 13. Clarity of Instructions and Organization

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
The instructions are simple and easy to follow.	4.70	0.34	4.70	0.45	4.70	0.40	**Strongly Agree**
Activities are logically sequenced.	4.60	0.28	4.70	0.54	4.65	0.41	**Strongly Agree**
Learning objectives are clearly stated.	4.80	0.28	4.80	0.57	4.80	0.43	**Strongly Agree**
Layout and formatting support readability.	5.00	0.00	4.80	0.64	4.90	0.32	**Strongly Agree**

Illustrations and visuals enhance understanding.	4.80	0.34	4.60	0.64	4.70	0.49	**Strongly Agree**
Instructions for performance tasks are detailed and achievable.	4.60	0.32	4.30	0.67	4.45	0.50	**Strongly Agree**
Average Weighted Mean	**4.75**	**0.26**	**4.65**	**0.59**	**4.70**	**0.42**	**Strongly Agree**

giving the module an overall weighted mean of 4.70. There was much agreement that the dressmaking modules were well-written, well-organized, and easy for learners to understand. This means that they could be used for independent learning, especially in modular or blended settings. The fact that teacher ratings

(WM = 4.75) Moreover, learner ratings (WM = 4.65) are almost identical, indicating that the modules are effective for both teaching and self-guided learning, which aligns with the principles behind self-paced technical-vocational instruction.

"Layout and formatting support readability" got the best scores from both teachers and students, with a mean score of 5 out of 5 stars. This means that the module made good use of clear fonts, spacing, and visual organization that make learning easier for everyone. Santos and Enriquez (2021) argue that well-designed learning materials significantly improve cognitive load management, allowing students to focus on the content rather than navigating the directions. This high rating indicates that the module's visual structure facilitates navigation and reduces learning anxiety, which is particularly important for skill-based subjects that require frequent switching between reading and hands-on activities. This means that future modules will need to maintain or enhance visual clarity by incorporating color-coded or icon-based guides to assist students who struggle with reading or have special needs.

"Instructions for performance tasks are detailed and achievable" received the lowest score (4.60 for teachers and 4.30 for students), yet it was still classified as Strongly Agree. This slight drop suggests that, despite explicit instructions, some students may still need additional support or demonstrations for more challenging sewing tasks. Delos Reyes and Navarro (2023) suggest that performance-based modules should include clear, step-by-step instructions and visual or video support, enabling students with varying levels of experience to follow along confidently. This score suggests that students appreciate details but may still be uncertain about applying what they have learned. This suggests that future versions of the module could benefit from the addition of troubleshooting guides, reflective "self-check points," or QR-linked video demos to help students become more independent and master their tasks.

Alignment with Curriculum Standards and Competencies

Table 14 shows the consistency with prescribed learning outcomes in the curriculum which was the alignment with curriculum standards and competencies.

Table 14. Alignment with Curriculum Standards and Competencies

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
The modules align with DepEd TVL Dressmaking curriculum standards.	4.90	0.32	4.30	0.56	4.60	0.44	**Strongly Agree**
Competencies are measurable and observable.	5.00	0.00	4.50	0.57	4.75	0.29	**Strongly Agree**
Content is appropriate for Junior High School learners.	4.70	0.43	4.60	0.62	4.65	0.53	**Strongly Agree**
Assessment tasks align with learning outcomes.	4.80	0.34	4.70	0.65	4.75	0.50	**Strongly Agree**

The competencies support lifelong learning skills.	5.00	0.26	4.50	0.56	4.75	0.41	**Strongly Agree**
The modules reflect TESDA's dressmaking competency standards.	4.50	0.36	4.30	0.66	4.40	0.51	**Strongly Agree**
Average Weighted Mean	**4.82**	**0.29**	**4.48**	**0.60**	**4.65**	**0.44**	**Strongly Agree**

Table 14 illustrates how the testers assessed the module's compliance with the requirements set by DepEd and TESDA. The overall result was a weighted mean of 4.65, indicating that both teachers and students agreed the dressmaking modules were well-aligned with the curriculum and effectively built around students' skills. Teachers gave the alignment a slightly higher score (WM = 4.82) than learners did (WM = 4.48), suggesting that teachers were more familiar with the curriculum-matching aspects of the module. Learners, on the other hand, saw it through the lens of usability and task relevance.

