CONTEXTUALIZED ELECTRICAL INSTALLATION AND MAINTENANCE LESSONS ON LEARNERS' PERFORMANCE

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ABSTRACT :

Educators and researchers stress understanding academic performance to identify deficiencies and assess student progress. Currently, Technology and Livelihood Education has a learning gap and low performance. The researcher enhanced Contextualized Lessons with dual coding and tailored options, aiming to improve educational access for diverse learners. Data from quantitative and qualitative sources was analyzed using T-tests to assess the impact on TLE 9 students. Results showed significant performance increases among students using Contextualized Lessons. These students had positive attitudes and improved understanding, with activities matching their interests, boosting confidence, and reducing learning barriers. The Glossary and images greatly enhanced comprehension. Contextualized Lessons were effective and relevant for TLE 9. Students enjoyed the material, especially the dual coding in the Glossary, which provided definitions with images. The variety of activities improved performance and subject mastery and promoted independent learning with anytime access and answer keys for self-assessment. Researcher's recommendations include encouraging School Heads to use or create Contextualized Lessons, integrating dual coding and audio-visual aids. The Schools Division Office may organize training on module enhancement. Contextualized Lessons may be tested as supplementary materials across different settings and subjects. Future researchers may explore additional TLE topics and specializations to further understand their impact on student performance

Keywords: Contextualized Lessons, Control Group, Experimental Group, Performance, Pre-test, Post Test

Introduction :

The Programme for International Student Assessment (PISA) assesses the knowledge and skills of 15-year-old students in mathematics, reading and science. The tests explore how well students can solve complex problems, think critically and communicate effectively. This gives insights into how well education systems are preparing students for real-life challenges and future success. The Philippines participated for the first time in PISA in 2018. But in the recent PISA 2022, the Philippines ranked 6th lowest in Math (355), rank 6th lowest in reading (347) and ranked 3rd lowest in Science (356). It is evident that the education system in our country requires significant intervention in various aspects such as curriculum, teaching practices, and learning materials among others to improve its overall wellness.

One of the tools to check the knowledge and skills of the learners is assessment or evaluation. Assessment or evaluation is a crucial tool for checking the knowledge and skills of learners, especially in secondary education, particularly in the Technology and Livelihood Education (TLE) program. There are several reasons why assessment is essential in this program. First, it helps in identifying the students' existing knowledge and alternative frameworks, which is useful in planning lessons that build on their prior knowledge and challenge their misconceptions. Second, assessment provides feedback to both teachers and students, which is important in monitoring progress and making necessary adjustments to improve teaching and learning.

The Regional Mid-Year Assessment is a crucial evaluation conducted in all public high schools across the region to determine the level of learning among students. Among the 19 schools in Cluster 5, Salapungan National High School in Candaba, Pampanga is included. However, the recent Regional Diagnostic Assessment, as mandated by Regional Memorandum No. 492, s. 2022, revealed that only 4.24% or five students out of 118 who took TLE 9 at Salapungan National High School achieved or exceeded the MPL in TLE 9 EIM. This outcome suggests a learning gap or low academic performance in the TLE subject, given the current learning set-up.

TLE is a subject that provides students with a strong foundation of both theoretical knowledge and practical skills in diverse fields such as Home Economics, Industrial Arts, Agri-Fishery Arts, and Information Communication Technology (ICT), all of which are relevant to the 24 TLE courses. TLE takes a holistic approach that blends entrepreneurship with all the TLE disciplines, empowering students to launch their own businesses in any of these areas. It puts a premium on not just technical skills but also on work ethics, attitudes, and life skills that are crucial for success both in the professional and personal realms.

However, learning barriers arise due to individual learners' differences and learning styles. According to Alrajeh and Shindel (2020), the most important factor affecting student engagement is instructional support. Nevertheless, contextualized learning modules are useful for filling in learning gaps on their own since they support and enhance the teacher's verbal explanations and provide a more engaging learning environment. Additionally, it

advances, develops, and/or leads to competency mastery. Students' higher-order cognitive abilities, such as critical thinking, creativity, curiosity, problem-solving, and others, are developed by the program (Dewi & Primayana, 2019). Crafting TLE modules can remove the learning gap between able and impaired students. Thus, contextualized lessons may be used as learning materials in TLE. The process of matching the content and instructional strategies relevant to students is called contextualization (Department of Education [DepEd], 2016).

