INQUIRY-BASED APPROACH: AN EFFECTIVE METHOD IN TEACHING SCIENCE

DINA B. SANCHEZ
TEACHER II
MAGSAYSAY NATIONAL HIGH SCHOOL

Teaching methods in Science had evolved through the years. Different styles and techniques are presented to develop and enhance the performance of the students in Science. Educators think of many ways to improve the quality of education in Science despite of the struggles they meet. The scarcity of classrooms and laboratories among elementary and secondary schools contribute a lot in the poor performance of the students in Science.

Some studies proved that teaching method comprises the principles and methods used for instruction to be implemented by teachers to achieve the desired learning or memorization by students. These strategies are determined partly on subject matter to be taught and partly by the nature of the learner. For a particular teaching method to be appropriate and efficient it has to be in relation with the characteristic of the learner and the type of learning it is supposed to bring about.

Davis (1997) suggests that the design and selection of teaching methods must take into account not only the nature of the subject matter but also how students learn. In today’s trend multimedia aid greatly in the learning of the students. Creativity is also accountable to determine how students learn.

Traditional teaching method, where teachers do all the action, give direct instructions and outcome is expected, is no longer arouse the interest of the students. This is the reason why teachers opted to use Inquiry –based approach. Inquiry-based teaching is a pedagogical approach that invites students to explore academic content by posing, investigating, and answering questions. Also known as problem-based teaching or simply as ‘inquiry,’ this approach puts students’ questions at the center of the curriculum, and places just as much value on the component skills of research as it does on knowledge and understanding of content. In this methods students will generate their own content-related inquiries and proper investigation follows. Teachers seem
passive in this strategy but in reality they have a lot to do if they choose this method. They have to plan lessons that provide rich experiences that will provoke students’ thinking and curiosity; to plan carefully-constructed questioning sequences; to manage multiple student investigations at the same time; to continuously assess the progress of each student as they work toward their solution or final product; and to respond in-the moment to students’ emerging queries and discoveries.

White, et.al (1999) stated in their journal that in an inquiry-based curriculum yielded significant gains in student achievement without sacrificing state curriculum standards. In their partnership with Detroit Public Schools, researchers at the University of Michigan implemented inquiry-based science units in sixth, seventh and eighth grade classrooms over a three year period. They have created an activity and invited students to create projects to explore simple machines and the concept of force. Over 8,000 students were tested before and after the curriculum was implemented and to assess their knowledge of the content, understanding of the process, and overall achievement. Each of these three categories was evaluated for students enrolled in the six courses offered using this curriculum, resulting in eighteen assessment categories. In seventeen of eighteen categories, students who took part in the inquiry curriculum made statistically significant gains in achievement. The researchers concluded that their results demonstrate that an inquiry approach can benefit students who have been low achievers in the past.

Kahle, et.al (2000) conducted a study in Urban African-American middle school science students: Does a study involving over 1400 students found that inquiry-based approaches in middle and high school language arts classrooms allow both low- and high-achieving students to make academic gains. In a large-scale study that included sites in California, Florida, New York, Texas, and Wisconsin, researchers observed 64 classrooms to determine whether the teacher primarily focused on fostering student inquiry into literary themes or whether they emphasized simple recall of details of plot and character. A variety of achievement data were also collected. The analysis revealed that discussion-based inquiry approaches were significantly related to improved student performance. Further analysis controlled for initial literacy levels, gender, socioeconomic status, and race/ethnicity, and the researchers concluded that these approaches were effective across a range of situations, for students of varying levels of academic ability, whatever classrooms they were in.
Through these researches, educators in the Philippines may be challenged to implement inquiry-based approach as their teaching strategies, but this method requires a lot time, effort, creativity and resourcefulness. Department of Education must give seminars and trainings regarding this method to fully equip the teachers in their battle inside the classroom.

References:


julie@inspiredteaching.org.