The statements "Competencies are measurable and observable" and "The competencies support lifelong learning skills" received high marks from both teachers and students, with a weighted mean of 4.75 (Strongly Agree) for each. This shows that the module clearly outlined the necessary skills, knowledge, and practical tasks, so students could see how they were progressing in mastering the material. Nazareno and Francisco (2021) suggest that competency-based modules are most effective when outcomes can be clearly measured. This enables teachers to offer targeted support to students who require it. These high scores demonstrate that the module not only meets academic requirements but also equips students with skills crucial for securing employment and entrepreneurship, aligning with the TVL framework. This means the module serves as a stepping stone to lifelong learning, equipping students with the skills to transcend compliance and discover practical craft applications and career paths.

With an overall mean score of 4.40, "The modules reflect TESDA's dressmaking competency standards" received the lowest score, yet it was still rated as Strongly Agree. This means that, although both students and teachers agreed with the TESDA alignment, there may be areas where industry-specific standards or NC II benchmarks could be emphasized more. Garcia and Molina (2022) argue that aligning secondary-level TVL modules with TESDA standards better prepares students for certification and job opportunities. This slightly lower score highlights the importance of incorporating TESDA-aligned performance tasks, such as pattern drawing, accurate measuring, and adherence to machine handling standards. In the future, the module could be improved by incorporating TESDA-style checklist rubrics or additional competency guides. This would make it ready for the classroom and also recognized by the business world.

Usability And Practicality in Classroom and Modular Settings

This is the applicability and adaptability of modules in both face-to-face and self-directed learning contexts. Table 15 shows the Usability and Practicality in Classroom and Modular Settings.

Table 15. Usability And Practicality in Classroom and Modular Settings

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
The modules can be used independently by students.	4.90	0.56	4.20	0.23	4.55	0.40	**Strongly Agree**
The materials are easy to reproduce and distribute.	4.60	0.45	4.50	0.23	4.55	0.34	**Strongly Agree**
The activities are doable with available resources.	4.50	0.45	4.20	0.35	4.35	0.40	**Strongly Agree**
The modules can be	4.70	0.65	4.20	0.46	4.45	0.56	**Strongly Agree**

used in both classroom and modular settings.							
The modules can supplement teachers' lesson delivery.	4.80	0.76	4.50	0.67	4.65	0.72	**Strongly Agree**
Time allocation for activities is appropriate.	4.30	0.32	4.30	0.54	4.30	0.43	**Strongly Agree**
Average Weighted Mean	**4.63**	**0.53**	**4.32**	**0.41**	**4.48**	**0.47**	**Strongly Agree**

Table 15 illustrates the effectiveness and practicality of the developed dressmaking modules in both classroom and modular learning environments. The overall weighted mean score is 4.48, indicating a response of "Strongly Agree." Teachers gave it a slightly higher score (WM = 4.63) than learners did (WM = 4.32). This means that both reviewers consider the modules to be handy, flexible, and easy to use. This means that they can be used for both guided instruction and self- paced learning, which is important in flexible delivery methods like Blended TVL or Distance Learning.

"The modules can supplement teachers' lesson delivery" (WM = 4.65) and "The modules can be used independently by students" (WM = 4.55) got the most votes. This indicates that the module is viewed as both a teaching aid and a standalone piece of work, a concept known as dual-role functionality. Navarro and Santos (2021) argue that effective learning materials should reduce students' dependence on teachers, providing them with more autonomy, particularly when structured into modules. Because of this finding, the module makes things easier for teachers by providing pre-made lessons. It also gives students a chance to review and practice their skills without needing direct supervision. This means schools can utilize the module for both regular classes and programs, catering to students who need additional support or wish to learn more, thereby extending its use beyond regular lessons.

"Time allocation for activities is appropriate" (WM = 4.30) received the lowest score, yet it remained above "Strongly Agree." This means that, depending on the learner's speed and the resources available, some activities may require more or less time. Del Valle (2022) says that in modular learning, task length must be flexible because students work at different speeds depending on their home conditions and the resources they have access to. This relatively low score indicates that you should provide time-range options instead of fixed time requirements, such as "suggested duration" versus "extended duration." Pacing guides or different due dates for tasks could be added in the future to ensure that fast learners stay challenged and slow learners are not overextended.