A learning gap occurs when the relative performance of individual students—i.e., the disparity between what a student has actually learned and what he or she was expected to learn at a particular age or grade level. In this light, this study aims to enhance modules through Contextualized Lessons for bridging the gap in TLE 9 that promotes independent learning. The primary purpose of this study is to ascertain if there is compelling evidence that efforts to use contextualized lessons have had this result. It also attempts to strengthen the students' performance and help them acquire the necessary skills and competencies they need to succeed in their chosen field. To achieve this purpose, the researcher will craft modules with the use of contextualized lessons using instructional strategies. Instructional strategies refer to the methods and approaches used to organize learning activities, course content, and student engagement in online courses (Maulana, 2020). To demonstrate that the movement is successful, it must prove that its efforts not only increase the performance of students in school but that students can learn alone, even without the instructions of their teachers.

Conceptual Framework

Figure 1
Paradigm of the Study

Independent Variable   Dependent Variable
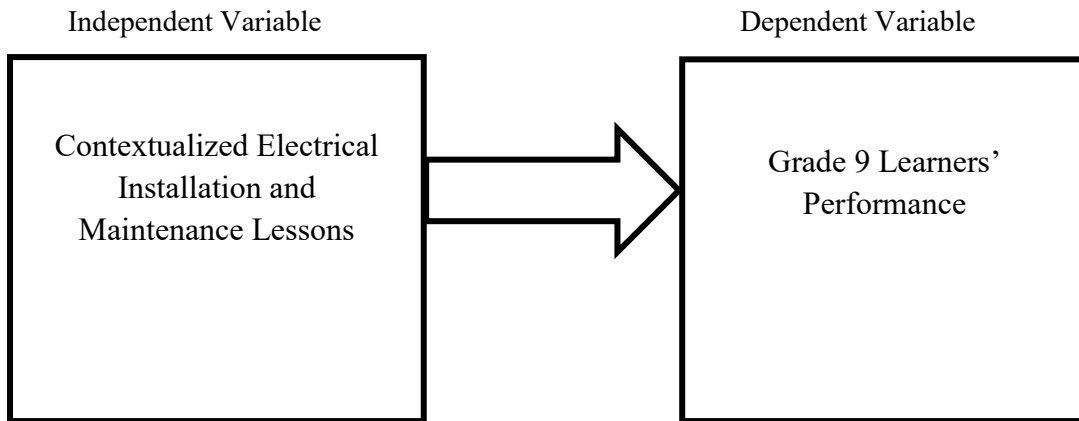
The figure depicts the independent and dependent variables of the study. The independent variable is the contextualized lessons in TLE 9 EIM specialization. Meanwhile, the dependent variable is the Grade 9 learners' performance in EIM for the third quarter. Moreover, the arrowhead between the two frames denoted the possible effect of the independent variable on the dependent variable.

Statement of the Problem

This study aimed to determine the effectiveness of contextualized lessons in enhancing the academic performance of the Grade 9 learners in Electrical Installation and Maintenance.

Specifically, this study sought answers to the following questions:

1. How may the pretest scores of the control and experimental groups be described before using the Contextualized Lessons in Electrical Installation and Maintenance?
2. How may the posttest scores of the control and experimental groups be described after using the Contextualized Lessons in Electrical Installation and Maintenance?
3. How may the retention test scores of the experimental group be described?
4. Is there a significant difference between the pretest scores and posttest scores of the control and experimental groups before and after using the Contextualized Lessons in Electrical Installation and Maintenance?
5. Is there a significant difference between the posttest and retention test scores of the experimental group?
6. What are the views and insights of the respondents when using the Contextualized Lessons in Electrical Installation and Maintenance?

Hypotheses

The following are the hypotheses of the study:

1. There is no significant difference between the pretest scores and posttest scores of the control and experimental groups before and after using Contextualized Lessons in TLE 9 Electrical Installation and Maintenance; and
2. There is significant difference between the posttest and retention test scores of the experimental group.

METHODOLOGY

This chapter presents the methods and techniques used in the study. It includes research design, sampling and respondents, the locale of the study, instruments, data gathering procedure, data analysis and ethical considerations.

Reseach Design

This study utilized the mixed method of research which involves collecting and analyzing both quantitative and qualitative data to provide a comprehensive understanding of the effects of contextualized lessons on learners' performance. Under the quantitative method, a quasi-experimental design was used. A pretest was given to both the control and experimental groups before the use of the contextualized lessons. Then, a posttest was carried out to assess the effect on the groups after the use of contextualized lessons in the third quarter period.

Mixed method research design finds its roots in the work of Campbell and Fiske to prove the causal link between an independent and dependent variable. The effectiveness of contextualized lessons in TLE 9 EIM specialization was tested with Grade 9 students of Salapungan National High School, who served as the control and experimental groups.

Sampling and Respondents

The respondents of the study were the Grade 9 students of Salapungan National High School.

