Key Components of Ethics in Assessment/Research

**Beneficence:**
An obligation to “do no harm” to participants
Minimize possible risks and maximize benefits

**Justice:**
Ensuring equal distribution of the benefits or burdens of research

** Respect:**
Requirement to treat individuals as autonomous and protect those with diminished capacity.

**Main Applications:**
- Risk/benefit considerations
- Privacy and Confidentiality
- Selection of subjects
- Autonomy
- Informed Consent

Key Aspects of Informed Consent

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Define the purpose of your assessment. Why are you doing this study?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations of Participants</td>
<td>Give an overview of what you expect of participants if they participate, including duration of participation, procedures of the study, types of questions you will be asking, etc. What can people expect? What are they being asked to do?</td>
</tr>
<tr>
<td>Risks</td>
<td>Notify participants of any risks they may experience (e.g., uncomfortable feelings in talking about potentially negative experiences).</td>
</tr>
<tr>
<td>Benefits</td>
<td>Describe the benefits of participating including direct benefits (e.g., incentives like gift cards or chance to win an iPad) and indirect (e.g., your experiences will be used to improve programming for future students). Will results be made available to participants? If so, indicate how they can access this information.</td>
</tr>
<tr>
<td>Privacy During Data Collection</td>
<td>Describe any measures you will take to protect the privacy of participants during data collection.</td>
</tr>
</tbody>
</table>
Does the location of data collection help to ensure privacy? (e.g., for an online survey they can choose when to take it—thus ensuring their own level of privacy).

In focus groups, complete privacy cannot be ensured because of multiple participants. However, you can request that participants respect one another’s privacy.

Ask permission to record the session (e.g. interview, focus group), if applicable.

**Data Confidentiality**

Storage: Inform participants about how data will be stored, who will have access to the data once it has been collected, and how it will be reported.

Will data be saved or destroyed after the study? Who has access to electronic files? If there are paper files, how will they be stored?

Reporting: How will data be reported in ways that protect participants’ confidentiality (e.g., reporting results only in aggregate; ensuring that interview findings/quotes are reported in ways that do not include enough information to make someone identifiable)?

**Obligation/Voluntary Participation**

All studies need to include a statement that participation is voluntary. Let your participants know that they are not obligated to participate in the study and they can stop at any time (e.g., stop an interview or leave a focus group if they begin to feel uncomfortable).

Ensure that any incentives you offer do not create a sense of obligation or coercion (e.g., tying participation to grades). Ensure that your relationship to participants does not create a sense of obligation to participate (e.g., requiring direct reports to participate)

Incentives should be thought of as a “thank you” for the time spent participating, and hopefully do encourage greater participation. Think carefully about the balance between encouraging participation and incentives that might have an effect on data quality (e.g., those that could be coercive or are so high value that they might encourage inaccurate responses just to get entered in a drawing).

Many campuses have specific guidelines or policies on the limits of monetary incentives (due to tax implications or other potential concerns) so check into your local policies.

**Resources**

Refer participants to available resources (e.g., mental health resources), if applicable

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**Contact:**

Kristen McKinney, PhD, kmckinney@saonet.ucla.edu
Choosing a Method, Plenary Session

**Quantitative**
- Focus on numbers/numeric value
- Easier to report and analyze
- Can generalize to greater populations with larger samples
- Can be less of a time commitment and less expensive

**Qualitative**
- Focus on text/narrative from respondents
- More depth/robustness
- Ability to capture "elusive" evidence of student learning and development
- Specific example

Surveys, Longitudinal tracking, Usage numbers, Rubrics (if aggregating)

Interviews, Focus groups, Document analysis, Rubrics (descriptions or excerpts)

Direct Methods - Any process employed to gather data which requires subjects to display changes in their knowledge, behavior, or through processes.

Indirect Methods - Any process employed to gather data which asks subjects to reflect upon their knowledge, behaviors, or thought processes.

**Formative Assessment**
- Conducted during the program
- Purpose is to provide feedback
- Use to shape, modify, or improve program

**Summative Assessment**
- Conducted after the program
- Makes judgment on quality, worth, or compares to standard
- Can be incorporated into future plans

What do you want to know?
What method will help you find the answer?
Defining success criteria means starting with the end in mind. What do we want a program or service to achieve? How do we think it will do that? How will we know the program or service has done what we set out for it to do? The first step to good outcomes assessment is having a clearly defined outcome in mind.

