Data Interpretation Toolkit

A portable guide to summarizing, interpreting, and using assessment data to inform program improvements

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Preview the program's learning outcomes and assessment methods

Find out what kinds of data the program has/is interested in

Preparation

Review common ways to summarize quantitative and qualitative data

Data Interpretation Definition

The process of assigning meaning (within the context of the program) to the assessment information that has been collected
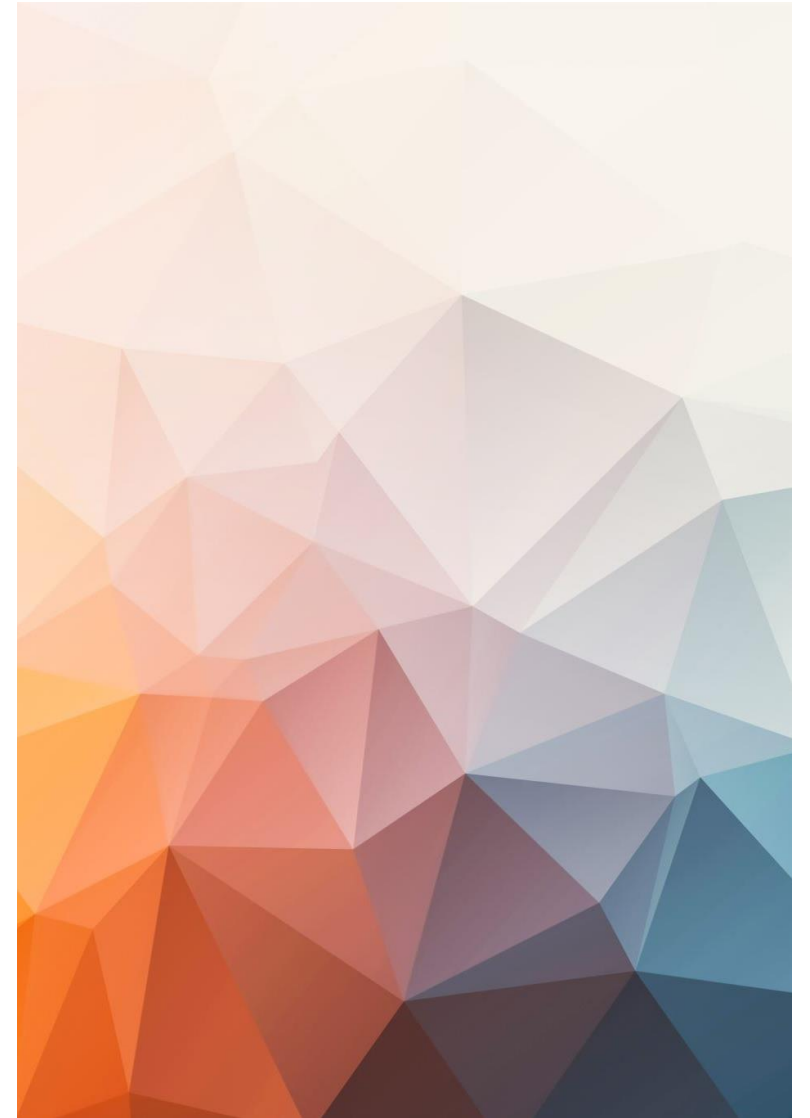
Data Interpretation Activities

Summarize findings and relevant contextual factors

Draw conclusions, watching for bias

Identify implications and recommendations

Summarize Findings

- Common quantitative data summaries:
  - Average/mean, minimum/maximum, frequency distribution, standard deviation, percentage of scores that meet or exceed a target score
- Common qualitative data summaries:
  - Dominant themes, supporting examples, key perspectives
- Overall/aggregated and disaggregated, as appropriate

Summarize Relevant Contextual Factors

- Common relevant contextual factors:
  - New assignment or rubric being used
  - Use of optional vs. required assignment
  - Ambiguous instructions to students
  - Changes to relevant course policies
  - Instructors new to process
  - Multiple raters with different levels of experience, different expectations
  - Changes to pedagogy from one semester to another
  - Only a subset of planned data was collected
  - Unusual composition of student cohort

Draw Conclusions

- Was the target met?
  - By everyone or only by most/some/few?
  - What commonalities or differences are there among those who met/didn't meet it?
  - How do these results compare to relevant results from other assessments (past or concurrent)?
- Did contextual factors influence the results in important ways?
  - Are these normal program factors, or unique to this time period? Are they likely to occur in the future?
  - Were the data representative of the programs' student population?
- Did the assessment instrument/process provide useful information?

- What changes, if any, are warranted based on the conclusions you've drawn?
- Common responses:
  - Monitor (target met, satisfied with program performance); re-assess in 2 years
  - Modify course materials or pedagogy
  - Revise curriculum
  - Increase access to support services
  - Advise students on course sequences, effective study strategies, etc.
  - Revise assessment instrument or process

Identify Implications

Good Examples from WSU

- **Gen Ed video tutorial**: [Reflecting on your Gen Ed assessment report](#)

- **Engineering Technology example**:
  - 80% of students met target, therefore LO was not satisfied.
  - One reason is the limitations in the mathematical skills of some students; for example, some students found it challenging to perform basic differentiation or integrations required for solving problems. Due to this deficiency in their background, some students had difficulty in applying the knowledge learned from the theories in solving mathematical problems.
  - Additionally, some students struggled in breaking down the problems using schematic diagrams and finding all known and unknown variables. In order to address this issue, in-class problem solving sessions were conducted in a modular approach, such as outlining the given data and using schematic diagram to find the unknowns and listing the required equations. Although such an approach improved the class performance over the course of time, a few students till fell short of the necessary problem-solving skills.
  - *Recommendations for future semesters:*
    - review the basics of required mathematical concepts
    - solve many problems in the classroom
    - assign more homework problems from each chapter
    - increase number of quizzes so that students can review their problem-solving skills before the exams.

Discussion Questions

1. How will you summarize your findings? What additional information might help your program understand those findings?

2. Who should be involved in drawing conclusions? i.e., Who are the people who understand the details of the results and the contextual factors that may have influenced them?

   - How can you ensure that conclusions are not used punitively, but are rather used to support student learning, curriculum design, and instructional delivery?

3. Who should be involved in discussing implications and possible actions based on the conclusions? What are logical, viable actions that would improve student learning?

   - Are there longer-term, aspirational actions to consider or promote as well?