Table 1

Distribution of the Respondents

Group	Section	No. of Participants
Control	9-Wisdom	25
Experimental	9-Peace	25

As shown in Table 1, the respondents were composed of 25 student-respondents for the control and another 25 for the experimental groups.Twenty-five student-respondents were selected for the study to measure the effectiveness of contextualized lessons in TLE 9 EIM specialization. The researcher compared the scores of the 25 students from 9-Peace with the 25 students in 9-Wisdom regardless of their age, gender and other characteristics.

In this study, the student-respondents in the experimental group were exposed to the intervention, while the control group was taught using the traditional way.   For the qualitative part, the student-respondents in the experimental group were asked to accomplish the journal. They wrote down reflections to refine ideas, beliefs, and their responses to the research in progress.

Locale of the Study

This study was undertaken in Salapungan National High School. It is one of the schools in 19 schools of Cluster 5. It is founded in year 1968, is a public high school located at Barangay Salapungan, in Candaba, Pampanga and is 60 km northeast of Manila in the Philippines. Currently, it has nearly 1,000 students, 34 JHS teachers, and 9 SHS teachers. There are 24 academic classrooms in JHS and 7 in SHS, one computer laboratory, one reading corner, 2 Science laboratories, one admin office, and a covered court with a stage.

Instruments

Three instruments were used in this study. The first instrument is a researcher-made test consisting of 50 items in multiple choice type with a table of specifications. It was used to determine the content of the lesson in Electrical Installation and Maintenance. The two other instruments were the post-test and retention test with minor revisions for assessment and evaluation of learning resources.   Contextualized Lessons were validated with the LRMDS Educational Soundness General Evaluation Checklist with minor revisions. It consists of 22 items in a four-point Likert scale namely: (4) as very satisfactory; (3) as satisfactory; (2) as poor; and (1) not satisfactory. Printed Contextualized Lessons were also evaluated with an Evaluation Rating Sheet that used: 5 – a point Likert scale for content, format, presentation, and organization, and 4 – point Likert scale for accuracy and up–to–dateness of information (DepEd, 2009).

Data Gathering Procedure

Under Memorandum No. 9, s. 2022, of Bulacan Agricultural State Colleges (BASC), and in accordance with the DepEd Region III, Regional Memorandum No. 228, s. 2020, which outlines "Policy Guidelines on the Adherence to Ethical Research Principles and Responsibilities in Studies involving Teaching, Teaching-related, Non-teaching Personnel, and Learners," the following data-gathering procedure was established.   Permission to conduct the study was sought first. The researcher included in the request was sent to the Schools Division Office of Pampanga the endorsement from Bulacan Agricultural State College; a copy of the approval from the College Research Ethics Review Committee; and the instrument was used, as stated in the DepEd Region III, Regional Memorandum No. 228, s. 2020 "Policy Guidelines on the Adherence to Ethical Research Principles and Responsibilities in Studies involving Teaching, Teaching-related, Non-Teaching Personnel and Learners".

In addition, a letter of request was sent to the principal's office of Salapungan National High School which requests Grade 9 students to participate in the study. In the course of the study, the students took the pretest, posttest and retention test on the third quarter lessons and wrote their views and insights on the use of contextualized lessons.Contextualized lessons were subjected to expert validation to gauge its face and content validity based on

integrity, learner focus, usability, and accessibility. The researcher adopted Evaluation Rating Sheet for Print Resources from Guidelines and Process for LRMDS (Learning Resources Management and Development System) Assessment and Evaluation (DepEd, 2009).

The contextualized lessons were validated prior to implementation to address any significant issues. Two experienced TLE teachers were selected to validate the module. The first validator holds a doctorate in Philosophy with a specialization in TLE, possesses Trainers Methodology 1 certification, has experience in module writing, and completed a Master's Thesis focused on module development in TLE. The second validator, a Master Teacher II and Head of the T.L.E. Department, holds Trainers Methodology 1 in EIM and has achieved success in various contests, particularly in Industrial Arts, including the EIM competition. To ensure the modules' English grammar accuracy, a competent teacher proficient in English and experienced in module writing, with a Master's degree in English, critiqued the content. Additionally, an IT expert evaluated the module's graphics to ensure proper layout and design.   Validators' verbal suggestions and comments were considered for the material's revision. The revised contextualized lessons were subjected to final evaluation. Evaluation is one of the major determinants of the quality of developed learning modules. Experts' validation made modules meet the valid criteria (Hasibuan et. al., 2019). Print legibility influences readability as it gives ease to the learner to distinguish letters and words while reading (Maile & Cooper, 2018). Experts' validation made modules meet the valid criteria (Hasibuan et. al., 2019). The indicator's accumulated points were interpreted based on set standards of the instrument – at least 21 of 28 (contents); 54 of 72 (format); 15 of 20 (presentation and organization); and 18 of 24 (accuracy and up – to – datedness of information) (DepEd, 2018).After the modules had been validated, then, it was followed by the collection of qualitative data to explain the quantitative outcomes further. The students will be asked to write their views and insights on the use of contextualized lessons in their TLE 9 journals.   The methodology of this study was modified to discern students' perspectives and opinions regarding the contextualized lessons. The instruments utilized in the study, including pretests, posttests, retention tests, and modules, were validated by experts. The learning modules were implemented in three consecutive weeks which contains from module 12 to module 17 which covers the last three weeks of the third grading period. Students were given thorough instruction on how to utilize the module to optimize their learning experience.

