

DIGITIZED INSTRUCTIONAL MATERIALS IN THE PERFORMANCE OF GRADE 9 LEARNERS IN TECHNOLOGY AND LIVELIHOOD EDUCATION

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Abstract. This study was conducted to determine the effectiveness of digitized instructional materials in the performance of Grade 9 learners in Technology and Livelihood Education at Malacañang National High School during the school year 2108- 2019. In this study, the learners in the control group obtained a very low mastery in both pretest and post-test while the experimental group obtained a high increase in their level of performance in their post-test than in their pretest, having an average mastery from very low mastery. Thus, using digitized instructional materials is far more effective than using traditional instructional materials in teaching Technology and Livelihood Education.

Keywords. Digitized instructional materials, performance, grade 9 learners, technology and livelihood education. TLE

1 Introduction

It can be noted that TLE subjects are not yet given so much importance by many. To date only a few students take vocational courses, apparently those who do realize that these will lead them to opportunities for employment even if they do not get a college education. In the long run, TLE-takers will realize that technical courses are opportunities for them to uplift their economic capabilities and thus improve their family's standard of living. TLE teachers should

themselves also be convinced that TLE subjects are the practical and effective answers to the needs of an impoverished society like ours, and that teaching TLE subjects is essential in equipping our youth with knowledge, skills, and proper attitudes towards work and thus ensure the development and wise utilization of our country's resources.

Coupled with the implementation of the K to 12 Program, teachers handling TLE are now challenged to create an impact as to whether or not the students have acquired the concepts and essential skills to become productive citizens of the society. They should, therefore, provide learning activities which could be the training ground to enable the learners to face the battle of real-life situations.

Considering that TLE is a "hands-on" subject, learning is best by doing and student outputs are very significant as proof of learning. As such, TLE teachers should focus on the learners' acquisition of competencies through actual task performance of each learner. Learning task performance is a school work where teachers give information like tools, materials and steps to be followed by the students to become skillful. Performances for students in TLE whether electrical installation maintenance, cookery and computer hardware servicing are important preparation for the student's life in the future.

The researcher, a TLE teacher, has observed that students lack interest and do not show perseverance in completing their learning tasks in the classroom. There is a need to re-demonstrate to them each step in the learning task in order to attain mastery of the skills based on the performance standards of the curriculum. It is for this reason that the researcher planned to make TLE more interesting to the students by using digitized instructional materials which can be shown repeatedly to them.

2 Review of Related Literature

The researcher presented foreign and local literature and studies related to the present study that provided input in the current study. They also provided significant insights that helped the researcher in the development of digitized instructional materials.

The study of Blackmore et., al. (2003) and Abdi et., al. (2009) emphasized the utilization of ICT in teaching and its positive effect in teaching learning process. Samuel (2009) stated the importance of using the right instructional materials to engage the student in the classroom activities. The studies by Albarico, et., al. (2017), Ariaso and Tancinco (2016) and Ching (2014) support the need of incorporating technology in teaching more particularly in Technology and Livelihood Education.

3 Research Methodology

3.1 Research Design

This research utilized quasi-experimental method that involves a pretest and post-test design. Patidar (2013) defined experimental research design as “observation under controlled conditions”, concerned with examination of the effect of independent variable on dependent variable, where the independent variable is manipulated through treatment or intervention, and the effect of the intervention is observed on the dependent variable.

3.2 Population and Sample Size

The subjects of this study were the 58 learners who were officially enrolled in the two sections of Grade 9 at Malacañang National High School during the school year 2018-2019. During the enrolment period, students were assigned to their respective sections heterogeneously. The researcher determined which of the two sections to be identified as the control group and the other as experimental group by tossing a coin.

3.3 Statistical Treatment of Data

To answer sub-problems number 1 and 3, mean and mean percentage scores (MPS) were used to determine the performance of the control and experimental group. To answer sub-problems number 2 and 4, t-test for non-correlated data was utilized to determine the significance of the difference between the pretest and post-test performances of Grade 9 learners exposed to traditional or digitized instructional materials. To answer sub-problem number 5, t-test for correlated data was used to determine the significant difference between the pretest and post test performances of the Grade 9 learners exposed to traditional and digitized instructional materials.

4 Presentation, Analysis and Interpretation of Data

4.1 Level of Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed on the Pretest Results

Table 1 shows the level of performance of Grade 9 learners exposed to traditional and digitized instructional materials. It discloses that learners' pretest performance in both groups have a very low mastery with MPS of 20.94 and 18.92 respectively. This implies that both groups of learners had limited knowledge and understanding of concepts in Technology and Livelihood Education along Household Services.

