RESEARCH O'CLOCK
Improving Basic Education Through Research

RESEARCH BULLETIN

CONTENT-BASED STORY ANIMATION AND DIGITAL STORYBOOK: THEIR EFFECTS ON STUDENTS' COMPETENCE IN EXPLAINING HOW THE DIFFERENT ORGAN SYSTEMS WORK TOGETHER

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INTRODUCTION

The swift advancement of Science and Technology stances a significant challenge to the Philippine education system to be at par with the fast-changing society. Keeping up to this advancement lies primarily on the quality of education provided to every Filipino learner. However, this is not just about acquiring advance facilities and technologies but also looking directly into the needs of the learners and providing necessary intervention to meet the demand of equipping learners with necessary skills and competence which will prepare them to take on the challenges of the 21st century. This is one of the provisions of the K to 12 Basic Education Program as stated in DepEd Order No. 021, s. 2019. The aim of this study is to test the effectiveness of Content-Based Story Animation and Content-Based Storybook on students' competence in explaining how the different organ systems work together.

In its latest participation in Trends in International Mathematics and Science Study (TIMSS) in 2003, the Philippines ranked 43rd out of 46 countries in HS II Science while it placed 23rd out of 25 participating countries in both grade 4 Math and Science (The Manila Times, 2014). Moreover, in its first-time participation to the Program for International Student Assessment (PISA), the Philippines ranked second to the last in Math and Science among 79 countries.

Such survey and test reflect a slow performance demonstrated by Filipino learners which is also very patent in the result of 2018 National Achievement Test of Region 2. Science has the lowest rank among all five (5) subjects tested in grade 6 with a Mean Percentage Score (MPS) of 28.42, and in the Division of Tuguegarao City, Science has an MPS of 31.02, an affirmation that there really lies a problem. Moreover, the results of the three consecutive school year periodical examination of the Grades 3 to 6 learners of Tuguegarao East Central School show that Science is one of the two (2) subjects with the lowest percentage of achievement at 56.23%, 67.54% and 69.12% respectively.

Since practical laboratory is not possible in Elementary Science, there are topics that are taught theoretically which require deeper understanding and comprehension. Science may sometimes be difficult for learners to comprehend when they are not able to see the phenomenon or experience it in real life (SCHOOLBAG The Education News Site, 2016). This suggests a need to expose learners to alternative situations where they can relate to themselves. This agrees with the concept that learning must be designed in such a way that students can carry out activities and solve problems that are characteristic of such tasks in real situations in daily life (SEAMEO INNOTECH, 2018).

One way to relate Science concepts with real life situation is to contextualize/localize the materials through short stories. Short stories with authentic texts would let learners understand how Science concepts work in relation to real life situations and according to Canvas Network, when designing contextualized instruction, the role of a

teacher is to create effective, relevant, and engaging learning experiences.

In this study, true experimental research design (three group pretest-posttest) was used to test which method/s of instruction is the most effective in teaching Science and qualitative research design (open-ended questions) to know the advantages and disadvantages of the interventions employed. Three (3) groups of Grade 6 students, 15 each, were pre-tested and post-tested, the ultimate difference is that two groups, Section Gamma and Section Delta (experimental groups), were exposed to the use of content-based story animation and content-based digital storybook as supplemental tools to their Self-Learning Modules and Online Distance Learning Modality while the Section Infra (control group) was exposed only to the use of Self-Learning Modules and slide decks during virtual classes. The researcher utilized the One-Way Analysis of Variance (ANOVA) to test the differences.

DISCUSSION OF RESULTS

The increase in scores of the Grade 6 pupils under each group based on the pretest and posttest mean scores means that there was an improvement in the performance of the three groups of students along different methods of instruction. Meanwhile, the interpretation "not significant" in their pretest and posttest suggests that the three (3) groups of learners are homogeneous or have equal competency level before and after their exposure to the different methods of instruction.

Using One-Way Analysis of Variance (ANOVA), the computed value for posttest is less than 0.05 which implies that there is a significant difference on the posttest scores of the control group and experimental groups. This is due to the fact that the pupil-respondents were already exposed to the different methods of instruction.

On the other hand, the test for significant increase using paired sample t-test and the pos-hoc analysis through Tukey's Multiple Comparison Test revealed that both content-based tools are more effective than the use of only SLMs and slide decks however, content-based digital storybook is the most effective method of instruction.

Moreover, the responses of the pupil-participants encapsulated the features of a good learning material particularly on how it was related to real life situation for better understanding, how the illustrations and animation was comprehensively packaged to arouse learners' interests, and how the storyboard and script was carefully written to help learners realized what should be learned while recorded responses on disadvantages of the different intervention materials/tools should not be ignored especially that they might have been contributory factors to low comprehension level and may have given learners difficulties in understanding the lesson.

CONCLUSION AND RECOMMENDATION

Content-based intervention materials and tools presented through story animation and digital storybooks can improve the competence of the students in explaining how the different organ systems work together; the use of content-based intervention tools as supplemental materials is better than the use of SLMs and slide decks presented through online/virtual class only; among the three (3) methods of instruction, the use of digital storybook as supplemental tool/material is the most effective method of instruction; the identified features of the content-based story animation and content-based digital storybook emerged to have played a vital role and have immense contribution and effect to the increase in the performance of the learners after these were used as intervention materials. Thus, the use of animation and

storybooks is highly recommended as a strategy not only in Science 6 but also in other learning areas and across all grade levels. The recorded disadvantages of the) tools might have hindered the learners in achieving a much higher performance. Therefore, they need to be improved. Moreover, it would serve as a basis/baseline data for a follow-up study that would focus on validating some factors that could affect the implementation of the different teaching methods used in this study. The overall result of this study can be considered as a basis in crafting a localized policy to further improve the delivery of basic education.

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This Research Bulletin is an abridged version of the full manuscript of Ms. Macalan and supplements their research presentation during the Research O'clock last July 16, 2022, under the topic, Exploring Teaching and Learning Interventions in Blended Learning for Elementary Learners. To request a copy of their manuscript, send an email to ps.prd@deped.gov.ph.