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Effectiveness of Localized Self-Learning Module in Grade 11 Students' Performance in Hairdressing

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Abstract — The COVID19 pandemic has created a serious catastrophic impact on the world's education systems, affecting almost 1.6 billion students all over the globe was seriously affected due to school closures and other learning area. To address this teacher have started to localize the learning materials to make it relatable to the learner's context least, which in a way sustains, and enlivens their learning motivation.
This study conducted to determine the effectiveness of localized self -learning module in Grade 11 student's performance in hairdressing of Calamba Bayside Integrated School Division of Calamba.Pre-experimental design-one group pretest, formative and posttest design was used in this study.
The respondents were given three instruments: pretest, formative, and posttest. Each test consists of 35 items which measure the learners understanding of Hair and Scalp Treatment and Hair Perming.
Based on the finding the researcher concluded that there is no significant difference between pretest and posttest mean score of the experimental group in the 1st quarter and 2nd quarter.
The researcher recommends that there is examine and sharing of localized instructional materials and best practices in localizing learning materials must be pursued to equip teachers with skills and competence in executing lessons using localization process.

Keywords — Localized Self-Learning Module, Pretest, Posttest, Formative Test

I. Introduction

The COVID19 pandemic has created a serious catastrophic impact on the world' education systems, affecting almost 1.6 billion students across the globe (United Nations report, 2020; Zhdanov, 2022). It was reported that almost 94% to 99% of the world's student population was seriously affected due to school closures and other learning centers. Even the educational development aid was deemed affected due to the worsening gaps in pre-COVID-19 education funding. Noticeably, the COVID-19 situation continuously imperils the nations of the world, which has fundamentally reshaped major global trendlines in schooling in the years to come.

Amidst the battle in the Philippines, the Department of Education (DepEd) firmly believes that education is essential and must not be denied among all learners, especially during these trying

times. The right of the children to education must still be protected despite the threats of the pandemic situation.

In the new normal of education, various learning modalities were provided to cater the needs of the students in relation also with their capacity and accessibility. While online learning is for those who have the access to the internet and is for those who have computers to use, the modular learning modality is mostly offered to students who have no means to sustain education at a distance leaving them with little interaction to no interaction at all with their teachers.

In modular learning, students merely rely on printed instructions from their modules. Therefore, there is a need for the students to enhance their reading comprehension since reading has become a necessity to attain learning through modules. Golimlim (2021) stated that if the learners cannot fully comprehend the written text, there would be a hindrance for the learners to succeed in modular instruction [1].

Some studies cited that modular learning resulted in the low academic performance and lack of learning motivation of the learners. This is due to lack of meaningful interaction between the module and the learners unlike face-to-face learning in which personal attachment is essentially built. Dargo & Dimas (2021) found out that the general weighted average of the students has decreased after the implementation of modular learning. They argued that although modular learning strengthens family relationships, fosters independent learning, and is cost- effective, this still forwards different demands and challenges such as additional burden for parents, lack of socialization, exposure to numerous distractions, and limited teacher-learner interaction [2].

To address this, teachers have started to localize the learning module to make it relatable to the learners' context at least, which in a way, sustains and enlivens their learning motivation. Center for Occupational Research and Development (2012), as cited in Garin et al. (2017) stated that if the students are taught with concepts that can be used in real-work contexts and know why they are learning through localization, there will be a significant increase in the student engagement [4].

Kukulska -Hulme (2013) defined localized self-learning modules as the use of printed materials in skill acquisition where portability provides a user-rich experience [5]. Factors such as accessibility, immediacy, interactivity, and schooling are also crucial in localized self-learning modules (Ogata & Yano, 2005) [6]. Furthermore, Ghallab (2020) mentioned that localized self-learning modules assist students and teachers[7].

In the present research, the localized self-learning module as a learning resource paved the way for the researcher to improve the teaching and learning Technology and Livelihood Education for Hairdressing NC II students. The researcher who has been teaching for a couple of years witnessed the struggles and challenges of educators and students in teaching and learning skills, especially for modular learning modality. This impediment has stimulated timely and relevant innovations to tie the loose ends and bridge the gaps of learning.