Table 1. Level of Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed by the Pretest Results

Group	Mean	MPS	Level of Performance
Control	10.47	20.94	Very Low Mastery
Experimental	9.46	18.9	Very Low Mastery

4.2 Test of Significance of the Difference Between the Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed by Pretest Results

Table 2. Test of Significance of the Difference Between the Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed by the Pretest Results

Group	Mean	Mean Difference	t	Sig. (2-tailed)	Significance	Decision
Control	10.47	1.01	0.337	0.737	Not Significant	Accept H_0
Experimental	9.46					

Table 2 shows the test of significance of the difference between the pretest performances of Grade 9 learners exposed to traditional and digitized instructional materials. The table reveals that with the obtained t-value of .337, there is no significant difference ($p=.737$) between the pretest performances of the two groups of Grade 9 learners before their exposure to traditional and digitized instructional materials.

4.3 Level of Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed on the Post-test Results

It can be gleaned from table 3 that the experimental group exposed to digitized instructional materials attained higher level of performance than those who were exposed to traditional instructional materials with MPS of 77.71 described as “closely approximating mastery”. On the other hand, the control group exposed to traditional IMs obtained 47.66 equivalent to average level of mastery. It can be deduced, therefore, that exposure to digitized instructional materials help the students understand and learn the competencies in TLE 9, home economics along household services.

Table 3. Level of Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed on the Post-test Results

Group	Mean	MPS	Level of Performance
Control	23.83	47.66	Average Mastery
Experimental	38.71	77.42	Closely Approximating Mastery

4.4 Test of Significance of the Difference Between the Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed by Post-Test Results

It reveals that there is a mean difference of 14.88. The table indicates that this mean difference is significant ($p=.000$) based on the obtained t-value of 14.298. Thus, the null hypothesis is rejected at .05 level of significance. This implies that the Grade 9 learners exposed to digitized instructional materials (experimental group) performed better than those exposed to traditional instructional materials.

Table 4. Test of Significance of the Difference Between the Performance of Grade 9 Learners Exposed to Traditional and Digitized Instructional Materials as Revealed by the Post-Test Results

Group	Mean	Mean Difference	Computed T Value	Sig. (2-tailed)	Significance	Decision
Control	23.83	14.88	14.298	0.000	Significant	Reject H_0
Experimental	38.71					

4.5 Test of Significance of the Difference Between the Performances of Grade 9 Learners Exposed to the Traditional and Digitized Instructional Materials as Revealed by Pretest and Post-Test Results

Table 5 shows the test of significance of the difference between the performance of the Grade 9 learners exposed to traditional instructional materials as revealed by pretest and post-test results. It can be gleaned from the table that the mean difference of 13.36 is significant with $p < .000$ ($t = 20.867$). Hence, the null hypothesis is rejected at .05 level of significance. Grade 9 learners who are exposed to traditional instructional materials improved in their performance.

Table 5. Test of Significance of the Difference Between the Performance of the Grade 9 Learners Exposed to the Traditional Instructional Materials as Revealed by Pretest and Post-Test Results

Group	Mean	Mean Difference	Computed T Value	Sig. (2-tailed)	Significance	Decision
Control	10.47	13.36	20.867	0.000	Significant	Reject H_0
Experimental	23.83					

Table 6 discloses that Grade 9 learners who were exposed to digitized instructional materials registered a mean difference of 29.25 between their pretest and post-test results. The t-test analysis for significance of the mean difference with the obtained t-value of 57.56 ($p = .000$) indicate that the pretest and post-test means are statistically different. Thus, the null hypothesis is rejected at .05 level of significance. The learners of the experimental group significantly improved in their performance could be due to their exposure to the digitized instructional materials.

Table 6. Test of Significance of the Difference Between the Performance of the Grade 9 Learners Exposed to Digitized Instructional Materials as Revealed by Pretest and Post-Test Results

Group	Mean	Mean Difference	Computed T Value	Significance	Decision
Control	9.46	29.25	57.566	Significant	H_0 is rejected
Experimental	38.71				

5 Conclusion and Recommendation

Grade 9 learners encounter difficulties in understanding the concepts of TLE-home economics before the exposure of the group to traditional and digitized instructional materials. Grade 9 learners have the same level of performance before the exposure of the group to traditional and digitized instructional materials. The group who are exposed to digitized instructional materials performed better than the group exposed to traditional instructional materials. Digitized instructional materials is an effective tool in enhancing learner's performance in TLE particularly in-home economics. Digitized instructional materials might be the contributory factor that increased the level of performance of the group exposed to it than those exposed to traditional instructional material.

The researcher recommends the utilization of digitized instructional materials in teaching TLE particularly home economics among Grade 9 learners. 2. The school administrators should encourage teachers to utilize new strategies of teaching that fit the interest of Grade 9 learners especially in Technology and Livelihood Education.

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