

CHC Outcomes Newsletter

The Second Unknown

Lisa Shimeld, Microbiology

Lisa

*Spotlight on Excellence
in Assessment at CHC*

Shimeld, CHC Professor of Microbiology, has developed a simple and effective means of assessing whether students are learning what is most important in her classes.

Called "The Second Unknown", students must apply the skills they have learned and honed over the semester to solve a problem.

As Lisa explains, "Each student is given an unknown bacterium. Using aseptic laboratory techniques, and their understanding of contemporary microbiologic information, they are to determine the identity of their unknown organism, while collecting data and constructing a flow-chart documenting their process."

This single project addresses several of the SLOs for biology, including:

- *Basic laboratory skills, and writing well-organized and informative lab reports;*
- *Formulate questions and apply the scientific method to answer those questions;*
- *Use aseptic techniques, and good laboratory practices and habits;*
- *Retrieve, evaluate and use contemporary microbiologic information*
- *Collect information, create a flow chart and successfully navigate through that flow chart.*

Lisa reports that the process has yielded effective insights into her students' learning process.

"The majority of microbiology students do an excellent job and show that they can apply critical thinking to problem solving."

Many of her students are preparing for careers in the health services professions, and these skills are critical for upper level coursework and preparation for the field.

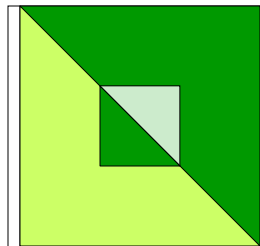
Gathering and organizing the Student Learning outcome (SLO) data was simplified through the use of eLumen. "Even this was very painless as Gary Williams set everything up for me. All I had to do was enter data, reflect upon the results and determine whether or not my students were meeting the outcomes for the course."

Professor Shimeld initially developed an assessment strategy centered around a term paper assignment that is required of Introductory Microbiology (MICRO 102) students. However she discontinued this approach.

"After examining the data I had collected for several semesters, I found there was no significant information to be gained by continuing this assessment."

She finds that the flow charts produced by students provide more meaningful evidence of what they have learned through the Second Unknown. "I will continue with that assessment and work to develop another one for use in future semesters."

We look forward to hearing more about her next steps in the near future.



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But, is it working? Research Design in Assessment

Assessment as a field of study continues to mature and with that progress has come a deeper appreciation of and understanding about that the design used to gather the evidence of student learning. The confidence in the conclusions that can be drawn from the data depends upon the rigor of the design and the integrity of the assessment instrument.

Assessment is, at its core, about making inferences. That is, faculty collect explicit student work and from a review of the product make inferences about whether and to what degree a concept has been mastered internally by the student.

All assessment instruments are imperfect measures of constructs and the degree to which the instrument misses the mark constitutes "error." The larger the error component in the observed results, the more open to chance the outcomes are and the less credible the conclusions that can be drawn from the results. The gulf between the construct and the instrument and the effect of the intervention on the outcome are at the core of educational measurement analysis.

Experimentation in educational settings is remarkably difficult to accomplish for practical and ethical reasons. Consequently, the designs we use to make causal inferences are in natural settings, leading to less than convincing results. How do we tease out the impact educators have on the student learning? Phrased differently, how do we know what we are doing is working?

Let's take a look at the most common designs use in assessment, their strengths as well as their limits. It is often in the limitations of the results, where the most fruitful dialogue about learning takes place.

Post-Only Design

A great deal of educational assessment is a one shot case study - the one-time study of a single group of students after some intervention or lesson. This design is characterized by the classic research diagram: X O where X represents the intervention and O the observation of student work.

In research terms, this method of assessment design is fraught with ambiguity as to what really "caused" the outcome. It may have been the quality of the instruction, the diligence of the student, the presence of a mentor, the intervention of tutorial or any combination of events that affect a student's academic performance. The other, alternative reasons which could possible explain the outcomes are virtually infinite. Meaningful comparisons between groups are impossible because there is no control group.

This volume of noise in the data is a result of the threats to internal validity about the inferences that can be made about the effect the intervention on the learning.

So, if post-only design is unclear as to reasons for success, when could this design be meaningfully be used? In practice, post-only design is most effective when the assessment is criterion-based and the achievement of the outcome is an exit skill that the driving goal of the assessment.

If the purpose of the assessment is to demonstrate a certain proficiency level (e.g., writing) as evidence of college level work (which students may in fact already possess), then post-only design makes sense. Students meet the expected level of performance are identified and students who do not are given instruction and support to help improve performance.

However, any meaningful comparisons between groups or more detailed study of the why behind the outcome can only come through more sophisticated research designs.

