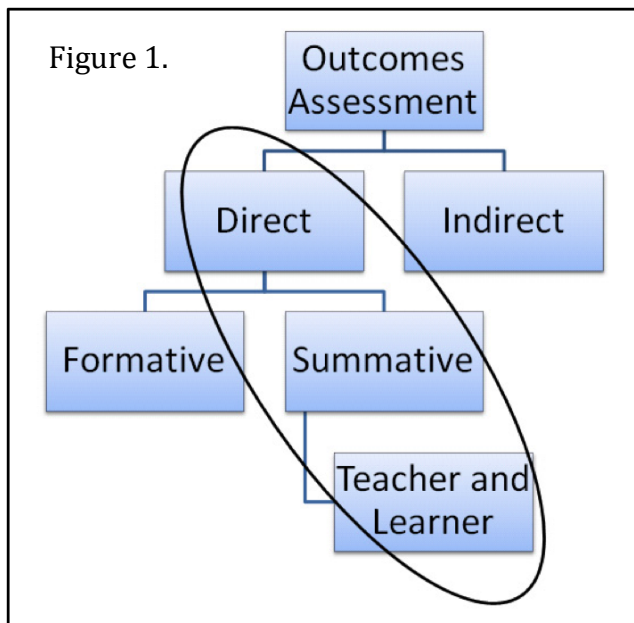


CALS Outcomes Assessment: Problem Solving/Critical Thinking Abilities

Overview

The committee was asked to develop a process whereby CALS departments are able to determine if CALS problem solving/critical thinking outcomes are being met.

Proposed is a process that can be used to assemble and review the assessment of problem solving/critical thinking outcomes. It is modeled after that approved to assess CALS communication abilities. Figure 1 illustrates the relationship of direct and indirect outcomes assessment as well as the relationship of formative and summative assessment approaches that is used as the model for CALS learning outcome assessment.



Recommendations:

1. For indirect assessment of each outcome, CALS (at the college level) should initiate a first-employer survey for feedback on the abilities of CALS graduates. The surveys would include several outcomes and would be distributed every four or five years. The CALS Outcomes Assessment Committee would develop or facilitate the development of the survey and would be responsible for analyzing and summarizing the results.
2. Direct assessment of each outcome should be done at the departmental/program level. The department or program will be required to provide CALS by 1 June 2013 with:
 - a summative assessment of how students in their department/program have attained the problem solving/critical thinking outcomes

- a plan for continuous improvement
3. The CALS Outcomes Assessment Committee will analyze and summarize the data from the Departments to produce a report that meets quality assurance criteria of the Higher Learning Commission. The information will also be used by the CALS Curriculum Committee to develop a plan for continuous improvement.

The process for the direct assessment

- a). First, the department should determine their departmental outcomes relative to CALS problem solving/critical thinking outcomes. The CALS problem solving/critical thinking outcomes are as follows:

Graduates of the CALS should be able to:

- apply a holistic approach to solving complex issue laden problems
- apply a rational and objective process to:
 - distinguish verifiable facts from value claims
 - determine the accuracy of statements
 - identify assumptions and detect bias
 - distinguish relevant from irrelevant information
 - establish priorities
- summarize, analyze, and interpret simple research data and policy issues
- critically evaluate their own arguments and those of others

- b). Develop a curriculum map (Fig. 2) for the problem solving/critical thinking outcomes, in order to determine when and how these outcomes are addressed. For each assignment/experience the level of emphasis on problem solving/critical thinking should be determined.

Fig. 2. Curriculum map applied to the problem solving/critical thinking outcomes.

Level of Emphasis:

1=low

2=medium

3=high, major focus

Course	Outcomes	Emphasis Level	Assignment or Experience	Description of assignment.	Measures used to assess outcome

c). Process for summative assessment.

- Select artifacts (assignments/experiences) that represent a “high” level of emphasis. Because this is a summative assessment, most likely the student will have submitted the artifact as a senior or upper level student in an upper level/discipline-intensive course.
- Assess the problem solving/critical thinking skills of the students using rubrics. Examples of rubrics are attached. The Department is not required to use these specific rubrics, but must submit a copy of the rubrics that were used.
- The Department will be required to provide CALS by 1 June, 2013 with a report indicating how students in their major have attained the problem solving/critical thinking outcomes. The report should include:
 - Information about the artifact(s) that was/were assessed: the class, semester, number of artifacts, student year (i.e. senior, junior, etc.)
 - A copy of the assignment that produced the artifacts
 - A copy of the rubric(s) that was/were used
 - Results: percent of students who met the problem solving/critical thinking outcomes for each performance level and category
 - Action plan for continuous improvement. We would encourage the Department to begin to assess problem solving/critical thinking formatively, in order to better understand the development of their students

d) Process for formative assessment.

- Select an assignment/experience that represents a “high” level of problem solving emphasis for classes at each level (i.e. 100, 200, 300, 400). Assess the problem solving/critical thinking skills of the students using attached or similar rubrics.