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Real Life Experiences in Inquiry-Based Life Science Instruction

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Abstract - *Teachers must provide real world experiences for them to engage and articulate well with around global issues. They incorporated their own cross-cultural experiences into the classroom through informal conversation, discussions, around artifacts and photos, and lesson plans that integrated knowledge gained and relationship built though their global experiences. The need for utilizing real life experiences in science teaching is but a requirement in today's classroom as the new generations of learners are ready to work with the different global issues and concerns of which can play an important role in the learning process. The utilization of real life experiences in science instruction grows as a measure when teachers are able to develop an engaging and positive learning environment for learners. With this, teachers should carefully plan how to utilize the students' real life experiences efficiently and effectively in inquiry-based science instruction to enhance more the teaching-learning process.*

The study used the descriptive method of research using a researcher-made questionnaire as the main instrument for gathering data. The respondents were 102 public junior high school science teachers in the Division of Batangas. Weighted mean and Pearson r were the statistical tools applied in treating the data gathered. Based on the analysis, it was revealed that real life experiences in life science were moderately utilized by the students while teachers applied inquiry-based learning activities along its phases of exploration, concept introduction, and concept application to a moderate extent. It was recommended that the proposed learning plans be used to enhance science instruction and an instrument or assessment tool may be developed to determine the impact of utilization of real life experiences in teaching-learning process.

***Key Words*: Real life experiences, engaging activities, Junior High School science teachers**

1. INTRODUCTION

The K to 12 science curriculum provides learners with a collection of competencies important in the world of work and in a knowledge-based society. It pictures the development of scientifically, technologically, and environmentally literate Filipinos who are critical problem solvers, responsible stewards of nature, innovative and creative citizens, informed decision makers and effective communicators. This curriculum is designed around the three domains of learning science; understanding and applying scientific knowledge in local setting as well as global context whenever possible, performing scientific processes and skills, and developing and demonstrating scientific attitudes and values.

Teaching science necessitates great patience in answering and explaining how and why. Science teachers have many obligations and responsibilities that the teaching professions demands of them. Science requires teachers to plan carefully the experiments and demonstrations necessary to be performed in connection with daily lessons and students' interest [1]. Science teachers play an important role in improving the science literacy of their students. In achieving and building students' interest and literacy about science, teachers must have an appropriate approach to be used in teaching. In teaching science, students must be active and participative in the learning process. Engaging students in variety of activities can help them in constructing their own knowledge by experiencing and observing results of the experiment [2]. the need for utilizing real life experiences in science teaching is a must in today's classroom as the new generations of learners are ready to work with the different global issues and concerns of which can play an important role in the learning process. However, the utilization of real life experiences in science instruction grows as a measure when teachers are able to develop an engaging and positive learning environment for learners. Drastic changes in educational system are inevitable because of the recent demand of sophistication to keep abreast with the accelerating changes in community. With this, teachers should carefully plan how to utilize the students' real life experiences efficiently and effectively in inquiry-based science instruction to enhance more the teaching-learning process.

1.1 Real Life Experiences in Inquiry based instruction

The information age opens a world of possibilities for teachers to demonstrate the value of subjects in a wider life context by connecting student interests to real world experiences – creating active learners who see the classroom as a place they want to be. Nurturing in-depth understanding and a passion for innovation, today's educators seek to maximize learning experiences so students can develop the skills needed to navigate a rapidly evolving world [3]. Real-world connections draw from, or upon, actual objects, events, experiences and situations to effectively address a concept, problem or

issue. It involves learning which allows students to actually experience or practice concepts and skills, as opposed to learning that is theoretical or idealistic.

Allowing the students to experience and observe the world around them by taking them outside of the classroom is a great way to give them a memorable experience that they can always take with them. This can be done through a virtual field trip, where students can get an inside look at something like the White House or a spacecraft through digital media, or outside of the classroom, where the children can learn to observe the world through their own eyes. Incorporating current affairs into the classroom creates a more engaging lesson which helps the students to become aware of global issues and allowing them to make connections between what is being taught at school and what is happening in the real world. Giving an opportunity to students to apply their classroom knowledge to a real-world problem will help them to see the value of learning. Whichever strategy that the teacher chooses to try, their goal is to create an authentic experience that will help students engage in their learning more [4].

