Today:

- Limited time

- Cannot focus on “A to Z” assessment process

- Take advantage of resources:
  - Assessment Corner
  - Your institution
  - Google

- Disclaimer: Thank you to Dr. Trish Leggett for allowing us to use her previously developed information.
Assessment Corner

Can click on any drop-down item.
Assessment Resources

Websites:

- National Institute for Learning Outcomes Assessment (NILOA), Established in 2008, the mission of the National Institute for Learning Outcomes Assessment (NILOA) is to discover and disseminate ways that academic programs and institutions can productively use assessment data internally to inform and strengthen undergraduate education, and externally to communicate with policy makers, families and other stakeholders. NILOA publishes many informative reports and occasional papers that can all be found at [http://www.learningoutcomeassessment.org](http://www.learningoutcomeassessment.org).

- Internet Resources for Higher Education Outcomes Assessment, Repository of current assessment research, institutional assessment websites, journals, and many other resources housed Assessment Commons. [http://www.assessmentcommons.org/](http://www.assessmentcommons.org/)


Bibliographies


Articles, Books, & Other Resources


Course Objectives:

- Discuss data collection. (TL)
- Discuss methods of data analysis, including triangulation, benchmarking (internally & externally), and longitudinal trends. (TL)
- Determine data collection needed to monitor effectiveness of the implemented action plan. (TL)
- Discuss meta-assessment and meta-assessment rubric (MAR).
- Evaluate your assessment practices using the JRCERT MAR.
What is Assessment

- The systematic collection, review, and use of information to improve student learning and educational quality.
  
  (JRCERT, 5.1 – based on Palomba and Banta, Assessment Essentials, 1999)

- The process of providing credible evidence of resources, implementation actions, and outcomes undertaken for the purpose of improving the effectiveness of instruction, programs, and services in higher education.
  
  (Assessment Essentials, 2nd Ed., 2015)
Think about!

- Assessment of Learning versus Assessment for Learning
- Doing Assessment versus Using Assessment (results)
Data Collection  (Assessment Methods)

- Cannot implement an effective assessment plan w/o selecting or designing data collection approaches.

- Faculty must discuss and establish selection criteria

- Will the method (used) provide useful information?  
  
  Banta & Palomba (2015)

- Ask – how will these results be used prior to selecting measure.  
  
  Livingston, Phillips, & Kline (2014)

- Example: Clinical Competency

  - What method(s) do you use to assess CC?
Data Collection & Analysis Terminology

- Direct/Indirect measures:
- Objective/Performance measures:
- Quantitative/Qualitative methods:
- Data Sampling
Direct Measures

- Allen (2004) defines direct measures as those that “require students to demonstrate their achievement” (p. 6).

- Suskie (2009) provides an easy to understand description of direct evidence of student learning as the “tangible, visible, self-explanatory, and compelling evidence of exactly what students have and have not learned” (p. 20).

- Direct assessments can be further delineated as objective measurements or performance measurements.
Objective and Performance Measures

- OM: typically demonstrate a higher level of validity and reliability; however, are criticized for measuring lower-level learning (recall or recognition). Multiple-choice, True/False, Matching items. (Allen, 2004; Banta & Palomba, 2015)

- PM: typically offer higher-level data. Measures students ability or performance in demonstrating skills through the application of knowledge that has been synthesized. Essays, Demonstrations, Projects, Portfolios. (Allen, 2004; Banta & Palomba, 2015; Palomba, 2001)
Indirect Measures

- Often, those that identify the perception of learning by a self-report from a student or graduate.

- Suskie (2009) describes this type of evidence as a “proxy…that students are probably [emphasis added] learning” (p. 20).

- Course grades, questionnaires, surveys, reflective essays, focus groups, etc.

- This type of evidence is important when institutions, departments, or programs desire to ascertain the level of student-, graduate-, and/or employer-satisfaction.
Qualitative Data (Approaches)

- Qualitative research gives an in-depth understanding of the social, political and cultural context.

- Can be gathered from observation, focus groups, interviews, surveys, etc.

- Difficult to place numbers on the data, but provides ability to contextualize the current state of student learning, program, or institution.
Quantitative Data (Approaches)

- Quantitative research can describe magnitude and distribution of change.