Summary of Results

Table 16 presents the results of the level of acceptability of the developed dressmaking modules, as evaluated by experts and teachers.

Table 16 Summary of Results

Indicators	**Teachers**		**Learners**		**Overall**		**Interpretation**
	WM	**SD**	**WM**	**SD**	**WM**	**SD**	
Content quality and accuracy	**4.68**	**0.46**	**4.10**	**0.79**	**4.39**	**0.63**	**Strongly Agree**
Clarity of instructions and organization	**4.75**	**0.26**	**4.65**	**0.59**	**4.70**	**0.43**	**Strongly Agree**
Alignment with curriculum standards and competencies	**4.82**	**0.29**	**4.48**	**0.60**	**4.65**	**0.45**	**Strongly Agree**
Usability and practicality in classroom and modular settings	**4.63**	**0.53**	**4.32**	**0.41**	**4.48**	**0.47**	**Strongly Agree**
Average Weighted Mean	**4.72**	**0.39**	**4.39**	**0.60**	**4.55**	**0.49**	**Strongly Agree**

Four main areas were evaluated when judging the developed dressmaking modules: the quality and

accuracy of the content, the clarity and organization of the instructions, their alignment with curriculum standards and competencies, and their usefulness and ease of use. With an overall weighted mean of 4.55 (Strongly Agree), the composite results show that both teachers and students agreed that the modules were perfect for use as teaching materials. Teachers gave the module higher overall ratings (4.72) than students (4.39), indicating that teachers perceived it as more academically challenging and better aligned with their lessons. On the other hand, students gave it slightly lower ratings (but still very high), which suggests that they thought it could be applied in real life.

Alignment with Curriculum Standards and Competencies got the highest score, 4.65 out of 5. This demonstrates that the modules align with DepEd's K–12 TVL Dressmaking framework and are structured to meet TESDA standards for competency-based learning. This strong alignment makes the module more reliable as both a learning tool and a means of certification. According to Flores and Agustin (2021), learning materials based on formal competency standards make students more prepared and more employable. This finding indicates that the module can be easily integrated into official learning plans. It also means that it could be used as extra material for programs that prepare students for national certification.

With an overall mean score of 4.39, Content Quality and Accuracy received the lowest score; yet it was still rated as "Strongly Agree." This slightly lower rating, especially from students, suggests that while the content is accurate primarily and helpful, some explanations or examples may need to be made easier to understand or provided with more background information. According to Alvarez and Rivera (2022), students in modular settings often struggle not with the complexity of the material but with understanding its relevance to their situation. This result highlights the need to strengthen real-life clothing-making scenarios, localized examples, or more visual demonstrations. This means that improvements could include video tutorials linked to QR codes, troubleshooting guides, or differentiating task extensions to help students from a range of backgrounds.

HANDS-ON COMPETENCY OF STUDENTS

Standardized competency-based rubrics were used to assess the practical application of the dressmaking modules through students' hands-on work. The test focused on three main skill areas that are necessary to make clothes: (1) basic sewing skills, (2) building and finishing clothes, and (3) creativity and craftsmanship. Real performance tasks, designed to mimic actual dressmaking processes, were used to measure these indicators. The sections that follow present the outcomes of this evaluation, examining the extent to which the modules helped students improve their technical skills.

Basic Sewing Techniques

This domain focuses on the fundamental skills in stitching, hemming, and fabric handling. Table 17 shows the basic sewing techniques.

Table 17. Basic Sewing Techniques

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
Accuracy of stitches	4.30	0.66	4.10	0.45	4.20	0.56	**Very Satisfactory**
Consistency of seam allowance	4.20	0.67	4.10	0.42	4.15	0.55	**Very Satisfactory**
Proper use of sewing tools	4.34	0.45	4.50	0.32	4.42	0.39	**Excellent**
Application of safety measures	4.10	0.62	4.10	0.34	4.10	0.48	**Very Satisfactory**
Speed and efficiency	4.00	0.62	3.20	0.44	3.60	0.53	**Very Satisfactory**

Quality of finishing	3.60	0.65	3.10	0.45	3.35	0.55	**Satisfactory**
Average Weighted Mean	**4.09**	**0.61**	**3.85**	**0.40**	**3.97**	**0.51**	**Very Satisfactory**

Legend:

4.21-5.00 Excellent
3.41- 4.20 Very Satisfactory
2.61 -3.40 Satisfactory
1.81- 2.60 Fair
1.00-1.80 Poor

Table 17 illustrates the extent to which students acquired basic sewing skills by practicing them independently after using the developed modules. Overall, the score of 3.97 is considered Very Satisfactory, indicating that students demonstrated a good understanding of sewing basic items. Teachers gave slightly higher ratings for performance (WM = 4.09) than students did (WM = 3.85), which suggests that while learners were confident, teachers perceived them as using techniques more precisely.