The evaluation phase assesses the quality of instructional products and processes (Kurt, 2018) which is continuous in conjunction with the phases of the Research and Development Design of Lacanilao (2022). A successful evaluation generates outcomes that are valid, and reliable and indicate directions and action for development. Ten days following the administration of the post-test, a retention test was conducted to assess whether students retained the knowledge and concepts. Retention is vital as it ensures that learning and experiences are stored in memory over time, enabling the long-term retention of newly acquired knowledge.

Data Analysis

To analyze the data collected on testing the effectiveness of contextualized lessons, weighted mean and frequency were used. A T-test was employed to compare the results of the pretest, post-test and retention test. On the other hand, the students' insights and views on the use of contextualized lessons were analyzed through content analysis of their journal writing.

Ethical Considerations

By following these ethical guidelines, the researcher aimed to protect participants' rights and well-being, ensuring high ethical standards in the research: All participants received detailed information about the study's purpose, procedures, risks, and benefits. Written informed consent was obtained, emphasizing voluntary participation and the right to withdraw at any time without penalty.   Confidentiality   was maintained using pseudonyms or numerical codes, with data securely stored and accessible only to the research team. Data was anonymized in publications, and personal information was not disclosed without explicit consent.Participants were informed of any risks, and measures were taken to mitigate them. The study was conducted impartially, with care taken to handle data discrepancies and differing perspectives fairly. Participants were reminded of their right to withdraw at any time without consequences.

Data complied with protection regulations, with digital data encrypted and physical data secured. Data was retained only as necessary and destroyed securely thereafter.The researcher ensured transparency, providing accurate reports and acknowledging limitations or conflicts of interest. The study proceeded only after approval from the relevant ethics review board, adhering to all ethical standards.

RESULTS AND DISCUSSIONS

This chapter presents, analyzes, and interprets the data gathered in the study under the research questions. The performance of students in the pretest and posttest and their insights and views in learning TLE 9 with the use of contextualized lessons. It thoroughly addresses the concerns of the study.

Students' Performance in Pretest and Posttest

Students' performances were based on the pretest and posttest in TLE for the third quarter period, pretest as a basis to assess students' prior knowledge regarding the possible topics taken in the study. Posttest used to assess students' learning after the use of Contextualized Lessons. The main goal of administering the pretest and posttest was to compare the two scores and evaluate if the students had progressed.

Table 2

Results of the Pretest Scores between the Control and Experimental Groups

	Control Group		Experimental Group	
Range	Frequency	Percentage	Frequency	Percentage

41 – 50	0	0.00	0	0.00
31 – 40	0	0.00	0	0.00
21 – 30	11	44.00	13	52.00
11 – 20	13	52.00	12	48.00
0 – 10	1	4.00	0	0.00
Standard Deviation		4.39		3.89
Mean		20.00		20.00
Verbal Interpretation		Fair		Fair

Legend: 0-10 "Poor", 11-20 "Fair", 21-30 "Good", 31-40 "Very Good", 41-50 "Excellent"

The findings of the control group are shown in Table 2, with a standard deviation of 4.39 indicates that the scores varied by approximately 4.39 points from the mean score of 20.00. This relatively high standard deviation suggests a wider spread of scores around the mean. As for the experimental group, the standard deviation of 3.89 indicates that the scores varied by approximately 3.89 points from the mean score of 20.00.   The majority of students in both groups scored between 11 and 30 in the pretests. This range indicates where most of the data points lie, giving us a general idea of the performance distribution. Both groups had the same mean score of 20.00 and were given the verbal interpretation of "Fair." This implies that on average, the performance of both groups was considered to be at a fair level. This analysis suggests that both groups performed at a similar average level.