- Generally involves numbers, such as mean aggregate scores, Likert scores, modal scores, etc.

- Generally don’t need statistician to assist in data analysis.
Data Sampling

- Population-All of your enrolled students.
- Sample size is defined as number of individual pieces of data collected, and can be a subset of the population of students.
- Sample size is important in determining the accuracy and reliability of a data findings.
- Since most programs have fairly small enrollments, many use the entire cohort and not use a sample.
- When can a sampling be useful in data collection?
  - The smaller your sample size, the more likely outliers -- unusual pieces of data -- are to skew your findings.
  - Don’t need to determine confidence level, but common sense should come into play.
Data Sampling-Frequency

- Frequency - How often the sampling occurs

- Can be stated in terms of time or number
  - Time - Can be every semester, every year, every cohort
  - Number - Every 3rd student, every other competency
Data Sampling Tips

- What questions are being asked of the data?
  - Make sure you have developed the tool to collect the data needed to answer the question.

- Determine the frequency of sampling.

- Determine the sample size.
Data Collection and Analysis

- So What?
- Who Cares?
- How Much?
- How Often?
Weigh Pig, Feed Pig, Weigh Pig

A farmer's advice on standardized testing:

"If you spend all of your time weighing the pig and not enough time feeding the pig, it will not grow."

@TravisDGaroute
Data Collection & Analysis Terminology

- Triangulation
- Longitudinal trend data
- Benchmarking
  - Internal
  - External
Triangulation

- Triangulation is a comparison of a number of different data sources and methods to confirm findings.

- Triangulation can bring strength to conclusions or identify areas for further work.

- Examples???
<table>
<thead>
<tr>
<th></th>
<th>Benchmark of 75% (Rubric)</th>
<th>Benchmark of 75% (Rubric)</th>
<th>Benchmark of Likert Score of 3.5 or Higher (5.0 scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student will demonstrate critical thinking during trauma procedures.</strong></td>
<td>Laboratory performance competency (Internal direct measure)</td>
<td>Trauma procedure competency (External direct measure)</td>
<td>Employer survey evaluation of graduate critical thinking (External indirect measure)</td>
</tr>
<tr>
<td><strong>Class of 2016</strong></td>
<td>82%</td>
<td>84%</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Class of 2015</strong></td>
<td>88%</td>
<td>92%</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Class of 2014</strong></td>
<td>85%</td>
<td>87%</td>
<td>2.9</td>
</tr>
</tbody>
</table>
Longitudinal Data

- Study in which repeated observations of the same variables are recorded for the same individuals or cohorts over a period of time.
- Also know as time series analysis or repeated measures design
- Addresses how the outcome variable changes over time
- Assists in predicting or explaining changes

Why is it important?
Benchmarking Data

- **How do you compare?**
- Benchmarking is a tool that provides a snapshot in time that enables organizations to compare their performance metrics against internal and/or external measures.
- These comparisons help organizations better understand their operations and identify areas that need attention – leading to improved performance.
- **What types of data do Medical Imaging and Therapy programs use in benchmarking?**
  - Internally
  - Competitively
  - Strategically/Aspirational
Benchmarking Data Internally

Patient Care Student Learning Outcome
Benchmark Score 2.5

<table>
<thead>
<tr>
<th>Year</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>2.7</td>
</tr>
<tr>
<td>2015</td>
<td>2.8</td>
</tr>
<tr>
<td>2014</td>
<td>2.7</td>
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<tr>
<td>2013</td>
<td>2.7</td>
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<tr>
<td>2012</td>
<td>2.8</td>
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<tr>
<td>2011</td>
<td>2.8</td>
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<tr>
<td>2010</td>
<td>2.7</td>
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<tr>
<td>2009</td>
<td>2.6</td>
</tr>
<tr>
<td>2008</td>
<td>2.7</td>
</tr>
</tbody>
</table>
Benchmarking Data Internally

Patient Care Student Learning Outcome
Benchmark Score 2.5
Benchmarking Data Externally and Competitively

ARRT Radiography Mean Scores 2013-2016

National | State | Program

2016: 83.3 | 83.6 | 88.2
2015: 83.7 | 83.5 | 86.3
2014: 83.8 | 84.4 | 85.9
2013: 84.1 | 83.6 | 84.3
Benchmarking Data Externally and Competitively

ARRT Radiography Mean Scores 2013-2016

2016: National 83.3, State 83.6, Program 88.2
2015: National 83.7, State 83.5, Program 86.3
2014: National 83.8, State 84.4, Program 85.9
2013: National 84.1, State 83.6, Program 84.3
Data Analysis
Questions to Address with Data Analysis

Data Collection
- Is there a negative trend?
- Is there a positive trend?
- Is there consistency with meeting the benchmark?
- Is there an unmet benchmark?

