

THESIS/ DISSERTATION ABSTRACT

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Title: ASSESSMENT OF STUDENT MISCONCEPTIONS ON BASIC CONCEPTS OF MEASUREMENT AND MATTER: SUGGESTED ACTIVITIES FOR CONCEPTUAL CHANGE

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Statement of the Problem:

*Main Problem:*

This study aimed to assess common assess common misconceptions or alternative conceptions on some chemistry concepts, e.g. measurement and matter, prevalent among high school chemistry students of the Ateneo de Zamboanga University.

*Sub-Problem:*

Upon identifying misconceptions, lessons and non-traditional laboratory activities were designed to address them.

Procedure:

The misconceptions or alternative conceptions were assessed through written test, oral interviews, and laboratory observations. These misconceptions or alternative conceptions identified were then classified according to types and how it could be addressed. Then, lesson and non-traditional laboratory activities were designed to address these misconceptions or alternative conceptions. The activities were tried and tested by the researcher, and further validated by college freshmen from a non-science General Chemistry class.

Treatment of Data:

The activities were validated through a survey following the Likert response scale. This scale consisted of statements about the activities. The respondents indicated their degree of agreement or disagreement to the statements. The respondents' response to each item was scored, and the sum of score represents the respondents' attitude toward the activities.

Findings:

Two types of misconceptions were identified, namely, vernacular misconceptions and conceptual misunderstandings. Most of the students' misconceptions are attributed to language and to previous learnings in school.

Conclusions:

The researcher tested the activities that were designed to address the misconceptions; the results showed that these activities are simple enough for students, and that the data gathered using the simpler set-ups were comparable to data from standard chemical equipment. These were further validated by college freshmen from a non-science General Chemistry class.

The results showed that the activities earned high Likert values, which meant that students had a positive attitude towards the activities. They considered the procedures of the activity to be clearly written, the steps easy to follow, the experimental designs simple, activities interesting, and helpful in illustrating the concepts.

Recommendations:

Due to time constraint, the activities were not tested with junior secondary students. It is recommended that these activities be tested with junior secondary students. It is also recommended that a similar study be conducted to address misconceptions in lower year levels, or even with elementary students.

It is important that teachers be included in a similar study because some students see them as "authority", and "source of knowledge". Most importantly, because they facilitate the transition toward scientific conceptions, hence, they themselves must have the correct scientific conceptions.