In addition, this research sought to improve the teaching-learning process especially in teaching Hairdressing NC II subjects among the senior school students in Calamba Bayside Integrated School. The developed localized self-learning module aims to promote better engagement with students, offering varied educational resources accessible even for offline learning. Also, this research strives to empower students as active knowledge constructors in line with the demands of the 21st century.

Objectives of the Study

This study examined effectiveness of localized self-learning module in grade 11 student's performance in hairdressing. In addition, the study was conducted at Calamba Bayside Integrated School of Division of Calamba City during the academic year 2021 to 2022. There were only twenty-twenty (25) students who served as the participants of the pre-experimental study. This pre-experimental study was implemented during the 1st and 2nd quarters only.

To determine the performance in hairdressing, scores obtained from pretest, formative test and posttest were used.

II. Methodology

Research Design

To quantify the effectiveness of the developed localized self-learning module in teaching TLE for senior high schools streamline for Hybrid learning, pre-experimental research design was used. Jimenez-Buedo (2022) defined pre-experimental design aims to test and determine the possible change occurring in a group after the treatment has been applied.

Voxco (2022) further explained that pre-experimental design makes use of one or more experimental groups that are being observed against the treatments. This only follows the basic steps in conducting experiments. Unlike the quasi-experimental research design that has been typically used when examining the effectiveness of the intervention, this does not include any comparison group.

Among the types of pre-experimental research design, the one-group pretest-posttest design was utilized in this research. This type of pre-experimental design involves only one group that is being observed and studied at a single point in time to determine if the intervention or treatment has brought changes. To determine the changes, pretest and posttest were conducted.

The present study used twenty-five (25) Grade 11 students of Hairdressing class to determine the effectiveness of the developed localized self-learning module. Pretest was given to these students to determine their level of understanding and knowledge about hairdressing prior to the application of the developed localized self-learning module. After weeks of implementation, a posttest was provided to determine if there is improvement in the performance in hairdressing.

Similarly, Cece (2017) also conducted a study that made use of the pre-experimental design -one group pretest and posttest design. In her study, she determined the effectiveness of direct methods in improving the speaking skills of the 20 students focusing on the vocabulary and fluency aspects. She also used the pretest and posttest assessment tools to determine the effectiveness.

In relation to the expected outcomes of the study, Policarpio (2018) investigated the effects of using localized instructional materials in teaching grammar on the academic performance in English among multilingual learners in Tarlac, Philippines using experimental method. The results showed that those students who made use of localized instructional materials performed significantly better than those who utilized the traditional instructional materials. In the same manner, Lear (2020) examined the the effectiveness of the contextualized and localized instructional material in Sinama for grade 1pupils. One Hundred pupils (grade 1) participated in the study. The results showed that contextualized and localized instructional material in Sinama was an effective intervention for the improvement of the pupils' achievement.

Participants of the study

The participants of the study a grade 11 students' senior high school of Calamba Bayside Integrated School Division of Calamba City. These participants were enrolled in hairdressing. There was only one group consisting of 25 students who were selected based on the match-pairing technique.

In match-pairing technique, the researcher used the pretest in selecting the participants in this research. Those students who have almost similar scores were included in the study.

Research Instrument

There were three instruments used in the study: pretest and posttest. Each test consists of 35 items which measure the learners' understanding of Hair and Scalp Treatment and Hair Perming. These 35 items made use of a multiple-choice type of test to ensure that metacognitive analysis and critical thinking skills were thoroughly applied while answering the said test. Also, the researcher made use of Table of Specifications (TOS) to make sure that all items are properly distributed across the learning objectives in each quarter.

The results of the pretest and posttest were interpreted using the level of proficiency adapted from DepEd Order 73, s. 2012. Below is the level and percent of proficiency.

Level	Percent
Beginning	74 and below
Developing	75 – 79
Approaching Proficiency	80 – 84
Proficient	85 – 89
Advanced	90 and Above

III. Results and Discussion

Table 1 presents the first quarter students' pretest and posttest mean scores in hair treatment.