**MISSION, GOALS, OBJECTIVES, OUTCOMES**

**Mission**: Your mission statement defines the purpose of your office in the broadest sense. Your programs and services are then how you achieve that mission.

**Goals**: The broad principles that comprise the mission statement. Generally define the central activities and/or principles of the office.

**Objectives**: Brief, clear statements that more specifically describe your goals. These are the statements that really connect your programs/services to your goals.

**Outcomes**: Specific measurable standards against which one can determine effectiveness. Outcomes make your program/service assessable.

**Program Outcomes vs. Learning Outcomes**:  
- Program Outcomes: what will be achieved or completed as a result of a program or service
- Learning Outcomes: what a student is expected to do, think, or know as a result of a program or service

**SMART PROGRAM OUTCOMES**

- **S**: Specific  
- **M**: Measureable  
- **A**: Achievable  
- **R**: Relevant  
- **T**: Time Sensitive

**Specific**: The outcome should be explicit about what will happen, where, and to whom.  
**Measurable**: The outcome should identify the threshold for success.  
**Achievable**: Take into account your resources: time, people, money, knowledge, etc.  
**Relevant**: The outcome must be logically related to your objectives, goals, and mission.  
**Time Specific**: The outcome should be bound to a specific time frame.
Many of the elements of the SMART acronym also apply to learning outcomes

ABCD’S OF LEARNING OUTCOMES

Audience: Who is expected to benefit from the learning outcome. Be as specific as possible

- Audience
- Behavior
- Condition
- Degree

Behavior: The skill/knowledge/ability that the audience is expected to learn. A good source of behavior “verbs” is Bloom’s revised Taxonomy of Cognitive Development

Condition: The program, service, and/or intervention that was intended to impart this knowledge.

Degree: The extent to which the learning will take place. Degree is very important! It makes the learning outcome measurable.

WRITING OUTCOMES

- Don’t make it harder than it has to be! – Pretend it is a game of Mad Libs and just plug in the appropriate information. Make sure the information is as specific as possible.
- Avoid double-barreled outcomes. If the learning/program outcome has an “AND” in it, chances are it should be split into two outcomes! This makes it easier to report your results. How would you report your progress if you achieved one part of the outcome but not the other?
- If at all possible, write your learning outcomes so they are measuring a behavior and not a thought or belief. It will be much easier to assess!
  - For example, it is much easier to assess “Students who attend the information session will be able to explain how to register for Greek recruitment” than it is to assess “Students who attend the information session will know how to register for Greek recruitment.” They measure essentially the same thing, but the behavior-based learning outcome is much easier to assess.
- Limit the number of outcomes per program/service. There is no magic number for which to aim, but consider what the central focus of the program or service is. Instead of having 5 outcomes for one event, try to identify the 1-2 key outcomes that are the most important. By focusing, you will be able to spend more time assessing them and will do a better job overall with your assessment!
Assessment Mapping

Assessment mapping provides a visual representation of the alignment process. A mapping document shows how your learning/administrative goals or outcomes link to your department programs and services. Maps can be created at a variety levels and at different points in the assessment planning process.

MAPPING USES

- Identify opportunities for learning
- Identify gaps
- Aligns strategies with outcomes
- Make learning expectations transparent
- Illustrate how the curriculum, co-curriculum, and extra-curriculum are integrated to promote holistic student learning and development
- Identify points of assessment

STEPS TO CREATING AN ASSESSMENT MAP

- Keep it simple- simple maps can be expanded as the process becomes more complex, you might begin with a specific program or a department
- Articulate your outcomes (left column)
- Describe how your program is delivering those outcomes (programs, project, workshop – list across the top)
- Diagram or map which activity is delivering or producing each intended outcomes (check the box)
- Determine if the activities, workshops, and/or projects are useful and appropriate in achieving the stated outcome (look for gaps)
HONING IN ON WHAT TO MEASURE

Process Outcomes:
What a program/activity will do, achieve, or accomplish for its own improvement
- measures process

Learning Outcomes:
What people will know, feel, or be able to do as a result of participation
- measures impact

Begin with the End in Mind: Identify Program/Service Goals

Name of Program/Service

What are the goals of your program/service?
What do you want individuals to take away?

