Steps 5, 6, & 7: Digging into the Data

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Goals for the Workshop

- A quick review of analysis basics

- A review of what is expected in Steps 5, 6, and 7 of the Program Assessment Report form

- A collaborative discussion of analysis and improvement scenarios

Goals of Analysis

- Make sense of the data collected, including interpreting data in light of the success standard

- Use the data to (1) address questions faculty are interested in, (2) give causal explanations about student and program strengths and weaknesses and (3) justify improvement plans

- Provide evidence of learning to both students and external stakeholders

Analysis and Improvement Basics

- Focus on both student learning and program successes and areas of needed improvement

- Analyze data in ways that can help address retention issues; meeting a success standard might not mean students are successful.

- Disaggregate data into subgroups of students, student histories, skill types, cognitive levels, content areas, etc., in order pull greater meaning out of the data

- Benchmark data against other institutions or national data, whenever possible

Scenario 1—Digging into the Data

Program A identifies questions on the final exam addressing certain key skills as the second of its projects. The success standard is 80% of the students would earn 70% or better. The actual results turn out to be 94% earned 78% or better.

What do you know, as an outsider, about the success of the students and program, based on this information?

Scenario—Digging into the Data

- What if the class started with 24 students, but only 14 students took the final exam?

- What if 8 of the students who dropped or were withdrawn were female?

- What if all the students who completed the final had reading placement scores that exempted them from developmental reading?

Scenario—Digging into the Data

- What does the additional data tell you about the success of the students and the program?

- What additional information would you want to understand the student successes and those who didn't make it to the final?

- What curricular improvements would you suggest in this case?

- What assessment standards or tools evaluations or tools improvements might you recommend?

Analysis and Improvement Basics

Recognize the data doesn't answer everything:

- Data collected this year will reflect a limited group in a limited place and time, not a trend

- Data without a benchmark or baseline is preliminary and offers limited basis for judgment

- Data from one class or one course does not tell you everything about a program

- Data gives *evidence,* not a definitive claim about learning; trends strengthen claims

Analysis and Improvement Basics

- On the Institutional Effectiveness website, improve.vinu.edu: "The Improvement Process, Step 4: Data Analysis and Improvement"

- 5 Basic Types of Data Summary:

  A. Tallies

  B. Percentages

  C. Aggregates

  D. Averages (Mean, Median, Mode)

  E. Qualitative Summaries (Quick Reads, Grouped Listings, Thematic Analysis)

Scenario 2—Digging into the Data

Program B gives students a skills task in the second semester; the skills are essential for success in the field. The success standard is set at 100% of the students will earn a 75% or better. The results for 3 consecutive years show the students met the standard.

What do you know, as an outsider, about the success of the students and program, based on this information?

Scenario—Digging into the Data

- What if, in order to meet the success standard, students repeated the task until they earned the 75% or better score?

- What if 20% of the students needed 3 or more attempts to pass?

- What if students had to take a national certification exam and the program's students averaged a 71% on this skill, while the national average was a 74%?

Scenario—Digging into the Data

- What does the additional data tell you about the success of the students and the program?

- What additional information would you want in order to understand the instructional methods or student results?

- What curricular improvements would you suggest in this case?

- What assessment standards or tools evaluations or improvements might you recommend?

Analysis and Improvement Basics

Patterns of Evidence—Considering Trends:

A. Consistency—same person or group studied over time

B. Consensus—different students or groups studied over time

C. Distinctiveness—individual or cohort perspectives or results across different situations or categories

Scenario 3—Digging into the Data

A department offering a UCC critical thinking course wants to evaluate students' critical analysis skills found in their research papers. The department establishes a 3-year project assessing the papers using the UCC Critical Thinking rubric, focusing on how well students consider and evaluate other points of view. The goal was to have 70% of the students achieve an "Average" or higher on the "other points of view" dimension. Over the 3-year period, the students averaged a 71%.

Scenario 3—Digging into the Data

- What if the results were based on only the sections taught by full-time faculty, even though adjuncts teach 35% of the sections?

- What if the results included adjunct faculty results, but the full-time faculty results averaged one success level lower?

- What if the rubric changed after the 1st year?