Table 1. First Quarter Students' Pretest and Posttest Mean Scores in Hair Treatment

Test	Mean	SD	Descriptive Interpretation
Pretest	3.52	0.92	Beginning
Posttest	4.20	0.91	Approaching Proficiency

Legend: 4.48-5.00 or 90-100% Advanced (A); 4.23-4.47 or 85-89% Proficient (P); 3.98-4.22 or 80-84% Approaching Proficiency (AP) 3.73-3.97 or 75-79% Developing (D); and 3.72 & below or 74% & below Beginning (B)

Table 1 shows the first quarter students' pretest and posttest mean scores in hair treatment. It shows that there is a little improvement in the result of the scores from before the treatment and after the treatment. Before the application of the localized self-learning module, the level of proficiency of the learners in hair treatment was only "beginning" (Mean 3.52; SD = 0.92). However, this has been improved after exposing Grade 11 learners to the tested instructional material indicating approaching proficiency level (Mean= 4.20; SD= 0.91).

The result implies that the localized learning material in hairdressing has forwarded significant improvement in the skills acquisition and knowledge of the Grade 11 students. Through localization, the contents were easier to grasp and understand as those were taught within the local contexts. The established connection to the contents of the learning as prescribed by the localization process positively influenced the level of understanding of the concepts related to hair and scalp treatment.

In relation, according to Manuel (2019), localized instructional materials and contextualized teaching resources were crucial to educational transformation. Regarding meeting the students' immediate needs, the localized materials resulted in an improved academic achievement of the students. Additionally, it demonstrated positive results in the learners' performance as a successful method of transferring students' capacity for lifelong learning.

Table 2 presents the Second Quarter Students' Pretest and Posttest Mean Scores in Hair Perming.

Table 2. Second Quarter Students' Pretest and Posttest Mean Scores in Hair Perming

Test	Mean	SD	Descriptive Interpretation
Pretest	3.32	0.69	Beginning
Posttest	4.36	0.76	Proficient

Legend: 4.48-5.00 or 90-100% Advanced (A); 4.23-4.47 or 85-89% Proficient (P); 3.98-4.22 or 80-84% Approaching Proficiency (AP) 3.73-3.97 or 75-79% Developing (D); and 3.72 & below or 74% & below Beginning (B)

Table 2 shows the second quarter students' pretest and Posttest Mean Scores in Hair Perming is a significant improvement in the result of the scores from before the treatment and after the treatment. Before the application of the localized self-learning module, the level of proficiency of the learners in hair perming topic was only "beginning" (Mean 3.32; SD = 0.69). However, this has been increased after exposing Grade 11 learners to the developed localized self-learning module indicating proficient level (Mean= 4.20; SD= 0.91).

Just like in the 1st quarter, the result for the succeeding quarter also implies that the development of localized self-learning modules has positively affected the learning performance of the students based on the scores obtained from the assessment tools. The learning activities in the module have strengthened the understanding of the learners of the concepts related to hair perming. Also, the contents of the learning module are arranged in a manner that provides opportunities to have a deeper understanding of the concepts from easiest to the most difficult.

Similarly, Lorbis (2019) revealed that localization of materials is one promising strategy to support successful learning by helping students develop a deeper knowledge of subject matter by linking the information to important events that students meet in real-life. This strategy is based on a variety of interconnected learning theories. These include studies on learning style, social cognitive theory, problem-based learning, motivation theory, and problem-based learning. Although each has a unique point of concentration, these theories work together to highlight localization as a strategy to advance learners' success by raising interest and motivation, expanding the usefulness of knowledge and skills, improving connections with peers, and accommodating various learning styles.

Table 3 displays the students' first and second quarter formative mean scores.