Table 3

Results of the Posttest Between the Control and Experimental Groups

	Control Group		Experimental Group	
Range	Frequency	Percentage	Frequency	Percentage
41 – 50	0	0.00	7	28.00
31 – 40	0	0.00	15	60.00
21 – 30	17	68.00	3	12.00
11 – 20	8	22.00	0	0.00
0 – 10	0	0.00	0	0.00
Standard Deviation		3.81		4.50
Mean		22.56		37.08
Verbal Interpretation		Good		Very Good

Legend: 0-10 "Poor", 11-20 "Fair", 21-30 "Good", 31-40 "Very Good", 41-50 "Excellent"

Table 3 shows the findings: for the control group, the standard deviation of 3.81 indicates the average amount of deviation of individual scores from the mean score of 22.56 on the posttest. This suggests that, on average, the scores in the control group varied by approximately 3.81 points from the mean. Similarly, for the experimental group, the standard deviation of 4.50 represents the average deviation of individual scores from the mean score of 37.08 on the posttest. Again, this indicates that, on average, the scores in the experimental group deviated by approximately 4.50 points from the mean.Comparing the standard deviations between the two groups can provide insights into the consistency of performance within each group. A smaller standard deviation suggests that scores are tightly clustered around the mean, indicating less variability, while a larger standard deviation implies greater variability among the scores. Additionally, the verbal interpretations of "Good" and "Very Good" for the control and experimental groups, respectively, provide context to the mean scores. These interpretations suggest that, on average, the performance of the experimental group was higher than that of the control group.Furthermore, the information about the score ranges (21-30 for the control group and 31-40 for the experimental group) offers additional context. It shows the distribution of scores within each group, indicating where most students' scores fell. Considering the standard deviations alongside the mean scores and verbal interpretations, we can better understand the dispersion of scores within each group and the overall performance levels.   Based on the result, the performance of the control group increased only by one level, moving from "Fair " to "Good" with a mean difference of only 2.26. This implies that the control group's conceptual understanding slightly improved as a result of being exposed to the traditional method.   In consonance to the findings of Serroukh and Serroukh (2022), the reliance on traditional teaching methods in the 21st century has proven to be ineffective. Recognizing the need for more effective learning approaches, educational methods have been continuously evolving.   Meanwhile, the posttest results from the experimental group shows a remarkable improvement in the performance of the students in the third quarter lessons. In fact, majority of the students obtained scores within 31-40 scoring range with a percentage of 60%. Additionally, 43 points were recorded as the highest score and 27 points as the lowest.   The results revealed a significant increase in the performance of the students in the experimental group. It increased by two levels from "Fair" to "Very Good," with a mean difference of 17.08. The findings imply that the experimental group's performance was considerably improved as a result of exposure to the Contextualized Lessons.Many traditional modes of instruction that require in-person presence such as lectures and laboratories are no longer possible and educators are adapting their teaching methods while still meeting students' needs (Almarzooq et. al., 2020). Despite the traditional lecture-style teaching has been criticized by experts, the evaluations of students are not all against it, and many students even support lecture-style teaching. The traditional education method is teacher-centric learning and modern education is learner-centric learning. Teacher-centered learning is usually a traditional lecture-style class where the educators manage and lead students to learn. However, this education method not only makes students too dependent on educators and does not think for themselves, but also has many disadvantages (Y. Wang, 2022). The lecture is found

to be the most frequently utilized pedagogy in the study conducted by Aban et. al. (2020). However, the result confirms the study of Utami et. al. (2020), that the use of student workbooks still matters on the effectiveness of students' learning. This is very effective and efficient in the learning process since the teacher does not need to explain repeatedly and waste time.

Table 4

Results of the Retention Test Scores of the Experimental Group

	Experimental Group	
Range	Frequency	Percentage
41 – 50	22	88.00
31 – 40	2	8.00
21 – 30	1	2.00
11 – 20	0	0.00
0 – 10	0	0.00
Standard Deviation		4.23
Mean		44.64
Verbal Interpretation		Excellent

Legend: 0-10 "Poor", 11-20 "Fair", 21-30 "Good", 31-40 "Very Good", 41-50 "Excellent"

Table 4 shows that the standard deviation of 4.23 indicates the amount of variation or dispersion among the scores of the students in the experimental group. It means that, on average, the scores deviated from the mean score of 44.64 by approximately 4.23 points. Given that the majority of students obtained scores within the 41-50 scoring range and with a percentage of 88%, it suggests that the distribution of scores was relatively concentrated around the mean.The fact that the students in the experimental group performed even better in the retention test, despite already scoring well in the posttest, indicates that the Contextualized Lessons had a positive impact on their learning outcomes. In summary, the standard deviation of 4.23 provides insight into the spread of scores within the experimental group, and when considered alongside the mean and percentage distribution, it helps to understand the effectiveness of the teaching method in improving student performance. Based on the results, the performance retention level of the experimental group improved from "Very Good" to the next level of "Excellent." This implies that there is a significant improvement in students' performance with the use of Contextualized Lessons. In relation to the findings of Manalastas & De Leon (2019), the developed workbook was found to be very much acceptable as validated by the experts. The expert-validators strongly agreed that the instructional material possesses adequacy, coherence, appropriateness, and usefulness. It also reinforces, enriches, and/or leads to mastery of competencies.

