

# LESSONS-ON-THE-GO INSTRUCTION (LOG In): A MELC-BASED ELECTRONIC SUPPLEMENTARY LEARNING MATERIAL IN EARTH AND LIFE SCIENCE FOR SENIOR HIGH SCHOOL STUDENTS IN THE NEW NORMAL

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## ABSTRACT

COVID-19 pandemic challenged the Department of Education – school administrators, curriculum specialists, teachers, learners, and guardians to continue education where distance education is implemented which requires appropriate pedagogy, strategies, and technology to bring education at home. Department of Education released orders and memorandum about guidelines to implement Basic Education Learning Continuity Plan (BE-LCP) in each school. Various strategies and interventions were tried to deliver the lessons in distance learning approaches. Modular Distance Learning (MDL) as learning modality used for Grade 11 in Binan City Senior High School- Sto. Tomas Campus challenged the teacher-researcher to develop an electronic supplementary instructional material to support the prescribed Self-Learning Module (SLM). Thus, this study explored the effectiveness of electronic supplementary instructional material in Earth and Life Science on learner's academic performance and learning experiences.

This study utilized quasi-experimental research design with controlled and experimental group. The pre-test was administered to both groups via Google Forms prior to intervention. The experimental group was selected purposively. The Lessons-On-the-Go Instruction (LOG In) as electronic supplementary instructional material in Earth and Life Science was developed and was administered to experimental group for the whole second quarter. The post-test was given after implementation in both groups. In addition to post-test, the experimental group was asked through online interview about their significant learning experiences on the use of the intervention. Quantitative data was collected, analyzed, and interpreted using the weighted mean, MPS and t-test analysis. While qualitative data was collected and encoded to interpret responses.

The results of pre-test, post-test and its learning gain scores or increment clearly suggested that the used of LOG In to support SLM increased the mastery level in Earth and Life Science. There is a significant difference on the post-test performances of controlled and experimental groups which signifies that learners who used the printed SLM with LOG In as supplementary instructional material performed better than those learners who used the printed SLM alone, hence the utilization of LOG In was effective. Learners had a meaningful learning experiences toward the use of LOG In according to their shared responses.

This study showed the effectiveness of LOG In as electronic supplementary instructional material on learners' academic performance and learning experiences. This intervention can be one of the effective strategies and interventions to support SLM in distance learning modality.

**Keywords:** *electronic supplementary instructional material, distance learning*

## INTRODUCTION

The right of every Filipino learner to quality and equitable education especially in this challenging time of COVID-19 pandemic is still the mantra of educators, school administrators and partners in education. The Department of Education is addressing challenges in the basic education through the adoption of the Basic Education Learning Continuity Plan (BE-LCP) for School Year 2020-2021 stated on DepEd Order No. 012, s. 2020. Adoption of the Most Essential Learning Competencies (MELC) and learning delivery modalities are mentioned and given emphasis to address the concerns in education.

The Regional Order No. 306, s. 2020, Corrigendum to the enclosures in RM Order 10 s. 2020 Re: Guidelines on the Implementation of MELC Pivot 4A Budget of Work (BOW) in all Learning Areas for Key Stages 1-4 explained how the department came up with MELCs in each subject area. DepEd Order No. 21 s. 2019 on Policy Guidelines on the K to 12 Basic Education Program and all other existing DepEd issuances on curriculum management, provides explanation and details on how these MELCs and enabling competencies are budgeted and distributed in each quarter.

Teachers and learners play an important role and responsibilities in distance learning. Teacher provides environment, materials, and guidance for collaborative learning, interactive discussion groups, individual learning, and research. Students are self-responsible for their own learning. Students use appropriate technology to interact collaboratively with each other and teacher and use feedback and consultation to develop and refine knowledge, skills, and attitudes. (Isman, 2004).

Distance learning activities are designed to fit the specific context for

learning, the nature of the subject matter; intended learning outcomes, need and goals of the learner, the learner's environment and instructional technologies methods. (Rashid, 2012)

There is a need to choose appropriate supplementary learning materials delivered through various media formats such as video, audio and print in distance learning approach. The difference of learning experience arises from the presentation of the course materials and from the situation of students and, therefore, different pedagogic skills are required. (Malik et al, 2007)

These ideas and concepts were the basis of creating the Lessons-On-the-Go Instruction (LOG In), a MELC-Based supplementary learning materials in Earth and Life Science to gain interest and meaningful learning experiences under MDL approach. LOG In is a digital-offline learning material which is more inclusive, engaging and creative intended for the senior high school learners. LOG In was created in Kotobee Author application, an interactive ebook creator rich in video, audio, images, 3D, and book widgets.

Thus, the main reason for conducting the study is to assess the effectiveness of the Lessons-On-the Go Instruction (LOG In) as MELC-Based electronic supplementary instructional material in Earth and Life Science in terms of academic performance and learning experiences of the learners.

