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Closing the Loop
Or, Getting the Goody Out Of Your SLOs
Contact Information

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Shorthand for collecting and analyzing data to determine whether changes made or actions taken as a result of previous data have improved student learning.
Closing the loop is how you know whether changes you have made worked – that is, improved student learning.

Most crucial part of the process.

Without closing the loop, faculty aren’t getting the goody out of their assessment.
Students in CPT 179 Microcomputer Word Processing are required to complete a mail merge assignment to show they have met the success criteria for the course. In Fall 2015, 76% of students met this success criteria.

After studying the student achievement results for two semesters, the faculty made several adjustments to the mail merge assignment. In the onground class, the class schedule was adjusted to allow additional class time to devote to the topic. The faculty also had students begin the project in class so their progress could be monitored. In the online sections, faculty added supplemental material to help simplify the process and contacted those students who did not meet their submission deadlines.

As a result, in Spring 2016, 100% of students met the success criteria.
Steps to Closing the Loop

1. Based on the data you have already collected and your analysis, **decide** on a change or an action that you think will improve student learning.
2. **Deploy** the change or action in a future semester.
3. **Collect** data in the semester you deploy the change or action.
4. **Compare** the data from this recent semester to that collected before the change was deployed.
The action or change faculty decide on must be tied to the data.

- For example, ask: how will the change address a weakness in student performance?

Changes that arise from factors outside of the assessment process aren’t in themselves tied to data.

- Change in textbook because current edition is no longer available.

But they can be.
Data:
◦ Students in PSC 201 American Government scored lowest on being able to explain the divided form of government and separation of powers. Faculty determined that the text does not have sufficient material on these concepts.

Action Tied to Data:
◦ When the department chooses a new text for next Fall (the current one will no longer be available), faculty will look for a text that contains more effective explanations and visual presentations of these topics.
Decide On and Deploy an Action

- Unlimited number of changes or actions!
  - Change in the process of collecting data
  - Change in curriculum or instruction
Especially early in the SLO journey, faculty may need to change the process of collecting data:

- What they assess
- When they assess it
- What assignment they use
- How they collect data
Faculty may realize that they are not assessing the knowledge or skills that:

- Are most important to the course
  - OR
- Are most important for the faculty to have information about
The faculty teaching ENG 032 Developmental English assessed only students’ introduction and thesis statements until Spring 2015 at which time they realized they were not getting the full benefit of the assessment process by looking at such a small segment of the skills taught in the class. For Spring 2016, faculty revised the assessment rubric to evaluate an entire student essay.
While this rubric gave a fuller body of information, it also revealed that students were weakest in writing the third body paragraph. When faculty discussed these results, they realized that some instructors were not stressing a third body paragraph, just a body that supports the thesis with examples and details (which was the real product students needed to write). The rubric was revised to reflect the skill that was actually being taught in the class and implemented in Fall 2017.
Changes to When Students Are Assessed

- No right or wrong time to assess students.

- Timing will determine what answers you will get.
  - Assessing students directly after a topic is taught tells whether students “got it”
  - Assessing students at the end of the term on topics taught throughout the semester tells whether students retained it.
In PTH 244 Rehabilitation, the performance measure is a final exam. In 2015, the topic of pediatric conditions was not tested prior to the final exam and consequently represented a greater portion of the test questions than the material that had been tested separately. After reviewing the Final Exam scores in 2015 (when only 53.3% of students met the success criteria), the faculty decided that the information from the Pediatric Conditions unit should be assessed as a topic test; then the final exam could be altered so that the proportion of final exam questions would be equivalent to those chapters already covered. The increase of scores (to 81.3%) indicates that the material is perhaps better understood if singled out for a chapter test and then represented on the final exam.
Due Dates May Influence Data

You may need to change when students are assessed so that they are likely to do their best work.

- Assignment due on the Monday after the Carolina–Clemson game
Changes to **Assignment** Used to Assess

- Does the assignment truly measure student success on the competency you want the information about?

- For Example:
  - Are you trying to assess knowledge or skill?
  - What type of assignment would you use
    - If you are trying to assess a student’s ability to give a presentation?
    - If you are trying to assess a student’s knowledge of what makes a good presentation?
Changes to *Data Collection*

If faculty are not getting the information they need to analyze students’ strengths and weaknesses in meeting a competency, then they may need to change the data they collect or the way they collect it.
AET 111 Architectural Computer Graphics I uses a final project as a performance assessment to show that students can use AutoCAD computer graphics software to produce two–dimensional drawing sets. Faculty initially collected the grade on the assignment as their SLO data, but found that they could not analyze results in any depth. Faculty went from using the assignment grade to using a rubric to measure individual skills in Spring 2014. This change allowed faculty to gather more specific information about student strengths and weaknesses and to analyze the results.
Most changes should be tied to curriculum or instruction.

