

General Education Assessment

Sciences

FALL 2009

ANALYSIS and REFLECTION

**Division of Natural Sciences and
Mathematics**

Chaminade University

Program Assessment Timeline

Task	Timeframe	Method	Participants
Decide on nature of GE assessment instrument	Spring 09	Discussion in Divisional and Discipline Meetings	Dean, Faculty
Construct draft instruments	Summer 09	Collate questions	Dean, Faculty
Review draft instruments	Fall 09	Tasking at August 09 Faculty Retreat	Faculty
Appoint GE Assessment Coordinator	Fall 09		Dean
Decide schedule of test administration	Summer 09		Dean and GE Assessment Coordinator
Deliver tests	Fall 09	Provision of test materials to participating faculty, grading and review by GE assessment Coordinator	GE Assessment coordinator and faculty
Assemble data for report to faculty	Winter 2009	Document for distribution at January 10 Faculty Retreat	Dean and GE Assessment Coordinator
Review and Reflect	Winter 2009	Tasking at January 10 Faculty Retreat	GE Assessment coordinator and faculty

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1. Science Skills Assessment Instrument Pretest Results, Fall Day 2009

1.1. Background.

Pretests were given to four 2009 Fall Day Classes; BI-101-01-1, BI-115-01-1, BI-131-01-1, and PHY-140-01-1. All assessments were given during the first week of the semester, August 24-28. A total of 52 students took the assessment instrument. Please note that question #16 was omitted because of a typographic error.

1.2. Results.

Section	CLO Evaluated
I	#1: An understanding of and the ability to recognize and use the Scientific Method;
II	#1: An understanding of and the ability to recognize and use the Scientific Method;

- 1) Four sections were tested
- 2) Paired T-test (Partial Credit not possible)

The Scientific Method (CLO #1), Questions 1-8:

N = 38: T-Value = -0.95: P-Value = 0.347

	<u>Mean</u>	<u>StDev</u>
Pre (1-8)	4.34211	1.07241
Post (1-8)	4.07895	1.58339
Difference	-0.263158	1.703481

Critical Thinking Skills and Data Analysis (CLO #1), Questions 9-22:

N = 38: T-Value = 1.30: P-Value = 0.203

	<u>Mean</u>	<u>StDev</u>
Pre (9-22)	4.89474	2.15343

Post (9-22)	5.36842	2.29478
Difference	0.473684	2.250968

1.3. Student performance analyzed per the GE Science Assessment Rubric.

Questions/CLO	Percentage correct	Benchmark achieved per rubric.
The Scientific Method (CLO #1), Questions 1-8	<p>Pre: 54%</p> <p>Post: 51%</p> <p>(No significant difference)</p>	<p>Pre: Proficient</p> <p>Post: Proficient</p>
Critical Thinking Skills and Data Analysis (CLO #1), Questions 9-22:	<p>Pre: 37%</p> <p>Post: 41%</p> <p>(No significant difference)</p>	<p>Pre: Incomplete</p> <p>Post: Incomplete</p>

1.4. Faculty Reflection for Fall 2009 General Education Science Assessment.

Faculty reflections were gathered after the January 2010 retreat meeting and are summarized below.

1) What could have improved the overall Fall 2009 assessment process? (please add to the list below)

- Instructors and students should better understand the topics the instrument is assessing.
- Increased standardization of the administration of the instrument.
- Try to increase student motivation to take the test seriously.
- Topics covered by the instrument could be pointed-out to students during lecture.
- In general, the process needs to be more transparent to faculty members and students.
- Maybe, just capitalize / bold print the Directions on the second part so students realize that they don't have to complete all the questions;
- Students appeared to take the pre-test seriously in fall 2009. However, based on the post-test spring 2009, they did not take it seriously. You might consider giving it 3 weeks before the end of the semester;
- The scientific method portion needs some work as it does not include a question on controls in experimentation and there are no specific questions on hypothesis or null hypothesis;
- Analytical skills using basic math iare lacking in our students.
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2) What worked well and does not need improvement? (please add to the item below)

The instrument itself. (agreed)

3) What other comments do you wish to make?

None

1.5. Action points.

- In Spring 2010 the assessment instrument will be re-administered, unchanged, in order to gather a larger data set;
- In order to address the issue of students taking the test seriously, the Assessment Coordinator will do a more in-depth briefing with each class. In future semesters we may consider making the assessment instrument a for-credit test, but initially we would like to attempt to improve student 'buy-in' voluntarily;
- In Fall 201 we will begin to address the re-visioning of the CLO for the General Education Science requirement, allowing future assessment of more learning outcomes to be incorporated into the instrument.