- What if the results were based on self reports of individual faculty and no effort was made to achieve inter-rater reliability?

Scenario 3—Digging into the Data

- What practical solutions might you suggest to help the department achieve its goal of completing a 3-year study on consensus?

- How does the rubric change affect the results?

- Although the discrepancy between the students of full-time and adjunct faculty is unlikely, what might explain such differences and what must be done to reduce this unwanted distinctiveness across the sections?

Analysis and Improvement Basics

Three Fundamental Questions of Analysis:

1. Does the data represent an acceptable level of achievement/activity/accomplishment given our mission, outcomes, values?

2. Does the data represent an identifiable trend in the level of achievement or activity or accomplishment?

3. Are the differences in the subpopulations acceptable?

Linda Hatfield, HLC Workshop

Scenario 4—Digging into the Data

Graduates of Program C are very employable. Large numbers of students apply to the program and are accepted each year, although only about 45% of accepted applicants make it through a foundational, gateway course. A study is done showing that 78% of students who complete the gateway course complete the program and rate high in employer surveys.

Scenario 4—Digging into the Data

- Is the program successful?

- What should a program do if a study revealed that 80% of students who begin in two or more developmental courses are likely to earn a "D" or lower in the gateway course?

- How do you collect this data?

- What if a program survey found that 80% of the students failing the gateway course studied two hours or fewer per week?

Minimum Expectations for Step 5

- Quantitative representation of student successes and failures for all projects, including whether students met the success standard set for projects

- For projects in the second year, some trend discussion—how do students in second year compare/contrast with students in first?

- Analysis that "triangulates" the data in both projects, offers causal explanation for results, and explains the significance of students' success with or failure to meet the standard

Quality Standards for Step 5

- The analysis uses the evidence/data from multiple projects to complement each set and strengthen the conclusions

- The analysis is deep enough, for instance going into subpopulations, to reveal the subtle possibilities of meaning without limiting its focus to minor points.

- The analysis of the data is logical and does not leap to unsupported conclusions.

Quality Standards for Step 5

Collaboration:

- Multi-member department clearly collaborate on assessments, and on discussions about improvements and implementation plans

- Single-member departments find ways to collaborate with faculty peers in other disciplines or field experts

- Programs collaborate with advisory committee members, employers, or field experts

Minimum Expectations for 6 & 7

- The improvement plans for both curriculum and assessment tools follow from the analysis presented in Section 5

- Projects in the 2nd year consider the impact of the previous year's improvement plans

- The improvement plans describe the collaboration of the program, both in the development of the plans and the plans to implement the improvements in a consistent way.

Quality Standards for 6 & 7

- The learning and assessment improvement plans clearly follow from and are supported by the data and current research on pedagogy.

- The learning improvement plans identify some new, even innovative, ways to instruct students and develop their learning and skills

- The improvement plans consider methods to develop or strengthen higher cognitive levels

- The implementation plans are a model for coordination among department members and leadership is identified

Scenario 5—Digging into the Data

Program D has a complementary set of projects, a set of 3 application questions on a final exam and a reflection at the end of the test on those questions. The faculty in the program have seen problems with students' ability to apply their knowledge. The faculty are hoping that 70% of the students will achieve at least a 70% average on these questions. Only about 58% earn 70% or better average, and the reflection reveals the students find the questions hard, but offer no clear reason.

Scenario 5—Digging into the Data

- What if the students, generally speaking, do well on one of the questions, but fairly consistently have difficulty with the other two?

- What might a study of the unit exam covering this material reveal? What questions should be asked about the unit instruction and exam?

- What if the material was presented in Chapter 10, which was covered in week 7; all 21 chapters will be covered by the end of the semester?

Scenario 5—Digging into the Data

- The additional info. raises what questions about the students? About the instruction?

- What additional information would you want to help explain the student problems?

- What curricular improvements would you suggest in this case?

- What assessment standards or tools evaluations or tools improvements might you recommend?

Giving the Presenter Data

- What is the one most important thing that you learned from this workshop?

- What would you like more information on, whether something from this workshop or something not covered today?

- What might make this workshop better?

- Which of the two following workshop topics would you be interested in? (A) Rubric building and use, (B) Test question analysis