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A TOUR IN THE HOME GALLERY: A LEARNING STRATEGY FOR MASTERY IN SCIENCE IN THE MIDST OF PANDEMIC

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Abstract: **This action research was conducted to support the 21st century teachers in addressing pupils' learning at home using the Home Gallery Walk strategy, a learning strategy at home to improve mastery learning in Science of Grade 6 pupils at Candoni Central Elementary School in Candoni, Negros Occidental, Philippines. It determined the effectiveness of the Tour in the Home Gallery as a learning strategy to supplement the Distance Modular Learning lessons during the pandemic. Thirty pupils from two sections of Grade Six classes participated in the study. It utilized the mixed (quantitative- qualitative) design methods using the Mean Percentage and Paired Samples t-test as statistical tools. Findings of this study revealed that the Grade 6 pupils had low mastery level during the pre-assessment and an average mastery level in the post-assessment after the intervention. It also showed that there was a significant difference between the pupils' pre-assessment and post- assessment mean scores. Findings of this study indicated that the Gallery Walk Strategy implemented at home improved the mastery level of the Grade 6 pupils and an effective learning strategy to improve pupils' learning mastery in Science.**

Keywords: **Home Gallery Walk strategy, Candoni Central Elementary School, learning mastery in Science.**

I. INTRODUCTION

Context and Rationale

Science education is a high priority area for national development; therefore, it is an essential subject for pupils to learn and master. Effective Science learning develops students' scientific inquiry skills, values, and attitudes, objectivity, curiosity, and honesty and critical thinking. These skills, values, attitudes, and dispositions are significant to individuals, families, and communities for the nation's cultural development and preservation of cultural identity.

This research was conducted due to the consistently poor performance of Filipino students in international assessments. Analysis of these assessments revealed that Filipino students have low retention of concepts, have limited reasoning and analytical skills, and poor communication skills as they cannot express ideas or explain events and phenomena in their own words.

Results of the 2018 Programme for International Student Assessment (PISA) showed that Philippines placed second lowest in Mathematics and Science. Likewise, in the 2019 TIMSS, Grade 4 Filipino pupils found that 13% of Filipino pupils were on the low benchmark mastery while 87% did not even reached this level. It implied that Filipino elementary pupils and secondary students have limited understanding of scientific concepts and limited knowledge of foundational science facts.

On the national scale, findings showed that Grade 3 elementary pupils achieved a low mastery level scores of 57.39 in the National Achievement Test (NAT) in Science from 2007-2012. Likewise, in the same assessment, the Grade 6 pupils also achieved a low mastery score of 59.66. Analysis of the results affirmed that the low mastery levels of students may be attributed to their mastery level results in English. However, in the 2019-2021 NAT Test, Grade 6 pupils had achieved 75.57 in 2019-2020 and 78 in 2020-2021. Although these scores met the Department of Education's planning standard of 75% mastery level, it indicated that pupils had average master level in Science.

However, the pandemic era changed the educational landscape. In school year 2029-2021, the distance learning modality was implemented using printed lesson modules to be accomplished by students at home with the supervision of parents and teachers. During the retrieval of modules, the researcher observed that out of 165 Grade 6 pupils, 90 pupils or 55% of them failed to answer the questions and exercises to deepen their understanding and comprehend practical applications of the concept. This learning gap became the reason why this study was conducted.

Parents and guardians play critical roles in their children's learning process. It is timely and apt that they need to get involved to ensure that even at home they still can assist their children improve their mastery level in Science. The researcher conducted a parental orientation and training in the Gallery Walk learning strategy to assist students' enhance their higher order thinking skills on analysis, evaluation, and synthesis for them to form valuable opinions and feedback.

During the pandemic era, DepEd Order No. 12, s. 2020 was implemented to encourage all Filipino households to create a home learning space or study area. The blended type of learning modes such as Modular Distance Learning (MDL), Online Distance Learning (ODL), and television (TV) or Radio-Based Instruction was implemented. In this modality, the teacher and students did not meet in person. Instead, classes were conducted online that reaches even in remote locations. Classes were conducted via online learning platforms based on weekly schedules. Classrooms were in the students' respective homes as well. The Gallery Walk Strategy was employed to supplement the modular learning delivery.