Table 5

Test of Significant Difference on Pretest Scores between the Control and Experimental Groups

	Mean	t-value	p-Value	Decision	Interpretation
Control Group	20.00				
		0.00	1.00	Do not reject H$_o$	Not Significant
Experimental Group	20.00				

Legend: < 0.01 = sig

As seen in Table 5, the test of significant difference on the pretest between the two groups (control and experimental) has a p-value of 1.00, which is greater than the level of significance at 0.01. Therefore, the null hypothesis was rejected. Henceforth, there is no significant difference between the pretest of the control and experimental groups before the use of Contextualized Lessons. This implies that before the treatment, both the control and experimental groups had the same level of conceptual understanding of the lesson. Furthermore, the mean scores of the control and experimental groups at the onset of the investigation, before the Contextualized Lessons was used, were at par with each other.

Table 6

Test of Significant Difference on Posttest Scores between the Control and Experimental Groups

	Mean	t-value	p-Value	Decision	Interpretation
Control Group	22.56				
		14.72	0.00	Reject H$_o$	Significant
Experimental Group	37.08				

Legend: < 0.01 = sig

Table 6 illustrates the test of significant difference between the posttest of the control and experimental groups. Since the computed p-Value was 0.00, which is less than the level of significance of 0.01, the null hypothesis was rejected, there is a significant difference between the posttest scores of the traditional method and the Contextualized Lessons. The result implies that after

exposing the learners to the use of Contextualized Lessons, the experimental group showed significant improvement in students' TLE performance in comparison to the control group. Instructional support can make students' learning more engaging (Alrajeh & Shindel, 2020). The learning modules are suitable to address the previously identified learning gap (Rochsun & Agustin, 2020).   The outcome is consistent with Abuda's (2019) findings. Based on the pretest results, the experimental and control groups' levels of mastery before being exposed to the intervention were comparable. When compared to the control group, the general learning gains of the experimental group that received the learning intervention material showed a greater and more significant difference.

Table 7

Test of Significant Difference between Posttest Scores and Retention Test Scores of the Experimental Group

	Mean	t-value	p-Value	Decision	Interpretation
Posttest	37.08				
		12.65	0.00	Reject H$_o$	Significant
Retention Test	44.64				

Legend: < 0.01 = sig

Table 7 illustrates the test of significant difference on posttest from the retention test of the experimental group. Since the computed p-value was 0.00, which is less than the level of significance of 0.01, there is a significant difference between the post-test scores from the retention test scores.   The result implies that after exposing the learners to the use of Contextualized Lessons, the experimental group showed significant improvement in students' performance even after they took the posttest. They yielded a higher mean for post-test scores. Moreover, there was a mean difference of 7.56 between the post-test and retention test.   Further scrutiny of the results connotes that the experimental group, having been exposed to the use of Contextualized Lessons, performed better than their peers in the control group who were not exposed to the said approach. Consequently,   the   study implies that the use of Contextualized Lessons, as a non-traditional method, resulted in a considerably higher performance gap in favor of the experimental group. The findings showed that the use of Contextualized Lessons helped the experimental group enhance their post-test performance. This suggests that the proposed TLE teaching intervention has the potential to improve students' performance in the subject. The students were able to recall and grasp the teachings for a long time, resulting in a high post-test score. This confirms that Contextualized Learning Material or Contextualized Lessons is an instructional material being used as a vessel in delivering the learning competencies in a more familiar and meaningful experience to the learners. Through this, it promotes authentic learning because it allows the learners to make connections as they construct new knowledge. It also can guarantee the increase of mastery of learning competencies as proven in the studies made by Madrazo and Dio, (2020). The module develops higher cognitive skills of students such as critical thinking, creativity, inquiry, problem-solving, and others (Dewi & Primayana, 2019).

Insights and Views on the Use of Contextualized Lessons

During the third grading period, students used Contextualized Lessons to study TLE, enhancing their learning. Unlike traditional textbooks with predetermined activities, the module offered flexible options aligned with their interests. This allowed students to showcase their learning uniquely. They also appreciated the user-friendly design, which facilitated independent learning and comprehension.The use of Contextualized Lessons provided a range of learning opportunities for the students to actively participate and become invested in their learning processes. Due to their increased level of understanding, students will participate more often and remember more information.   Contextualized   Lessons offered students a variety of learning opportunities, promoting active engagement and investment in their learning. As their understanding deepens, students are expected to participate more frequently and retain a larger amount of information. In relation to the findings of Manalastas and De Leon (2019), the developed workbook was found to be very much acceptable as validated by the experts. The instructional material possesses adequacy, coherence, appropriateness, and usefulness. It also reinforces, enriches, and/or leads to mastery of competencies.