Science is a systematic methodology of finding answers to daily inquiries, suggesting solutions to a problem situations or simply finding expressions for one's curiosity [5]. It is a procedure which is modeled after the way a scientist searches for knowledge. A new learning environment designed to satisfy student's inquiries through self-activity was provided. During the elementary years, especially during science subjects, pupils get easily bored with routinary activities, instead they like to try their own ways of doing things. This becomes more evident when students get into the higher years. Using inquiry approach in teaching, science enhances the students' reasoning ability. Teaching science as inquiry provides teachers with opportunity to develop students' abilities and to enrich their understanding of science. As students focus on the process of doing investigations, they develop the ability to ask question, investigate aspects of the world around them and use their observation to construct reasonable explanation for the question posed.

The inquiry approach in teaching science, also termed as discovery approach or problem-solving approach, puts a premium on the processes that students employ in obtaining scientific information. It likewise stresses discovering and understanding science concepts through activity-based lessons. As such, all learning activities are designed to provide direct experiences with natural phenomena and nature as a whole. As a classroom methodology, it revolves around the student's daily interaction with his environment, more especially on the questions he asks, the information he receives, and what he does with his new leanings [6]. Inquiry approach as a mode of teaching offers promise in directing the learning activities of the pupils or students to attain their objectives. This is modeled after the investigative processes employed scientist in analyzing a problem.

Unlike other teaching models which emphasize direct instruction, inquiry teaching aims to help students seek answers to their own questions, gather pieces of evidences and draw on conclusions and generalizations. It puts premium of self-directed learning activities patterned after endures and processes. As such, they learn by inquiring about something, weighing and sorting out information and building their own meaning. In so doing, they employ such processes as analyzing, evaluating and synthesizing with an end in view at discovering concepts by themselves. Ultimately, they become independent, autonomous learners capable of learning in their own.

1.2 Preparation of Learning Plans

A well-planned lesson helps the teacher to teach with confidence. Planning and developing lesson plans entail a number of competencies that teachers need to develop in their attempt to enhance instruction. The most important things to consider in enhancing instruction are equipping teachers with the needed competencies in planning instruction. Lesson planning is one way to help students achieve desired unit of learning outcomes and helps to organize the curriculum and address complex classroom variables. It provides with a sense of direction and a feeling of confidence and security. For effective teaching, lesson planning should have the following elements namely: identifying clear lesson and learning objectives while carefully linking activities to them, creating quality assignments, and quality student work [7]. Planning lessons have clear goals which are logically structured, and progress through the content step-by-step. Teachers also gave equal opportunities to their students to ask content-related questions. This promoted free learning among students, also to avoid biases. Inquiry-based approach was very useful to increase the student's ability to use their knowledge in new situations and contexts.

Furthermore, students were able to build self-confidence on asking questions from teachers. This means that the teachers were able to build stress-free relationship with the students and were not that strict. This was very important to make the students express freely their ideas and opinions. He concluded that in inquiry-based class, teachers allow their students to manage their own learning with the help of guide questions given to them. The teacher only serves as the facilitator of learning and not the sole source of knowledge. Both the teachers and the students consider inquiry-based approach useful in teaching-learning process. This study recommended that inquiry-based approach may be reviewed by science coordinators prior to utilization by teachers and development of an instrument or assessment tool may be

undertaken to enhance utilization of inquiry-based method in teaching other subjects.

2. RESEARCH METHOD AND PROCEDURE

This study used descriptive research method. The subjects of the study were taken from the 102 public school Science teachers Division of Batangas. No sampling method was applied because all teachers in the locale served as the respondents.

The main instrument used in the study was the researcher made – questionnaire which was evaluated, validated, administered, tallied and scored according to the accepted practices in research. Interview was done to further validate the information gathered.

To gather the needed data, the researcher sought permission to the Division Superintendent to distribute the questionnaire to the target respondents. After the approval, the researcher administered the questionnaire to the science teachers in different secondary schools on the agreed schedule of distribution.