With an overall weighted mean score of 4.42 (Excellent), "Proper use of sewing tools" got the highest score. These results indicate that students became proficient in using essential sewing tools, including sewing machines, scissors, needles, and pins. Carreon and Santos (2021) argue that learning how to use tools properly is a crucial aspect of TVL training, as it ensures safety, accuracy, and readiness for work. This result shows that the modules were effective in helping students learn how to perform tasks and coordinate their motor skills, which is crucial for sewing clothes. This means that in future modules, there may be more challenging tool-based tasks that help students prepare for higher standards, such as the TESDA NC II Benchmarks.

The indicator with the lowest score was "Quality of finishing," which got a weighted mean of 3.35 (Satisfactory). It was followed by "Speed and efficiency," which got a score of 3.60 (Very Satisfactory). The results indicate that learners performed well on basic tasks; however, they still need to work on refining their final products, particularly in terms of seam neatness, thread trimming, and edge control. As Guzman and Robles (2022) point out, improving the quality of your finishing often takes practice and exposure to standard methods used in the industry, which students may not fully grasp during the initial stages of their training. Because of this finding, students may require additional practice drills and peer review sessions to transition from functional competency to craftsmanship- level execution. As a result, self-evaluation checklists and guided reflection tools should be incorporated into modules to help students track their own progress more easily.

Garment Construction and Finishing

The ability to assemble clothing pieces accurately and apply appropriate finishing techniques. Table 18 presents the garment construction and finishing.

Table 18. Garment Construction and Finishing

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
Accuracy of measurement and cutting	4.20	0.67	4.10	0.45	4.15	0.56	**Very Satisfactory**
Proper assembly of garment parts	4.20	0.66	4.20	0.43	4.20	0.55	**Very Satisfactory**
Neatness of seams and edges	4.50	0.69	4.50	0.32	4.50	0.51	**Excellent**
Functionality of zippers/buttons	4.30	0.66	4.50	0.32	4.40	0.49	**Excellent**
Overall fit of garment	3.80	0.67	4.20	0.21	4.00	0.44	**Very Satisfactory**
Durability and craftsmanship	4.50	0.66	4.10	0.56	4.30	0.61	**Excellent**

Average Weighted Mean	**4.25**	**0.67**	**4.27**	**0.38**	**4.26**	**0.53**	**Excellent**

Table 18 illustrates the students' proficiency in creating and finishing clothes after utilizing the developed modules. The overall weighted mean score of

4.26 was considered "Excellent," indicating that most students successfully created clothes that were both functional and aesthetically pleasing.

Interestingly, teachers (WM = 4.25) and students (WM = 4.27) gave almost identical ratings. This indicates that external evaluation and self-evaluation are consistent, which enhances the reliability of the results.

"Neatness of seams and edges" (WM = 4.50) and "Durability and craftsmanship" (WM = 4.30), both rated as Excellent, were the best indicators. "Functionality of zippers and buttons" (WM = 4.40) was also rated as Excellent. These scores demonstrate that students not only completed the sewing steps correctly but also ensured the items would last and be useful, which is crucial for real-life applications. Felix and Montales (2021) state that mastering finishing skills, such as seam uniformity and fastening accuracy, is a key indicator of readiness for the fashion industry. Based on these high scores, the module has effectively taught students how to create polished products suitable for real-life applications or business use. As a result, students may now be ready to move on to projects that generate income or TESDA qualification tests, since their performance aligns with NC II-level indicators.

With a weighted mean score of 4.00 (Very Satisfactory), "Overall fit of garment" got the lowest score. This means that even though the clothes were well- made, they may still require some minor alignment or body-proportion adjustments. Domingo and Vergara (2022) suggest that achieving the right fit requires advanced measurement accuracy and consideration of body type, which most people learn through practice. As a result of this finding, learners can successfully assemble clothes; however, they may require additional experience or one-on-one mentoring to develop their tailoring skills further. As a result, the module could be improved by adding optional advanced exercises on how to change patterns, scale sizes, or address fitting problems. These would help students move from basic skills to advanced craftsmanship.