Table 3. Students' Formative Mean Scores in First and Second Quarter

Quarter	Mean	SD	Descriptive Interpretation
1st Quarter Formative Test	25.92	4.83	Beginning
2nd Quarter Formative Test	26.12	4.39	Approaching Proficiency

Legend: 4.48-30.00 or 90-100% Advanced (A); 4.23-4.47 or 85-89% Proficient (P); 3.98-4.22 or 80-84% Approaching Proficiency (AP) 3.73-3.97 or 75-79% Developing (D); and 3.72 & below or 74% & below Beginning (B)

Table 3 shows the formative mean scores of the students in the first and second quarter. It can be gleaned from the table that Grade 11 students had a beginning level of proficiency in the first-quarter formative test (Mean= 25.92; SD = 4.83). During the second quarter, there is little improvement shown in the formative test of the participants indicating approaching proficiency level (Mean= 26.12; SD = 4.39).

The result implies that the effectiveness of the localized self-learning module can be essentially noticeable in the second quarter as it generated higher results of the formative test than in the first quarter. Through the results it can be inferred that introducing a new approach in the learning module requires adjustments on the part of the Grade 11 learners before they could fully grasp the idea behind its rationale.

Another reason for low performance in the 1st quarter may be the contents of the module. In the first quarter, most of the topics were theoretical conception or pure discussion of concepts related to hair and scalp treatment. On the other hand, the second quarter was more practical applications and procedures related to hair perming. Perhaps, Grade 11 learners were most likely preferred for learning sessions that could help them apply the learned concepts right after reading the module.

In relation to increased student performance, Reyes (2017) advised teachers to utilize contextualized examples, activities, and illustrations while teaching statistics. The use of local data in teaching statistics might be one of the most effective teaching-learning strategies, according to curriculum designers. To be effective, a teacher must employ exercises, illustrations, and examples from the educational material that are real and native to the area.

Table 4 displays the significance test for the difference between the pre-test and post-test mean scores for the first and second quarters.

Table 4. Test of significant difference between the pretest and posttest mean scores of Students in Hairdressing for 1st and 2nd Quarter

Topic	Test	Mean	Mean Difference	t-value (df=29)	Cohen's d	Effect Size
Hair treatment	Pretest	3.52	0.68	5.421**	0.74	Medium
	Posttest	4.20				
Hair Perming	Pretest	3.32	1.04	6.586**	1.43	Large
	Posttest	4.36				

Cohen's d: 0.20 (Small); 0.50 (Medium); 0.80 (Large)
***Significant at .01 level*

Table 4 showed the test of significant difference between the pretest and posttest mean scores of the experimental group in the two quarters (hair treatment and hair perming). It can be gleaned from the table that the mean difference value of the mean pretest and posttest scores of the experimental group in the 1st Quarter (Hair Treatment) was 0.68. On the other hand, the mean difference value of the mean pretest and posttest scores of the experimental group in the 2nd quarter was 1.04 which was higher than the mean difference of the previous quarter.

Based on the computed t-value of 5.421, it can be deduced that there is a medium significant difference between the pretest and posttest mean scores of the experimental group in the 1st Quarter at 0.01 level of significance. On the other hand, the pretest and posttest mean scores of the experimental group in the 2nd quarter showed a large significant difference considering the computed t-value of 6.586 and p-value of <0.0001.

The results indicate that the localized self-learning module has provided good learning opportunities for the Grade 11 learners who were enrolled in hairdressing class. The increase in scores from the pretest to posttest implies the positive effects of localization in the learning process whether theoretical or applied, particularly in TLE. It also entails that establishing direct connection to the learners through localization even in the modular instruction could still generate relevant outcomes for the teaching-learning process in distance education.

Moreover, Sadeghi (2019) revealed that in terms of localization of learning materials, there is a great development in technology. The demand for innovative ways of delivering education is increasing and this has led to modifications in learning and teaching methods. While classroom learning is the sort of educational system in which the students and teachers work together in one location, distance education involves studying from home, which is very different from traditional education. To bridge the distance and deliver instructional materials through distance learning programs, students and teachers are kept in contact using electronic methods. Both educational

systems have benefits and drawbacks. The needs of the learners will choose which of these two learning strategies to use.

