Earthan Strategic Intervention Material (ESIM)

JU-IM T. JIMLAN

Abstract — This experimental study ascertained the benefits of Earthan Strategic Intervention Material (ESIM) to Grade 7 learners and science teachers of Tamalagon Integrated School to bridge the gap of difficulty in grasping global warming content in the science lesson for freshmen learners. The researcher discovered that learners struggled on this considering its importance in promoting environmental literacy and ecological awareness. Earthan Strategic Intervention Material (ESIM) is anchored on the nationally published comic book ERTHAN, The Guardians of Nature written by Arnel G. Caranto of LIFE (Lifelong Initiatives in the Formation of Ecosystems) Inc. vis-à-vis the learning competencies taken from DepEd Curriculum Guide (2016). The two randomly selected classes our of four heterogenous classes sections were the respondents of this study. One class was exposed to conventional teaching and the other class was employed with Earthan Strategic Intervention Material (ESIM). A twenty item ready-made questionnaire taken from DepEd Learners Module in Science 7 (2013) was utilized before and after the intervention. Results showed that significant improvement in scores of the learners was recorded using Earthan Strategic Intervention Material (ESIM) than conventional teaching. It is concluded that the concepts of global warming was understood clearly if learners were taught with strategic intervention material with visually entertaining concepts, infused with cooperative teaching pedagogies and motivated with experiential learning strategies.

I. Content and Rationale

Science education cultivates students' curiosity about the world and enhances scientific thinking. Through the inquiry process, students will recognize the nature of science and develop scientific knowledge and science process skills to help them evaluate the impacts of scientific and technological development. Science education has been programmed by educational systems around the world, not only to inculcate scientific literacy, but also to develop environmental literacy among the students.

When students become environmentally literate, they make informed decisions concerning the environment, willing to act on these decisions to improve the well-being of other individuals, societies, and the global environment and most importantly participate in civic life. They can make sound judgments on issues that may impact the environment in general. This is needed since the environment has been greatly affected by anthropogenic activities brought about by science and technology. The effects of such activities can be observed in deforested areas, eroded land sites, polluted waters and air, and even species extinction. One effect has been considered to be the primary environmental issue of the times – Global Warming (Bozdoğan, 2011).

Global warming is the long-term warming of the planet's overall temperature. Though this warming trend has been going on for a long time, its pace has significantly increased in the last

hundred years due to the burning of fossil fuels. As the human population has increased, so has the volume of fossil fuels burned.

Education is an essential factor in the ever more urgent global fight against climate change. Knowledge regarding this phenomenon helps young people to understand and tackle the consequences of global warming, encourages them to change their behavior and helps them to adapt to what is already a global emergency.

Educating citizens, especially children, and raising their awareness regarding the causes and consequences of climate change. In the Philippines, global warming concepts are embedded in the curriculum because the curriculum aims to develop well-informed citizens who can make sound decisions and judgments on environmental issues. However, Filipino students obtained below average performances in Science where global warming concepts are included. With the various studies that revealed students' limited knowledge and misconceptions about global warming, and the below average performances of students in Aklan innovative ways of teaching are called for. There must be pedagogies where students are active participants and that embed visual materials and constructivism.

The use of Earthan Strategic Intervention Material (ESIM) as a basis of an instructional way of teaching global warming concepts is seen as the answer to the problem. This intervention material can be integrated in an innovative pedagogical approach called SIM-based teaching. In SIM-based teaching, an instructional material is used to re-teach concepts and skills. These materials are given to learners to help them master a competency-based skill that they were not able to develop during regular classroom teaching. SIMs are introduced to stimulate the activity of the students, thereby increasing their level of understanding, enhancing students' performance in Science, and affecting positively their attitudes towards science.

Since the core learning area standard of Science is to demonstrate understanding of science concepts, skills, attitudes and values that would lead to students' manifestation of respect for life and the environment, bearing in mind that Earth is our only home (DepEd, 2013), SIM-based teaching was applied to the concepts of global warming.

II. Innovation, Intervention and Strategy

The researcher named the innovation ESIM (Earthan Strategic Intervention Material) an instructional material to answer the gaps of difficulty in understanding abstract global warming concepts. The researcher strongly believed that ESIM can be a form of edutainment, educating at the same time entertaining the learners by the interactive activities in the ESIM that promotes collaboration and cooperative learning.