Creativity and Craftsmanship as Evaluated Using Performance Rubrics

Table 19 shows the originality, neatness, precision, and aesthetic quality of the students' dressmaking outputs. This refers to the creativity and craftsmanship as evaluated using the performance rubrics.

Table 19. Creativity and Craftsmanship as Evaluated Using Performance Rubrics

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
Originality of design	4.5	0.62	4.3	0.79	4.40	0.71	**Excellent**
Aesthetic quality of output	4.2	0.67	3.2	0.86	3.70	0.77	**Very Satisfactory**
Use of color and fabric combinations	4.8	0.65	3.5	0.89	4.15	0.77	**Very Satisfactory**
Resourcefulness in using materials	4.8	0.45	3.6	0.75	4.20	0.60	**Very Satisfactory**
Attention to detail	4.3	0.43	3.5	0.65	3.90	0.54	**Very Satisfactory**
Overall presentation of final product	4.5	0.46	4	0.79	4.25	0.63	**Excellent**
Average Weighted Mean	**4.52**	**0.55**	**3.68**	**0.79**	**4.10**	**0.67**	**Very Satisfactory**

Table 19 illustrates the creative and skilled outcomes achieved by learners after utilizing the modules they created. The overall score was 4.10, indicating a rating of "Very Satisfactory." This means that while learners did a good job of being creative and skilled, there is still room for improvement in the visual presentation of their designs and their resource utilization. Teachers gave a higher overall mean score (4.52 for Excellent) than students did (3.68 for Very Satisfactory), indicating that teachers perceived the outputs as better than the learners did. This could mean that learners do not believe in themselves, even when they have performed well.

The "Originality of design" (WM = 4.40, Excellent) and "Overall presentation of final product" (WM = 4.25, Excellent) received the highest scores. These results demonstrate that students successfully utilized their imagination to create unique clothing designs and present finished products of satisfactory quality. Cruz and Manalo (2021) argue that encouraging creativity in technical and vocational education not only enhances learners' skills but also increases their likelihood of becoming entrepreneurs, as they are encouraged to develop products that can be sold. This result indicates that the modules effectively encouraged students to think creatively and express their innovative ideas. This means that in future versions of the module, tasks that focus on creativity can be expanded, such as design challenges, mini fashion shows, or project-based competitions, to help students improve their ability to generate new ideas.

"Aesthetic quality of output" (WM = 3.70, Very Satisfactory) and "Attention to detail" (WM = 3.90, Very Satisfactory) got the lowest scores from both students and teachers. This means that even though the students did practical work, it was not always finished well or had good proportions or style. Villareal and Santos (2022) argue that dressmaking craftsmanship demands precision and extensive practice, which new students may struggle to acquire due to the limited training sessions. The effect of these lower ratings is that students require more practice in completing small details and exercising their artistic judgment when designing clothes. This means that the module could be improved with the addition of guided peer review activities, self-assessment rubrics, and mentor-led demonstrations that provide more detailed guidance on enhancing appearance and accuracy.

Summary of Results

Table 20 shows the results on the level of hands-on competency of students using the modules.

Indicator	Teachers		Learners		Overall		Interpretation
	WM	SD	WM	SD	WM	SD	
basic sewing techniques	**4.0G**	**0.61**	**3.85**	**0.4**	**3.G7**	**0.51**	**Very Satisfactory**
garment construction and finishing	**4.25**	**0.67**	**4.27**	**0.38**	**4.26**	**0.53**	**Excellent**
creativity and craftsmanship as evaluated using performance rubrics	**4.52**	**0.55**	**3.68**	**0.7G**	**4.10**	**0.67**	**Very Satisfactory**
Average Weighted Mean	**4.2G**	**0.61**	**3.G3**	**0.52**	**4.11**	**0.57**	**Very Satisfactory**