- Changing how topics are covered (lecture vs. group work)
- Increasing amount of time spent on topic
- Creating a study guide
- Adding a review or tutorial
- Adding required assignments
- Implementing a prerequisite
- Clarifying expectations for students
IST 200 CISCO LAN Concepts, the first course in the Cisco CCNA sequence, had always had a high attrition rate. In Spring 2015, Cisco released two versions of its CCNA curriculum, one (Discovery) with a more visual, hands–on approach), the other (Exploration) taking a more theoretical approach. MTC’s Cisco course sequence had been based on courses akin to the more difficult Exploration version. Faculty chose to use a combination of the two versions in the Cisco course sequence: the first 2 courses from Discovery and the last 3 courses from Exploration. Student performance on the final exam has trended upward, from 60% in Summer 2015 to 83% in Fall 2015, 76% in Spring 2016 and 89% in Summer 2016. This change to a curriculum that appeals to visual and kinesthetic learners has obviously increased student success.
EET 255 Advanced Microprocessors uses embedded questions on a final exam to assess 3 competencies. In Fall 2016, faculty noted the extremely low success rates on competencies 1 and 3 (20% each). To address these weaknesses in student performance, students were given review sessions to reinforce the material covered in the course and exercises to address apparent weaknesses as the semester progressed. In Spring 2017, 43% of students met competency 1 and 57% met competency 2.
The performance measure in BCT 209 Construction Project Management is a final exam. In Summer 2015, 88% of students met the benchmark of 75% or better on the exam. In analyzing these results, faculty determined that students were not reading their text, but relying on in-class instruction and practice. In Summer 2016, faculty gave students weekly assignments for each chapter that correlated with the course competencies. Students had to read the text to complete these assignments. In Summer 2016, 100% of students met the benchmark.
Example: Adding a Prerequisite

MTT 121 Machine Tool Theory I uses embedded exam questions to measure students’ understanding of basic machine tool concepts. In the past, students had trouble with math concepts. After the Fall 2015 semester, the math prerequisite was raised one level from MAT 032 to MAT 100. In Fall 2016, students’ success rate rose to 85% from the 75% who were successful in Fall 2015.
Example: Clarifying Expectations

As a result of data collected in previous semesters in HUS 102 Personal and Professional Development in the Helping Professions, faculty met prior to the summer semester to revise the rubric used to assess students’ paper and implemented the rubric in Summer 2015. The revision clarified for students exactly how they were being assessed in both content and delivery. As a result of these changes, the success rate in Summer 2015 reached, for the first time, 100%.
In changing curriculum or instruction, it may be necessary to provide faculty with the tools to make these changes.

- Group discussions of how to approach a topic
- Training in a technique or process that has changed
- Professional development opportunities
- Sharing best practices
This Does NOT:

- Imply that faculty aren’t good at their jobs!
- Blame faculty for students’ less than stellar results!
- Mean we’re using SLOs to evaluate faculty teaching.
On January 8, 2016, ENG 010 faculty attended Best Practices sessions focusing on annotation, revision, and use of research, areas that students struggle with in this course. Having faculty attend these sessions may have contributed to improved success in the following Spring 2016 performance measures: “Develop ideas” (+6%), “Revise” (+10%), “Select appropriate quotations” (+4%), “Subordinate quoted materials” (+8%), “Quote accurately” (+5%), and “Incorporate quotations grammatically into text” (+6%).
Think Big

- Think of your entire program.

- Consider difficult topics with low success rates that could be:
  - Introduced in an earlier class.
  - Reinforced in subsequent classes.
Unacceptable Actions

- Met standard; no action needed.
- Need more data.
- Will continue to deploy assessment.
- Results inconclusive.

Remember: the point of taking an action is to improve student learning. These “actions” do not help faculty make students more successful.
What If All Students Meet the Benchmark?

- Congratulations
- But don’t rest on your laurels
- Not every student got every thing
- Look closer
The accrediting agency for respiratory care degree programs requires programs to report credentialing test results of graduates by identifying weaknesses as well as giving pass rates. The agency expects programs, even if they have a 100% pass rate, to design ways to improve student performance in weak areas.
Actions When All Students Meet the Benchmark

- Raise the benchmark
- Pinpoint the weak areas and zero in on them
- Assess another skill or concept instead
- Introduce a difficult concept or skill from a subsequent course
Example: Pinpoint Weaknesses

In SUR 120, the performance instrument is the program Exit Exam and the Program Assessment Exam. While 100% of the students have passed the Exit Exam each semester, faculty did see evidence from their performance that students needed additional preparation on Anatomy and Physiology. The faculty met and decided to offer after hours tutoring and study groups. Opportunity for analysis of their weaker areas provided the students with time to remediate in these areas which may have contributed to 100% meeting the standard on the PAE.
What If the Sample Size is Small?

- Don’t get paralysis by analysis!
- Everyone *always* wants more data.
- If you are assessing all of your small number of students, you have a complete sample.
- Acknowledge the small sample size and the number of students involved in an increase or decrease in scores.
- Move forward.
What If the Results Aren’t Valid?

- SLOs are meant to be useful to faculty; they don’t have to meet scientific standards of reliability or validity.
- It could be that something is wrong in the way that the assessment is deployed and the data is being collected.
  - Half the faculty give the embedded questions at midterm and the other half on the final exam.
  - Faculty told students that the assignment was just for assessment purposes and it wouldn’t count for a grade.
Then faculty aren’t doing it right!

Faculty should be encouraged to work together to make SLOs a process that works for them, that helps them identify weaknesses in student performance and improve student learning.

So if the results aren’t useful, faculty should change their assessment to get results that will be useful.
Collecting Data and Reporting Results

- You haven’t closed the loop until you have:
  - Collected data on student learning after the change has been implemented
  - Compared results with the previous semester(s)
  - Reported the results with analysis
What if Student Learning Did Not Improve?

- That’s okay!

- Sometimes things outside the class influence student success:
  - College closing for inclement weather
  - National tragedies (9/11)
  - Widespread flu
  - 1000-year flood

- Learn from the negative results:
  - Why did it not make a difference?
  - What might faculty try instead?
Example: No Improvement

In BUS 240 Business Statistics, recommendations coming out of Spring 2014 and implemented for Summer 2015 included stressing recognition of the type of problem, the process for its solution, and following through on the underlying mathematics inherent in its solution. Additionally, the faculty devoted less class time to description of the statistical situation and theory and more to actual practice in problem solving, and spent less time on descriptive statistics. No improvement in results was noted from these actions.
Your Ideas?
Questions?