3. RESULTS AND DISCUSSIONS

The level of students' manifestation to real life experiences in life science is presented in Table 2. This is the science of life and living organisms and their interactions with the environment. It is important to study life science because it allows students to better understand their body, their resources and potential threats in the environment. As revealed in the study, the real life experiences in life science was moderately manifested by the students affirmed in composite mean of 3.23. This shows that most of the lessons in life science can make use of real life situations since the subject pertains to the life processes and experiences; however, it can be deduced that the students need to give more focus on the importance of life and its processes by maintaining a healthy body and choosing the right food as well as caring for plants which support life. This affirmed the idea of Crawford that teachers, as facilitator, should include more hands-on activities where real life experiences are used to deliver learning.

Table 2
Real Life Experiences in Life Science

Items	WM	VI
1. Avoiding smoking, excessive intake of caffeine and alcohol to maintain a healthy body	3.71	GM
2. Practicing ways of energy conservation (i.e. unplugging devices when not in use, using energy-efficient appliances, use human power)	3.59	GM
3. Eating nutritious foods to keep body healthy and strong	3.56	GM
4. Eating food regularly following meal patterns	3.31	MM
5. Reducing the use of household chemicals and pesticides	3.21	MM
6. Maintaining normal metabolism by exercising regularly	3.00	MM
7. Using animal manure in crop production	2.73	MM
8. Observing and recording the changes in the size and appearance of various parts of plants (i.e. roots, stem, leaf)	2.70	MM
Composite Mean	**3.23**	**MM**

It can be gleaned in the table that avoiding smoking, excessive intake of caffeine and alcohol to maintain a healthy body was greatly manifested by the students. This obtained the highest weighted mean of 3.71. This indicates how responsible the students are in taking care of the body systems especially the respiratory system which is responsible for the exchange of carbon dioxide and oxygen in the human body. In layman's term, students have awareness of how important this system into their health specifically breathing. When integrated to science learning, students realize relevance of body systems. Borassi mentioned inquiry teaching provides an atmosphere conducive for students to chart and propel their own course of action; it develops independent thinking coupled with a strong sense of responsibility. Thus, it is about time that teachers offer their students a chance to plan and manage their own learning activity.

Practicing ways of energy conservation like unplugging devices when not in use, using energy-efficient appliances, and use human power was greatly manifested by the students justified in weighted mean of 3.59. From this, it can be inferred that the students are well-informed of the ways in conserving energy where it is evidently applied in their houses as well as in school. Energy conservation is emphasized in dealing with the proper use of resources where humans depend to support their lives. This conforms to the idea of Conole that when real-world connections are drawn, students successfully achieve authenticity of learning. It can be noted that providing real-life situations in learning helps students fully complete the tasks encountered in life.

Eating food regularly following meal patterns was moderately manifested by the students expressed in weighted mean of 3.31. This shows that the students are aware on the importance of having a balanced diet to prolong life but they need continually to be more encouraged in maintaining a healthy lifestyle especially today where they are exposed to preserved goods and instant foods. Instead, students should give more focus on incorporating nutritious foods in their diets such fruits and vegetables which are rich in vitamins and biomolecules the body need. This affirmed the contention of Runnel that students who apply their classroom knowledge to a real-world problem will see the value of

learning. This helps the students to become aware of issues and allows them to make connections between what is being taught at school and practicing it in their day to day living.

Using animal manure in crop production was moderately manifested by the students. This was affirmed in weighted mean of 2.73. It could be traced from the result that the students are not fully exposed in this lesson because of the unavailability of places to conduct this kind of activity. Though the lesson is tackled in waste management practices, it needs an effective strategy to equip the learners with this real-life application. This supports the idea of Bossing that science teaching should consist of experiences exemplifying about the natural world and problems about human beings. Applied in this context, students should have the chance to apply their understandings in new situations.

Moreover, observing and recording the changes in the size and appearance of various parts of plants (i.e. roots, stem, leaf) obtained the lowest weighted mean of 2.70 which was moderately manifested by the students. This shows that the students do not give too much attention to the development of plants; it could be lack of experience in tree planting/gardening activity where they observe the changes that happen in the plants. Teachers may require the students to participate in tree planting or gardening activity and let them observe the growth of the plants. In addition, knowledge on the importance of plants can make the students more active and engaged as they support humans' existence. This conforms to the idea of Runnel that exposing the students to real-world activity can make learning more meaningful to them, and it can help spark excitement in learning. Seemingly, this needs more strengthening among students.

4. CONCLUSION

Avoiding smoking, excessive intake of caffeine and alcohol to maintain a healthy body is manifested among the real life experiences in life science.

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