Action Research Questions

This study generally aimed to determine the effectiveness of Tour in the Home Gallery as a learning strategy for improving the mastery level in Science of Grade 6 pupils. Specifically, this sought to answer the following questions:

1. What is the mastery level of Grade 6 pupils in Science before and after the intervention?
2. Is there a significant difference in the mastery level in Science of Grade 6 pupils before and after the intervention?
3. What are the remarkable experiences after the Home Gallery is implemented?

Proposed Innovation, Intervention and Strategy

This study was on the effectiveness of Tour in the Home Gallery as an intervention to the emerging problem on the low mastery level in Science of the learners.

It utilized the mixed methods design using quantitative-qualitative methods. It was conducted at Candoni Central Elementary School, District of Candoni, Division of Negros Occidental in school year 2021-2022. Of the 143 Grade six pupils, 30 of them were identified with fairly satisfactory grades between 75 to 79 in Grade 5 Science.

Topics were based on the second quarter curriculum of Elementary School specifically on the Most Essential Learning Competencies in Science (MELCS) subject for the school year 2021-2022. The topic selected for use in the study was Determine the distinguishing characteristics of Vertebrates and Invertebrates, S6MT-11e-f-3, WEEK 4 and 5. The implementation period was on February and March 2021-2022.

The pre-test and the post-test questionnaire was utilized to determine the Grade 6 students' mastery level in Science. It utilized the Mean, standard deviation, and paired sampled t-test for correlated samples.

Parental consent were obtained for researcher to conduct home visitations before the implementation of the study to ensure that there were learning spaces at their home.

Gallery Walk strategy was performed in groups to promote collaborative learning. However, since the strategy was applied at home, participants of the study worked independently and interactively with their parents/guardians. In each home, pictures and texts were posted on their designation study stations.

Three stages were employed in this strategy.

Pre-Reading Stage.

In this stage, pupils were tasked to go around the house, station by station and described the pictures they have seen. In this stage, critical thinking, analysis, evaluation skills of the pupils were promoted as they predict what the lesson was all about based on the pictures posted around the house.

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Reading Stage.

After the pre-reading stage, pupils were given 5-10 minutes to visit each station and read the texts on each of the pictures. After reading, pupils were tasked to share to their parents what they have learned from each station. In this activity, pupils were given the opportunity to synthesize and voice out their ideas about the lesson.

Post-Reading Stage.

A set of questions were given to the pupils to answer. To promote retention, they were allowed to revisit the stations when there are questions that they do not know the answer of. The standardized questionnaires were taken from DepEd's Self-Learning Modules (SLM) on topics that was presented and were provided for 4 weeks or for one month duration. These SLMs of printed texts and pictures provided by the researcher had undergone quality and assurance on sizes and form format. Home visitations of four students per week were conducted from Tuesday until Friday in March.

Protocols were observed and local IATF permits were obtained for face-to-face home visitation, orientation and trainings for parents.

To ensure that the intervention was really implemented, close monitoring and assessments were conducted. When the participants ' performance in the strategized learning delivery has reached the advanced proficiency level, the researcher moved on to other participants. If the participant has not yet reached the desired mastery level, a follow up monitoring was conducted.

The rubric for monitoring and assessing the implementation of the intervention.

Stage	Advanced (4)	Proficient (3)	Approaching Proficiency (2)	Conditional (1)
Pre-Reading	Pupil analyzes and predicts all of the pictures about the lesson	Pupil analyzes and predicts many aspects of the pictures about the lesson.	Pupil analyzes and predicts some aspects of the pictures about the lesson.	Pupil analyzes and predicts few or no aspects of the pictures about the lesson.
Reading	Pupil Proficiently applies and process the information.	Pupil adequately applies and process information	Pupil basically applies and process the information	Pupil was not able to apply and process the information.

II. RESEARCH METHODS

Participants

The participants were limited to the identified 30 Grade 6 pupils of Candoni Central Elementary School with fairly satisfactorily final grade of 75-79 in Science in Grade 5.

Parents also participated in the study to monitor their children in the implementation of the modular learning modality and to assist the researcher to evaluate the progress of the implementation of the strategy at home.

Data Gathering Methods

A permit to conduct the study in public elementary schools was secured from the supervisor, principal, adviser, and pupils.

The mastery level in Science of Grade 6 pupils was determined by the pre-test and post-test assessment. A standardized test adopted from DepEd was used to assess pupils' mastery level. The formula below was used to compute and interpret the test scores of pupils.

