

Digging Deeper into Assessment Data

Is the level of data specific enough that faculty know where areas of student strengths and weaknesses lie?

- A. Are overall student test scores the deepest level examined? If so, then it is quite possible that areas in which students are not performing as well as expected are masked by the overall test score. Performing an item analysis or sub-score analysis may uncover specific knowledge or skills with which students may need assistance.

Faculty Actions

- 1) *Conduct an item analysis of test questions to look for consistent patterns of weakness in aggregated student data.*
- 2) *Create content groupings of test questions or content sub-scores to evaluate student performance in specific areas of the curriculum.*

Do the results correspond to the program-level student learning outcomes?

- A. Do assessment methods provide results that can be directly related to a student learning outcome? Are there specific results for each student learning outcome? While one student work product (test, research paper, presentation) may provide data for more than one student learning outcome, the student work should be scored in a manner that will provide separate evaluations of each student learning outcome to which it is being associated.

Faculty Actions

- 1) Ensure that scores/results associated with each student learning outcome are specific to that particular student learning outcome. Associating one overall test/project score with multiple disparate student learning outcomes does not provide enough information to know if students are meeting each of the student learning outcomes.

Assessment of Critical Thinking. This list is intended to help faculty interpret critical thinking assessment data. The items are listed in the order in which they are best considered.

1. Does the pattern of data make sense?

- A. Are more students competent on “comprehension” items than on items that assess higher-order thinking skills (application, analysis, integration)? Comprehension is a lower-level thinking task because students must comprehend (understand) concepts before they are able to analyze, apply, or integrate concepts. Therefore, we expect students to perform better on comprehension than higher-order thinking skills, and the pattern of results can be a good indicator of the assessment instrument’s validity, i.e., does it measure what it is supposed to measure?

Faculty Actions

- 1) *Determine whether the pattern of results is consistent with common sense about critical thinking. If not, re-examine assessment items to ensure that they are valid indicators of each criterion. Items intended to measure application, analysis, and integration may in fact be measuring simple comprehension instead.* Alternatively, faculty may be providing too much advance practice with specific items intended to measure higher-order thinking skills (see 2A(2) below.) *Rose Perrine can help faculty review and categorize assessment items.*

2. Are there too many high or low scores?

A. Are there too many high scores?

Faculty Actions

- 1) *Determine whether assessment instrument is appropriately challenging for the graduating senior. Are the assessment items the most important concepts that faculty want students to remember from the program of study? Discuss with faculty that the purpose of assessment is to discover strengths and weaknesses in student learning, and having a weak assessment instrument defeats this purpose.*
- 2) *Determine whether faculty are providing too much help with the specific assessment questions, e.g., homework or class practice with specific assessment questions. Students should practice application, analysis, and integration skills with items that are similar to, but not exactly the same as, assessment items. The assessment should be a fair test of whether students can think critically about unique questions, rather than regurgitate memorized material. Discuss with faculty that the purpose of assessment is to discover strengths and weaknesses in student learning, and providing too much guidance on specific assessment items defeats this purpose.*

B. Are there too many low scores?

Faculty Actions

- (1) *Determine whether assessment instrument is too challenging for the graduating senior. Develop alternative items that are more appropriate.*
- (2) *Discuss new/alternative methods of helping students understand concepts. If instrument is appropriately challenging but many students score low, this is a good opportunity for faculty to discuss and potentially modify program curriculum, assignments and activities to help students think more critically about material.*

3. Are students performing significantly better in some sections than in others? (Data from sections should be aggregated before preparing the programmatic report; however, the Department Chair/Assessment Coordinator should look at data by section in order to analyze the data for program use.)

Faculty Actions

- (1) *See 2A(2) above. Are some faculty providing inappropriate practice with specific assessment items? Discuss with faculty that the purpose of assessment is to discover strengths and weaknesses in student learning, and providing too much guidance on specific assessment items defeats this purpose.*
- (2) *See 2B(2) above. Are faculty whose students perform better using different assignments/activities? This scenario provides a good opportunity for professional development within the department. Encourage faculty to share and discuss their specific classroom techniques.*
- (3) *Note. As online courses become more popular it's possible that students in online sections will perform significantly better or worse than students in other sections. We encourage departments to explore this issue. Encourage faculty to discuss assignments and activities that seem to work best in various types of classes.*

4. Are assessment scores significantly different than previous assessment scores?

Faculty Actions

(1) Fluctuations in scores on assessment items (like any exam) are expected due to sampling issues. Students differ from class to class, and instructors may differ, as well. Assessment instruments are typically not sensitive enough to override those differences. Therefore, minor fluctuations should not be interpreted as “better” or “worse” performance. However, major fluctuations, especially if the trend is in a consistent direction over time (3 or more assessments), could indicate either a much better or much worse approach in teaching the material. Discuss with faculty the changes that they perceive have been occurring over time.

5. What if none of the above applies? The pattern of assessment scores is reasonable, the percentage of high/low scores is as expected, and there has been little change in scores over time.

Faculty Actions

(1) Congratulations, you have managed the first critical task of using assessment data, which is developing a valid assessment. The next step is to find ways to further improve student learning:

- *Modify assessment items as needed to reflect changes in knowledge/emphasis in content area;*
- *Modify assessment items to reflect changes in departmental/program goals;*
- *Develop more real-world, problem-based assessment items to provide students with authentic experiences in which to test their skills;*
- *Experiment with different types of classroom activities/assignments and test their impact on student learning;*
- *Collaborate with colleagues to provide distinctly different learning experiences for students and compare results of assessment from these different approaches.*