Author	Diaz, Lucy G.
Title	Learning Strategies of High School Biology Students and Improvement of Biology Instruction
Year	2008
Program	Doctor of Philosophy in Education (Biology Education)

ABSTRACT

The study aimed to look into students' (1) learning aids and strategies as affected by personal factors, and (2) learning environment and their influence on how they learn biology, for the purpose of culling from them some cues that may be useful in improving instruction in high school biology and in motivating students to study harder and to participate actively in the biology class. With the view of eliciting students' ways of learning biology, journal notes, questionnaire-checklist on personal learning aids/strategies, instructional aids checklist, learning resources rating scale, and class activities rating scale questionnaire were administered to 30 second year students in one of the public high schools in the Visayas.

The respondents represented high, middle and low performers; they were observed in class and interviewed in-depth in separate venues. Class observation report was focused on teaching aids, teaching-learning activities and assessment. To verify and validate the finding in the qualitative data, triangulation was employed.

In quantitative analysis, the statistical tools used were mean, frequencies and percentages. Krushkall Wallis and Mann-Whitney U test were used to determine if there is a significant difference among the respondents in the learning aids/strategies commonly used in reading, in reviewing for an exam, and in taking down lecture notes when they are grouped according to learning performance, learning style and gender.

The results revealed that learners differ in their strategies, approach and capabilities for learning biology. Through learning and social acculturation, they acquire their own preferences for particular strategies in reading an assigned topic, reviewing for an exam, taking down lecture note and other possible learning tasks.

Generally, the respondents have inadequate learning skills/strategies particularly in elaboration, integration, metacognition, organization, recall, study reading and test-taking strategy which greatly influence how they learn biology.

The textbook is the instructional aid commonly used by the teacher; the textbook dominates what is taught in the classroom. However, the students lack the basic skill/strategies for understanding the biology textbook. The unavailability of some materials and limited number of science equipment prevents the students from performing certain experiments or exercises. The students claim that they are much affected by environmental factors – teaching strategy, physical setup of the classroom, activity in the class and teacher behavior.

Of the activities listed in the rating scale, the respondents most enjoy hands-on activities (*i.e.,* laboratory work and field work) and group work. The students generally prefer activities where they actively participate and those that are collaborative, enjoyable, exciting, goal-oriented, challenging and relevant to real life. Those least enjoyed by students are “class discussion” (described by students as teacher-dominated talk), lectures, tests and expensive model making. The most disliked are long lectures and copying notes form the blackboard.

Based on students’ assessment of class activities, they identified instructional changes that they claim will encourage them to study harder and participate actively in the class and reflect what they think are aspects of the biology class that need improvement. These changes are enumerated in detail in chapter 5 under the *Summary of Findings.*

Thus, learning environmental factors such as teaching strategy, learning resources, physical setup of the classroom, teachers’ behavior, and activities in the class and personal learning strategies of students greatly influence their learning of biology in the classroom.