Table 20 Summary of Results

Table 20 presents an overall picture of the students' performance in the three main areas of hands-on competence examined in this study. The overall weighted mean score was 4.11, indicating a level of "Very Satisfactory." This means that the dressmaking modules were generally effective in helping students acquire valuable skills. Teachers gave a slightly higher rating (WM = 4.29) than students did (WM = 3.93), which suggests that teachers thought the students performed better than they actually did, while students were usually less critical of their own work With an overall mean score of 4.26 (Excellent), Garment Construction and Finishing got the highest score. This result demonstrates that students successfully assembled clothes with correct alignment, durability, and functional parts, indicating their proficiency in using dressmaking techniques. Lazaro and Dizon

(2021) state that mastering construction techniques is a key indicator of readiness to create clothes in the real world or pursue TESDA certification in the future. This finding suggests that the modules effectively taught students how to design and create wearable items that can be sold. This means schools can now utilize these modules for business projects, skill shows, or work immersion training as part of the TVL track.

With an overall mean score of 3.97, Basic Sewing Techniques received the lowest score, yet it was still rated as Very Satisfactory. The results indicate that the students demonstrated proficiency in basic skills; however, they still need to work on improving their stitching accuracy, seam consistency, and precision control. For early skill development in technical and vocational education, as Bernardo and Villanueva (2022) emphasize, students need to practice and receive feedback repeatedly in order to progress from basic competence to mastery. This score shows that students may still benefit from practice-based feedback and one- on-one help with corrections. The modules could be improved by incorporating additional skill drills or activities that enable students to assist one another in enhancing their basic craftsmanship skills.

SIGNIFICANT DIFFERENCE

There is a need to determine whether there is a significant difference between students' academic performance and hands-on competency before and after the implementation of the developed modules. Table 21 shows whether there is a significant difference between students' academic performance and hands-on competency before and after the implementation of the developed modules.

Table 21 SIGNIFICANT DIFFERENCE

variable	df	computed chi-square	critical value	Decision	Interpretation
significant difference between students' academic performance and hands-on competency before and after the implementation of the developed modules	64	24.13	16.92	Reject	Significant Relationship

Table 21 presents the statistical test results, which reveal a significant difference in students' academic performance and their ability to perform manual tasks before and after implementing the dressmaking modules. The chi-square value of 24.13 was higher than the critical value of 16.92 with 83 degrees of freedom, which meant that the null hypothesis could not be accurate. This indicates a significant difference in the students' performance before and after using the modules. This demonstrates that intervention improved both their theoretical knowledge and their ability to apply their dressmaking skills in real-life situations.

This result aligns with the findings of Santiago and Flores (2021). They noted that contextualized and well-structured learning modules significantly improve student outcomes when aligned with academic and skills-based standards. The impact of this result strongly supports the usefulness of the developed modules as a teaching tool, leading to measurable progress. This means that the modules could be used as official extra or primary learning materials for TVL Dressmaking programs. They could also be adapted to meet the needs of other schools in the division or region.

CHALLENGES

This part presents the challenges TVL Dressmaking students and teachers encounter in using the developed dressmaking modules in modular learning.

Table 22 presents a summary of the problems encountered by TVL dressmaking students and teachers when implementing the modules they helped create. The biggest problem was that learners

lacked easy access to sewing machines and other tools, making it difficult for them to engage in hands-on activities. These results support the idea that even the best modules are less effective when there are insufficient materials, especially for skill-based subjects where practice is crucial. As Ramos and Bautista (2022) pointed out, having access to valuable tools is a key factor in mastering skills in technical and vocational education; without it, skill development is significantly hindered.

Table 22 CHALLENGEs

Challenges and Barriers	Rank
Limited access to sewing machines and tools affected module implementation.	**1**
Students felt less motivated to complete dressmaking tasks in modular learning compared to face-to-face instruction.	**2**
Instructions in the modules were sometimes unclear or complicated to follow.	**3**
Time constraints made it difficult to complete performance tasks.	**4**
Some students struggled to balance dressmaking activities with other academic requirements at home.	**5**
Lack of sufficient fabric and materials hindered task completion.	**6**
Internet connectivity and a lack of digital resources made learning more challenging.	**7**
Modular learning limited opportunities for immediate feedback from teachers.	**8**
Students struggled to learn independently without constant teacher guidance.	**9**
Teachers had trouble in monitoring students' progress and providing timely assistance.	**10**

The second significant issue was that students were less motivated to learn in modules compared to face-to-face classes. This could be because they were not able to interact with each other or the teacher as much. This aligns with the findings of Del Mundo and Caballero in 2021. They said that modular delivery can make people tired of their work and less likely to stick with it if they do not receive feedback or motivation. The third-ranked concern, unclear or hard-to- understand instructions, highlights the need for more simplification or multimodal support, such as visuals or videos that illustrate each step.