Day of Dialogue April 3

On Flex Day, April 3rd, The Outcomes Committee, in cooperation with Professional Development Committee, the Instruction Office and Academic Senate, will present a "Day of Dialogue" to facilitate progress on closing the assessment loop for courses, programs and Institutional Outcomes (ILOs). All breakout sessions will be interactive and faculty-driven. Departments are encouraged to attend. The program will include:

- Interactive break-out sessions for faculty and departments.
- Examples of excellent assessment approaches delivered by your CHC Colleagues
- Using technologies that simplify assessment and make the process less time-consuming
- An Interactive and fun lunch activity.

And did we mention that **LUNCH WILL BE PROVIDED!**



Calendar April 3rd!

Where do Course SLOs Live?

Must SLOs be consistent across all sections/classes of a course?

With SLOs defined in part as the foundation of a course, the ACCJC requirement is that each course has a single set of SLOs that is common to all sections/classes of the course, no matter who teaches the section or class (Standards II.A.6 and II.A.6.c.).

This assures that all students will know what to expect as the potential outcomes of completing a course successfully. One might refer to that set of SLOs as “core” SLOs for the course.

This also means each faculty member teaching the course must ensure the core SLOs are adequately addressed in the pedagogy, pacing, educational materials, learning environment and assessment strategies of the individual classroom.

A question often asked is: Can individual faculty choose different strategies and course materials to help students achieve the same core SLOs? The answer is, “That depends on whether the strategies are appropriate to help students learn the intended SLOs.”

Accreditation standards ask institutions to analyze learning and to use the results to guide improvements in learning by changing pedagogy, curriculum, etc. (Standards II.A.1.c, II.A.2, II.A.2.a, b, e and f). So, diverse strategies among faculty members will be a means of identifying diverse approaches to high quality education and, over time, of identifying which strategies should be abandoned in favor of more effective approaches.

For more Accrediting Commission for Community and Junior Colleges (ACCJC) information, visit accjc.org.

CHC Student Learning Outcomes Update

Gary J. Williams, Instructional Assessment Specialist

Faculty and departments at Crafton Hills College continue to make steady progress toward achieving the goal of proficiency in campus-wide assessment. As the table shows below, Student Learning Outcomes have been developed for almost 90% of courses offered in the last two years at CHC, with just over one third of those courses (34%) completing the entire assessment cycle. Nearly 100% of Full-time Faculty and dozens of part-time faculty have actively participated in assessing their courses, employing a variety of methods and technologies to document student learning. 100% of all Student Services departments have also completed assessments of their core services and document improvements. Keep up the good work!

DIVISION TOTALS - COURSE LEVEL

COURSE LEVEL	#	SLOs	ASSESSMENT	ASSESSED	DISCUSSION/
			METHOD	COURSE	IMPROVEMENT
DIV 3	54	51	44	39	36
DIV 2	199	161	115	60	47
DIV 1	201	194	125	90	71
TOTAL	454	406	284	189	154
PERCENTAGE		89%	63%	42%	34%

Committee Members 2011-12

Robert O'Toole
 Rebeccah Warren-Marlatt, Co-Chair
 Cheryl Marshall
 Raju Hegde
 Catherine Hendrickson
 Robert Brown
 Marina Kozanova
 Richard Hughes
 Snezana Petrovic
 Lisa Shimeld
 Dan Sullivan
 Jonathan Townsend
 Gary Williams, Faculty Co-Chair
 Keith Wurtz

The CHC Professional Development Committee presents

FLEX DAY

Wednesday, January 11 and Thursday, January 12



Schedule of Events:

January 11 (Wednesday)

- | | |
|------------|---|
| 10-11:30am | Finding and Writing Grants |
| 10-11:30am | Blackboard Training |
| 12-1:30pm | Faculty & FERPA (Family Educational Rights & Privacy Act) |
| 12-1:30pm | How to D.E.A.L. (Design Effective & Active Lessons) |
| 2-3:30pm | Updates on CHC Projects |

January 12 (Thursday)

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|----------|--|
| 8am-2pm | Open time for department meetings and SLO work |
| 2:30-4pm | Web Advisor/Blackboard Training |

Part-Time Faculty Meeting (Full-time faculty are also encouraged to attend)

- | | |
|--------------|---|
| 5-5:30pm | Refreshments/Contract Signing |
| 5:30-6:15pm | Introductions, Welcomes, & Updates |
| 6:30-7:45pm | Dept/Division Professional Development Opportunities |
| 8:00-10:00pm | Social Time (Royal Falconer Pub, 106 Orange St. Redlands) |

All workshops will take place in the TLC (LRC-110) and the Multipurpose Room (LRC-226). More information to follow.

LEARN while you EARN your flex credits!
If you have questions, please contact Robert Brown at ext 3566.