Journal Responses Summary and Its Influence on Their Performance

Here are some student responses on how the Contextualized Lessons influenced their performance: "In the module, it's easier to understand the material, and reviewing it is straightforward and quick; It was easier to learn with the module because I could follow along with the instructions and discussion while the teacher explained; I can read the lessons repeatedly, and the Glossary helps us understand better. I like the Glossary part because it provides images along with definitions, making it easier to understand."   Students' feedback indicates a significant enjoyment of learning Electrical Installation and Maintenance through Contextualized Lessons. This has led to increased interest and understanding in TLE 9 during the third grading period.Nevertheless, based on Madrazo and Dio (2020) study, contextualized learning modules are effective to bridge learning gaps independently as they supplement and complement the teacher's verbal explanations in making a learning experience. The use of meaningful and relevant information actively involved them in various learning activities (Reyes et. al., 2019). The clear, simple, and relevant illustrations and presentations piqued their interest and made learning effective and enjoyable, and provided concrete visual clues (Maile & Cooper, 2018). This connotes that contextualized learning modules eventually promote independent learning.

Students' Journal Responses on Most Liked Activity

Upon the use of Contextualized Lessons, the activities in which the students enjoyed participating were as follows: computation-related activity, followed by sequencing; next is memorization activity; matching-type activity; arranging (jumbled letters); posttest or the evaluation part; and looking

at answer key (see Appendix H). Most of the students chose computation-related activities, and very few participants picked the rest of the activities. They appreciated the flexible options available for each lesson.These learning modules serve as supplementary materials to learn the concept independently and excite them to learn. These are affirmed by their acceptability and experts' evaluations (Setyani et. al., 2020). Module with Contextualized lessons as supplementary learning material provided the diverse students an option of the activities they want to answer or do. Thus, it boosts their confidence and gains interest in the subject matter.   Moreover, the responses go to show that the use of Contextualized Lessons has greatly changed the way students perceive and learn problem-solving. They develop a positive attitude towards computation and show an increased interest in self-directed activities to improve their performance. Consequently, the challenge for teachers lies in selecting the most suitable activity for each lesson.

Students' Journal Responses on Least Liked Activity

The use of Contextualized Lessons provides different activities to the students, but students have least preferred or least liked activities as follows: writing an essay or paragraph; counting activities; drawing activities; computation-related activities; plotting activities; and watching-related activities (see Appendix H). Whereas most of the students did not prefer writing-related activities, on the other hand, watching activities were chosen as the least liked by a few of the students.

Properly designed instructional materials also contribute to the increase in engagement and motivation among the learners. Also, selecting, designing, and/or using appropriate instructional materials are advantageous and useful in the teaching-and-learning process for both the learners and the teachers (Haruna, 2022).

Students' Journal Responses: Encountered Problems/Difficulties

Among the students using Contextualized Lessons, some encountered no difficulties, while others disliked the computational aspects. Some found the volume of activities challenging, others struggled with complex lessons within the module, and a few were distracted by unfamiliar vocabulary words.

Sufficient and salient information is provided in the delivery of the concept. Adequate activities provided enhance their knowledge, critical thinking, skills, and attitudes. Situational problems motivate them and provide a mechanism to organize ideas. These also allow them to be reflective and to develop metacognition (Belecina & Ocampo, 2018). It is seconded by Lachheb and Boling (2021), who stated that this approach entails that design tools serve the requirements of the designer, rather than directing or scaffolding their design in a predetermined manner. This method also necessitates that designers develop the ability to generate strong instrumental judgments that assist them in determining which design tools to use, when, how, and why. Hence, the development and application of Contextualized Lessons aim to enrich the teaching-learning dynamic within a specific subject area, addressing its timeliness and relevance across various educational facets and activities.

Students' Journals Detailed Challenges Faced with Adopted Solutions

Students who disliked the computational aspects brought calculators. Those finding the volume of activities challenging opted for easier tasks. Those grappling with complex lessons sought out and watched the provided video lessons. Students distracted by unfamiliar vocabulary referred to the Glossary to grasp the meanings. Students have different preferences and interests. Their preferred activity might not be the same as the others. In Dogomeo and Aliazas, (2022) research, findings indicated that students commonly engage in dual coding cognition using verbal and imagery elements, which they both actively employ, with a preference for infographics demonstrated by the students. The static infographics received an "excellent" score from the expert raters, while animated infographics received a "very good" rating. The result generated showed infographics enhanced learners' performance and demonstrated a substantial difference between their pre-and post-test scores in terms of scientific knowledge. The findings indicate that using infographics to increase students' scientific knowledge and academic performance was indeed beneficial.