Time constraints, trouble balancing schoolwork, a lack of fabric and materials, and slow internet access were some of the recurring problems. These issues demonstrate that home-based TVL learning presents both environmental and logistical challenges. The least important problems were not receiving immediate feedback from teachers, having trouble keeping track of students, and not being able to learn independently. This suggests that even though dressmaking can be taught through modules, it is still most effective when students are guided through the process.

The results suggest that the dressmaking modules were practical, but their impact will be maximized when accompanied by supportive learning environments and materials. To ensure everyone has equal access to tools and materials, schools should strengthen the implementation process by providing borrower kits or setting aside dedicated sewing stations. It is also important to have regular feedback checkpoints, which can be done virtually or in person as planned, to keep students motivated and catch mistakes early. To support students who struggle with independent learning, clearer instructional scaffolds should also be implemented. These could be visual guides,

step-by-step demonstrations, or peer support systems. Overall, the results clearly indicate that modules alone cannot guarantee mastery. They need to be combined with structured facilitation and logistical support to create a skill-building environment that is inclusive and effective.

CHAPTER 4

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Chapter 4 presents a summary of the study, including the significant findings based on the research questions, the conclusions drawn from the statistical results, and recommendations for further enhancing and implementing the developed dressmaking modules.

Summary

This study examined the effectiveness of dressmaking learning modules in enhancing the academic performance and practical skills of junior high school students in the Technical-Vocational-Livelihood (TVL) Dressmaking Specialization at several public secondary schools in the South District, Division of Mandaue City. The study looked at the age, gender, level of education, teaching experience, and exposure to dressmaking skills and learning resources of both students and teachers.

Before and after the intervention, students took tests to assess their school improvement. Performance-based rubrics were used to evaluate basic sewing skills, garment construction, finishing, creativity, and craftsmanship. Teachers and students agreed that the modules were acceptable based on the quality and accuracy of the content, the clarity of the instructions, their alignment with the curriculum, and their suitability for use in the classroom and in modular settings. The study also examined the problems encountered during use and investigated whether there was a significant difference in performance before and after the module was implemented.

Findings

The significant findings are as follows:

Teacher-respondents were predominantly female, within the 41–45 age range, holding units or completion of graduate studies, with 11–15 years of teaching experience, and having attended an average of 15.2 professional trainings. Learners were mainly female, aged 14–15, and enrolled in Grades 9 and

10. A large portion had school-based or home-based exposure to dressmaking, while some reported no prior experience. Most learners had access to basic sewing tools and printed modules, but only half had sewing machines or fabric at home.

In terms of academic performance, students improved from an Average Mastery Level (M = 3.7) in the pretest to a Level of Closely Approximating Mastery (M = 8.2) in the posttest, indicating a substantial academic gain.

The acceptability of the modules received Strongly Agree ratings in all four domains—clarity of instructions (WM = 4.70), alignment with curriculum standards (WM = 4.65), content quality (WM = 4.39), and usability (WM = 4.48). For hands- on performance, learners achieved Excellent competence in Garment Construction and Finishing (WM = 4.26) and Very Satisfactory ratings in Basic Sewing (WM = 3.97) and Creativity and Craftsmanship (WM = 4.10).

Statistical testing revealed a significant difference between pre- and post- implementation performance, confirming that the modules had a positive impact on both knowledge and hands-on skills. The top challenges encountered included limited access to sewing machines, low motivation in modular learning, insufficient materials, and a lack of immediate feedback from teachers during home-based activities.

Conclusions

The findings conclude that the developed dressmaking modules are valid, acceptable, and effective instructional tools for TVL learners. The modules not only enhanced academic understanding but also strengthened hands-on competencies, as evidenced by significant improvements in both pre-post test scores and performance outputs. The positive acceptability ratings from both teachers and learners affirm that the modules are curriculum-aligned, clearly structured, and usable across different learning modalities. However, resource limitations and motivational challenges emphasize that learning materials alone are insufficient without support mechanisms and guided facilitation.