## METHODOLOGY

This study utilized quasi-experimental research design which involved controlled and experimental groups to determine the effectiveness of the intervention on academic performance and learning experiences. This research design also analyzed the significant difference in the

post-test performances of controlled group and experimental group after the intervention.

There were 45 student-participants in both experimental and controlled group for the purpose of match pairing in statistical analysis. Both groups utilized the printed module and took the pre-test and post-test via Google form, but in the experimental group, they accessed the LOG In and asked for a response about learning experiences using the intervention.

Purposive sampling was use in identifying its respondents in experimental group who are willing to participate to the study by taking the pre-test and post-test, access the LOG In in Kotobee app and response to online interview about their learning experiences provided the accomplished letter of intent.

Review of the content, use of language and instructions on the pretest and posttest and supplementary instructional material in Kotobee app by a Master Teacher specializing in Science was conducted before the implementation of the intervention. Suggestions for revision were considered.

LOG In for each MELC consists of seven parts: LOG In (attendance check), learning target (MELC), sci-zone (self-directed activity), sci-talk (concepts), sci-link (video links of the lesson), LOG In check (test items for assessment of learning), and LOG OUT (learning experience).

Validated pre-test and post-test served as an instrument to determine the academic performance of the participants in this study before and after the conduct of the lessons in second quarter. For the learning experience of student who utilized the LOG In, a descriptive questionnaire was crafted and administered via online interview. The responses were encoded to determine most common learning experiences.

Pre-test, post-test and its learning gain scores were analyzed and interpreted using the weighted mean, MPS and increment. To determine the significant difference of post-test performance of controlled and experimental group after the conduct of intervention, independent t-test was utilized. The collection of responses about the learning experiences in the LOG In were collected and considered in determining the learning experiences of the recipients about the intervention. This was conducted through online interview.

## **RESULTS**

This study aimed to determine the effectiveness of LOG In as electronic supplementary instructional material in Earth and Life Science by analyzing and interpreting its pre-test and post-test performances, the significant difference of post-test performances of controlled and experimental groups and the learning experiences of the recipients through interview.

The pre-test MPS, 38.67% of the experimental group was almost the same as the pre-test MPS scores 38.18% of the controlled group. The post-test MPS of the experimental group was 71.47% while in the controlled group got a post-test MPS of 44.62%, which showed higher difference.

The results showed that the students' mastery level in Earth and Life science for the second quarter increased by 10.44% in using printed SLM alone while utilizing the use of LOG In as supplement to SLM increased by 32.80% which suggest that the intervention significantly increased the mastery level.

The significant difference in the post-test performances of controlled group and experimental group was computed using the independent t-test at 0.05 level of significance.

The result showed the computed p-value of 0.00 is less than 0.05 level of significance, proved to reject the null hypothesis. It means that the mean difference of 11.42 in the post-test scores of controlled group and experimental group is statistically significant. It further signifies that the learners who used the printed SLM with LOG In as supplementary instructional material performed better than those learners who used the printed SLM alone.

To determine the significant learning experiences of learners who used the LOG In as supplementary instructional material, the teacher-researcher conducted an online interview to the recipients. It revealed common impressions toward the utilization of LOG In as follows; "Since I'm a visual learner, the multimedia resources offered by the LOG In was a great help to me"; My significant learning experiences I gained using the LOG In was to boost my interest about the lesson; "It boost my excitement to study science and it help me to answer the questions that I needed."; I expand my knowledge about the topic, for me it really effective for us to use the LOG In because it really provides what we need as learner."; It helps me provide answers in the lessons. The videos help me understand the lesson."; I felt more engaged toward the lesson." Aside from the positive learning experiences brought by the utilization of LOG In as supplementary instructional material, learners also mentioned about technical difficulties in accessing and operating the LOG In in Kotobee on their android phones.

## **DISCUSSION**

Based on the study on the effectiveness of the used of LOG In as supplementary instructional material, the teacher-researcher suggests that LOG In is one of the effective interventions to increase mastery level in Earth and Life Science and

bring meaningful learning experiences to the learners in distance learning. Thus, it can be applied to other subjects as well to support self-learning module.

Educators are encouraged to transform their lessons in technology-based platform or application which are rich in videos, animation, images, text and interactive quizzes because it shows positive effects to the learning of the students. Learners will be more engaged, interested, and motivated to study their lessons.

Electronic supplementary instructional materials compiled to an e-book application such as Kotobee greatly help learners fully understand the lesson in distance learning.

With an appropriate multimedia resources and pedagogical strategies linked with the students' ability to cope with distance learning using technology can attain each learning competencies and experience meaningful learning.

In development and utilization of electronic supplementary instructional materials, teachers should consider appropriate applications or format to easily access the material.

School administrators and curriculum specialists may consider the trainings to capacitate teachers in crafting, developing, and utilizing electronic supplementary instructional material as support to self-learning module in the respective subject areas.

Further study about utilization of supplementary materials is encouraged to determine different aspect of learner's academic performances and attitudes in distance learning.

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