In relation, Al-Aamri (2011) as cited in Ghallab (2020) recommended further investigation of learning through localized self-learning modules. The study sheds light on the behavior, and challenges encountered by students during learning through localized self-learning modules. Ghallab reiterated that learning through localized self-learning modules provides an enormous resource for students and teachers. From the outset, teachers will develop critical skills of the learners in the IT-driven technologies that students can use even in higher studies. Through the wise use of mobile devices, teachers will promote TLE/TVL lessons and reinforce students to effectively learn the subject. Students, on the other hand, will develop good machine literacy and actively participate in studying technology. They will also be aware of how to properly manage resources and come up with better choices.

With regard the effect size, it shows that there is only a medium effect in the recorded significant difference in the 1st Quarter with the Cohen's d value of 0.74. On the contrary, there is a large effect in the obtained significant difference in the 2nd Quarter with the Cohen's d value of 1.43.

IV. Conclusion

The pre-experimental research study examined the effectiveness of the developed localized self-learning module in teaching hairdressing. The researcher utilized the one-group pretest-posttest design to collect and treat the responses of the Grade 11 learners from pretest, formative test, and posttest in the first and second quarters.

The study was conducted during the school year 2021-2022 at Calamba Bayside Integrated School Division of Calamba City. Included in the module were topics in TLE 11-Hairdressing such as hair and scalp treatment and hair perming. The results were analyzed using both descriptive and inferential statistics. Descriptive statistics include the weighted mean and standard deviation while inferential statistics include Paired t- test and Cohen's d. Ethical considerations were carefully followed throughout the actual implementation of the research process.

Results indicated that there is a little improvement in the mean scores of the students from the pretest (Mean 3.52; SD = 0.92; "beginning") to posttest (Mean= 4.20; SD= 0.91; "proficiency") mean scores in hair treatment during the first quarter.

On other contrary, there is a significant improvement in the result of the scores from pretest (Mean 3.32; SD = 0.69; "beginning") to posttest (Mean= 4.20; SD= 0.91; "proficiency") mean scores in hair perming when the localized self-learning module was applied during the second quarter.

In terms of the formative mean scores of the students in the first and second quarter, result indicated that there is little improvement shown in the formative test of the participants indicating approaching proficiency level (Mean= 26.12; SD = 4.39) in the 2nd quarter from the beginning level of proficiency in the first-quarter formative test (Mean= 25.92; SD = 4.83).

Lastly, the test showed a significant difference between the pretest and posttest mean scores of the experimental group in the two quarters (hair treatment and hair perming). There is a medium significant difference between the pretest and posttest mean scores of the experimental group in the 1st Quarter at 0.01 level of significance. On the other hand, the pretest and posttest mean scores of the experimental group in the 2nd quarter showed a large significant difference considering the computed t-value of 6.586 and p-value of <0.0001.

The null hypothesis stating that there is no significant difference between the pretest and posttest mean scores of the experimental group in the 1st Quarter was rejected.

The null hypothesis stating that there is no significant difference between the pretest and posttest mean scores of the experimental group in the 2nd Quarter was rejected.

Based on the result, findings, and the conclusion, the following recommendation of the researcher.

School administrators may promote and support the crafting of localized materials in teaching TVL. They may also provide budget allocation in the MOOE for the localization process of the instructional materials. They may also conduct in-house training about the localization and how it has improved the level of engagement and motivation of the learners.

There is a need for the teachers to attend seminars, training, and workshops that deal with the skills in localization. Proper incentives and recognition must be provided to teachers who consistently innovate instructional materials through the localization process. Also, teachers may also fuse the localization and gamification process to bring out the best learning experiences for the learners.

Master or head teachers may also include localization as one of the indicators of competitive performance in the academe. This must serve as one of the components of the classroom observation tools to encourage teachers to make localized instructional materials towards increased academic performance and level of academic engagement.

Future researchers may also expand the results of the study by conducting similar or related studies about localization. They may also be interested in examining the effectiveness of localized learning materials on the academic performance of the indigenous learners other than mainstream individuals.

Sharing of localized instructional materials and best practices in localizing learning materials must be pursued to equip teachers with skills and competence in executing lessons using localization process.

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