Recommendations

Based on the study's findings, the developed dressmaking modules should be officially integrated as supplementary or primary instructional materials for TVL Garments programs in Mandaue City, with the potential for wider pilot implementation in other public secondary schools offering the same specialization.

To mitigate disparities in resource access, schools should implement borrower sewing kits or establish school-based sewing stations, thereby enabling all learners, irrespective of their home circumstances, to engage effectively in performance tasks. Additionally, integrating hybrid feedback mechanisms, such as scheduled consultations, peer critique sessions, and QR-linked digital submissions, can enhance motivation and provide more effective guidance for learners in modular learning environments. Future iterations of the modules should incorporate improved scaffolds, including step-by-step visuals, video demonstrations, and pacing guides, to assist both novice and advanced learners. School administrators and curriculum developers should align the module for future integration into TESDA NC II preparatory training or entrepreneurship-based livelihood projects to enhance its applicability beyond classroom instruction.

CHAPTER 5 OUTPUT OF THE STUDY

RATIONALE

The study found that Junior High School learners in the TVL Dressmaking specialization had foundational knowledge of dressmaking concepts, but struggled to apply them consistently in hands-on tasks, such as pattern drafting, sewing accuracy, and garment finishing. This skill gap was mainly attributed to fragmented instructional materials and limited structured practice opportunities.

In response, this study produced a Validated and Developed Set of TVL Dressmaking Learning Modules, designed to align theoretical instruction with practical performance tasks seamlessly. Each module includes:

- Simplified lessons with visual guides for accessibility
- Step-by-step sewing activities for skill mastery
- Performance rubrics and self-check tools for progress monitoring

This output serves not only as supplementary material but as a complete instructional framework that ensures modular learning leads to authentic craftsmanship and industry-relevant competency.

OBJECTIVES

The TVL Dressmaking–Garments Validated Learning Module Package aimed to:

a. Provide structured, competency-based instructional materials aligned with DepEd TVL standards and TESDA NC II skill requirements.

b. Integrate academic lessons with hands-on garment construction tasks to reinforce both knowledge and performance;

c. Serve as a standardized material for classroom, modular, and blended instruction in Dressmaking across TVL schools in Mandaue City.

SCHEME OF IMPLEMENTATION

The module development process followed a Development–Validation– Implementation Model. Dressmaking teachers, learners, and industry experts collaborated to pilot prototype modules, identify gaps, and refine lessons.

Modules were implemented within regular TLE/TVL sessions where learners:

- Answered theoretical guides,
- Performed guided sewing tasks,
- Logged outputs through progress sheets and photos,
- Evaluated their work using performance rubrics.

Teacher feedback and learner reflections were used to revise layout, wording, and difficulty progression, resulting in a validated final version ready for regional replication.

SCHEME OF IMPLEMENTATION

Areas of Concern	Objectives	Strategies	Persons Involved	Budg et	Source of Budget	Time Frame	Expected Output	Actual Accomplishments	Remarks
Module Content Developme nt	To draft competency-based Dressmaking modules aligned with curriculum standards	Write lesson guides with activity sheets, sewing templates, and reflection logs	Research er, TVL Teachers	₱8,00 0	MOOE / Resear ch Fund	Phase 1 – October 2025	Drafted Modules for 8 Competenc ies		
Expert Validation	To ensure accuracy, usability, and industry relevance	Conduct a review with the DepEd Supervisor, the TESDA-certified dressmaker, and the master teacher	School Head, Experts Panel	₱3,00 0	Donatio ns / PTA	Novemb er 2025	Validation Summary & Revisions		
Pilot Implementat ion	To test modules in a real classroom/mod ular setting	Administer modules to the selected Dressmaking class	TVL Teachers, Learners	₱5,00 0	Learnin g Support Fund	Decemb er 2025	Performan ce Outputs (Photos, Rubrics)		
Revision & Finalization	To refine modules based on feedback	Adjust layout, wording, and pacing according to recommendati ons	Research er, Layout Artist	₱2,50 0	School Printing Fund	January 2026	Final Validated Module Package		
Printing & Deployment	To distribute finalized modules	Print and reproduce copies for each TVL teacher	School Head, TVL Coordinat or	₱15,0 00	DepEd / LGU / Sponso rs	Februar y 2026	Printed Modules per Class Section		

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