Action Plan
- How can the outcome be improved?
- Responsible individual and timeframe
- How will measure effectiveness?

Implementation Plan
- Include anecdotal information

Data Collection
- Has the outcome improved?
- If not, may need to implement another action plan and then monitor.
<table>
<thead>
<tr>
<th>Common Data Analysis Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Using meaningless metrics and tools</strong></td>
</tr>
<tr>
<td><strong>Data overload</strong></td>
</tr>
<tr>
<td><strong>Not cleaning up messy data</strong></td>
</tr>
<tr>
<td><strong>Ignoring outliers</strong></td>
</tr>
<tr>
<td><strong>Fixating on outliers</strong></td>
</tr>
<tr>
<td><strong>Not watching metrics in context</strong></td>
</tr>
<tr>
<td><strong>Not using trend data</strong></td>
</tr>
<tr>
<td><strong>Assessing new action plans</strong></td>
</tr>
</tbody>
</table>
Are you closing the loop?
Meta – Assessment  - What is it?

- A key effort to improve and sustain assessment practices across campuses.

- “The process of evaluating the quality of assessment practice” (Fulcher, Coleman, & Sundre, 2016, p. 1).

- Commonly termed: assessing assessment
Using MA for Improvement

- MA is one practice that can help programs and institutions understand and use their assessment results to bring about improvement in student learning.

- Enables institutions and departments to establish clear expectations of assessment practice then evaluate the quality of the academic programs’ assessment practices (Fulcher & Bashkov, 2012; Penn, 2012; Rodgers, Grays, Fulcher, & Jurich, 2013; Schoepp & Benson, 2016).

- Researchers agree that meta-assessment must be a formative process so that program leaders can increase their assessment knowledge and application without being discouraged by negative scores or a grade on a meta-assessment rubric (Bloom, 2010; Fulcher & Bashkov, 2012; Rodgers et al., 2013; Penn, 2012).
Meta-Assessment Rubric (MAR)

- Can be the link between simply completing annual assessment reports and actually documenting improved student learning. Why/How?

- The descriptive feedback can increase knowledge and application and improves assessment competence leading to enriched processes and critical discussions of use of results.

- Fulcher et al. (2012) study reviewed 51 MARs and found that majority evaluated: SLOs (94%), Methods (90%), Results (73%), and Use of Results (75%)
Meta-Assessment Rubric (MAR)

JRCERT self-assessment tool
Meant to be used as a self-assessment tool
Still in draft format
Will be available in Assessment Corner.
Using the JRCERT MAR

Meta-Assessment Rubric
Self Assessment Tool

This rubric is based on criteria found within Standard Five-Assessment, information via the JRCERT Assessment Corner, and best practices identified in assessment literature. Use the tool to self-assess the assessment practices at your program. If the criterion in the **Beginning** column does not accurately reflect the program’s assessment practice for the particular element, then a score of “zero (0)” is appropriate. Scores at the half-point interval can be scored as needed in the event a component falls between two levels of performance.

**Goals:**

<table>
<thead>
<tr>
<th>Assessment Element(s) and Question(s) To Ponder</th>
<th>Beginning 1</th>
<th>Emerging 2</th>
<th>Developing 3</th>
<th>Inspiring 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals: statements of student achievement; student-focused; reflect all learners; broad-general</td>
<td>Limited in development; unclear</td>
<td>Most goals are broad and define the</td>
<td>Well-developed, explicit expectations of</td>
<td>All goals are broad, well-defined discipline</td>
</tr>
</tbody>
</table>

References

References


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THANK YOU!!

for supporting excellence in education and quality patient care through programmatic accreditation.