Mastery Level (%)= score x 100

total no. of items

Mastery Level (%)	Interpretation
35– below	Very Low Mastery
36– 65	Low Mastery
66 – 85	Average Mastery
86 – 95	Moving Towards Mastery
96 – 100	Mastered

It utilized a mixed method design using quantitative- qualitative data.

On the qualitative data, interview with parents and pupils were conducted to ascertain their feelings and thoughts about the effectiveness of the learning strategy intervention. Responses were categorized based on themes on the effectiveness of the intervention.

Parental orientation and trainings were conducted to ensure pupils' maximum participation. Home visitation meeting schedules were arranged and agreed by parents, students, and researcher.

The researcher emphasized to students that their answers do not affect their academic performances. To uphold the confidentiality of the research data, the researchers ensured that the questionnaires did not reflect the names of the participant and all research input were safely archived. Likewise, names and scores of the respondents were kept confidentially. Questionnaire were given to the participants without discrimination.

Data Analysis Plan

Data gathered from the action research was analyzed and treated using descriptive and inferential statistics.

For question no. 1, Mean and standard deviation was used.

For question no. 2, paired samples t-test was used.

For question no. 3, Thematic Analysis was used.

The thematic analysis was employed in analyzing the texts to identify patterns or themes within qualitative data. This theoretical basis was relevant and appropriate to support the study.

Plan for Dissemination and Advocacy

The findings of this study will be basis for future comprehensive strategies on how to decrease number of pupils with low mastery level in Science. The result of the research may be used as reference for other future researches geared on improving students' mastery level not only in Science but in other subject areas as well.

III. RESULTS AND DISCUSSION

Analysis of Pre-test and Post-test Scores

Mean and standard deviation analysis was used to determine the pretest (before intervention) and post-test (after intervention) scores. The results

Showed that the pretest score (31.33±2.75) before the intervention was very low mastery while the post-test score (77.50±4.52) after the intervention was at average mastery. This implied that pupils' mastery level has improved after the intervention was implemented.

Difference of Pretest and Posttest

The Paired t-test was used to determine the significant mean difference of pretest and post-test scores set at p-value = 0.05. Results showed that the mean difference of scores before and after the intervention was 9.23. Since t = 15.53 at p-value < 0.000, the mean difference (9.23) of pretest and posttest scores indicated a statistically significant difference. It implied that the implemented intervention has significantly increased the mastery level of pupils.

Pupils Experiences using the Home Gallery

Ten pupils were interviewed about their experiences on Home Gallery intervention learning strategy, Five pupils had the highest scores while the other five got the lowest scores. Based on their responses, the following themes were formulated:

Theme 1:

The use of Home Gallery at home was fun.

Pupils found that the implementation of the intervention at home had greatly affected how they learned at home. With the Home Gallery in learning Science, pupils became more excited to learn. They were happy with the activities involved in the strategy, and they enjoyed learning the lessons.

Theme 2: Home Gallery helped pupils recall lessons.

The use of visuals and other activities involved in the strategy helped pupils to recall lessons better.

Theme 3: Home Gallery helped pupils understand lessons better.

Pupils claimed they understood and comprehended their lesson better compared with just reading the modules

Theme 4: Learning became effective using Home Gallery strategy.

Pupils affirmed that using Home Gallery strategy increased their desire to learn and recall lessons easier and better.

IV. SUMMARY OF FINDINGS

Results showed that Grade VI pupils had a very low mastery level before the intervention was implemented. After the intervention and assessment, pupils achieved an average mastery level.

There was a significant difference between the pupils' pre-test and post-test assessment scores. Therefore, a significant difference existed between these scores. It implied that there was a significance increase in scores after the intervention was implemented.

Pupils revealed in focused group discussions that utilizing Home Gallery at Home was fun, it helped them to recall lessons easily, learning their science lessons at home using the strategy was effective.

V. CONCLUSION

Based on the findings, this study concluded that utilizing the Home Gallery Walk was an effective learning strategy for improving the mastery level of pupils in Science. It provided pupils with the opportunity to learn Science lessons at home using learning strategies on analysis and description, reading and rereading texts, retelling, or sharing of ideas with parents, and answering comprehension questions based on the lesson presented.

VI. RECOMMENDATIONS

Cognizant of the positive findings of this study, the researcher recommends the use of Home Gallery Walk as an intervention for pupils' mastery level not only in Science but also in all subject areas.

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