Differentiating of instruction is salient as learners absorb information in their styles. Thus, determining their preferred mode of instruction as to their learning style is important (Malacapay, 2019). Learning style is how an individual learner begins to concentrate on, process, and absorb new and difficult material, and multiple intelligences develop human potentials (Santos, 2018).   Student-centered is one of the approaches that create more stability between the teacher and student, each playing a role in the learning process. While the teachers still hold authority, they act more as facilitators, coach students, and assist them in their learning (Lathan, 2021). For this approach to become effective, the teachers should consider the students preferred learning styles. If students are aware of their learning styles, they will be able to cope with this approach with ease. As it is expressed in the study conducted by Johnson-Glauch et al. (2020), in which the authors conclude that, visual representations can play an important role when helping students develop concepts, as well as detect perceptive signs that can hamper their capacity to elaborate concepts; or as a text organizer, which allows us to recognize the discursive structure of texts and their key parts, as well as the relationships among them.The module develops higher cognitive skills of students such as critical thinking, creativity, inquiry, problem solving, and others. The presence of contextualization implies that they can relate the subject matter conic sections to practical, applicable, and meaningful situations that are relevant to students (Dewi & Primayana, 2019).   The contents of learning modules are significantly relevant for the effective acquisition of knowledge and the development of new skills among learners. Without reliable content, learning is not effective. Thus, content is at the heart of learning. As cited by Troop et. al. (2020), there must be an interaction between the learner and content to have effective acquisition and development of new knowledge. In developed learning materials like the developed learning module for the Application Development and Emerging Technologies course, educators must actively engage in incorporating interesting content to stimulate interest and increase motivation among the learners. In this manner, better academic performance may be observed.

Findings

This study determined the effect of Contextualized Lessons in TLE 9. It was conducted in the Third Quarter Period of the current school year at Salapungan National High School, Candaba, Pampanga with the Grade 9 students from Wisdom and Peace. Twenty-five students from each section were randomly selected.The research study employed mixed methods consisting of quasi-experimental and content analysis for the qualitative aspects.Using the procedures described in the preceding chapter, the answers to the problems raised in this study were ascertained and summarized as follows: The results revealed a significant increase in the performance of the students in the experimental group through the use of Contextualized Lessons.   No significant difference was found between the pretest scores of the control and experimental groups before the use of the Contextualized Lessons. With respect to the test of significant difference on the posttest between the control and experimental groups, significant difference was found. In addition, there is a significant difference between the post-test scores from the retention test scores.Students who used Contextualized Lessons showed positive attitudes and improved understanding of topics. The activities matched their interests, allowing them to choose what they wanted to answer. This increased their confidence and reduced learning barriers. The Glossary helped them unlock terms they wanted to learn, and images greatly enhanced their understanding.

Conclusions

Based on the study's findings, Contextualized Lessons were effective, helpful, and relevant as learning material in TLE 9. Students enjoyed learning through this material, particularly appreciating the dual coding integrated into the Glossary, which provided terminologies with definitions, and the accompanying images that enhanced their understanding. They found the material engaging due to its variety of activities, which contributed to improved performance and mastery of the subject matter. Additionally, it promoted independent learning, as students had access to the material anytime for reading or review at their own pace, with provided answer keys for self-assessment. The material was also diverse enough to cater to the various learning needs of students, ensuring that no one was left behind.

Recommendations

In light of the findings and conclusions of the study, the following recommendations are hereby offered:

1. The School Head may encourage the utilization or creation of Contextualized Lessons among teachers, advocating for the integration of dual coding in the Glossary or inside the body of the modules, audio-visual presentation link, or video tutorials related to the topic and provide various activities for students to choose from. This approach may inspire educators to explore the significance of creating modules that empower students to select activities aligned with their interests, catering to the diverse needs of learners.
2. The Schools Division Office may organize seminars or training sessions on crafting or enhancing modules or contextualizing lessons;
3. The Contextualized Lessons, may be adapted and tested as supplementary learning materials by other schools, across distance learning, alternative learning, and in-person classes. Moreover, they may serve as prototypes for developing modules for various subject areas and grade levels; and
4. Future researchers may consider conducting further studies along this line to explore additional topics or specializations in TLE across various grade levels. Further research on the same study may offer additional insights into the impact of Contextualized Lessons on students' performance.

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