Hone in On Specifics

When do you expect results?
Who do you expect to be affected?
What capacity/skill will be developed?
- Do/know/value/demonstrate?
- How is achievement demonstrated?
## Use Bloom’s Taxonomy to Identify Learning Levels

Developing learning outcomes can be simplified by choosing verbs that reflect the level and nature of learning you expect to result from the program or service you are assessing.

<table>
<thead>
<tr>
<th>Taxonomy Level</th>
<th>Definition</th>
<th>Process Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating</td>
<td>The individual can put elements together to form a functional whole, create a new product or point of view.</td>
<td>Assemble, generate, construct, design, develop, formulate, rearrange, rewrite, organize, devise.</td>
</tr>
<tr>
<td>Evaluating</td>
<td>The individual can make judgments and justify decisions.</td>
<td>Appraise, argue, defend, judge, select, support, evaluate, debate, measure, test, verify.</td>
</tr>
<tr>
<td>Analyzing</td>
<td>The individual can distinguish between parts, how they relate to each other, and to the overall structure and purpose.</td>
<td>Compare, contrast, criticize, differentiate, discriminate, question, classify, distinguish, experiment.</td>
</tr>
<tr>
<td>Applying</td>
<td>The individual can use information in a new way.</td>
<td>Demonstrate, dramatize, interpret, solve, use, illustrate, convert, discover, discuss, prepare.</td>
</tr>
<tr>
<td>Understanding</td>
<td>The individual can construct meaning from oral, written, and graphic messages.</td>
<td>Interpret, exemplify, classify, summarize, infer, compare, explain, paraphrase, discuss.</td>
</tr>
<tr>
<td>Remembering</td>
<td>The individual can recognize and recall relevant knowledge from long-term memory.</td>
<td>Define, duplicate, list, memorize, repeat, identify, produce.</td>
</tr>
</tbody>
</table>

## MADOLIBS
### Writing Outcomes

<table>
<thead>
<tr>
<th>Program/Service</th>
<th>Constituent Group</th>
<th>Bloom’s Taxonomy Verb</th>
<th>Content/Material/Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a result of...</td>
<td></td>
<td>will be able to...</td>
<td></td>
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</tbody>
</table>

Contact: Danielle Acheampong, dacheampong@saonet.ucla.edu

Designing an Assessment Plan, Department/Program Track Session
Steps in the Assessment Cycle and Process

1. Identify Goals
   What do you want to know? What is the purpose of the assessment?

2. Develop Outcomes
   Based on the goals and purpose, what specifically do you need to measure?

3. Design Methods
   Who currently has the data or information? Who is the target population? What is the best method to getting the information you need?

4. Collect & Analyze
   Implement data collection plan, determine how the data will be analyzed, clean and prepare the data

5. Communicate Findings
   Who are the stakeholders? In what method should the results be communicated? What content should be included?

6. Refine and Change
   What evidence will support improvement in practice? What recommendations can be identified, communicated, and used based on evidence? How can the assessment plan be refined for the future in the future?

Astin's I-E-O Model

"Outputs must always be evaluated in terms of inputs" (Astin, 1991)

Keys to successful communication and use of results:
1. Know the story you want to tell
   ▶ How do you contribute to the divisional and institutional goals?

2. Spend time interpreting the data
   ▶ Be mindful of data literacy: the ability to read, create, and communicate data as information

3. Know the audience is king
   ▶ What are the preferences and needs of your primary audience? Inform the manner and method of communication

4. Keep it focused
   ▶ Simplify and emphasize what is important

Characteristics of division-wide reporting:
▶ Big picture
▶ Concise/summarized
▶ Related to foundations (planning, budget, priorities, etc.)
▶ In stakeholders’ or leaderships’ language
▶ Meant to transform data into information

Organize by established framework to get faster buy-in:
▶ Work from assessment plans, strategic plans, any report templates
▶ Include language of foundational documents, objectives, outcomes, initiatives
▶ Ensures relating “up”
▶ Use available resources and examples

Beware of these barriers:
▶ Lack of clear expectations/vision from leadership
▶ Consideration of stakeholders and format
▶ Getting overwhelmed with too much data
▶ Consideration of time, knowledge/skills and resources
Campus Examples:
  ▶ Cal State Fullerton (http://www.fullerton.edu/sa/assessment/)
  ▶ Oregon State University (http://oregonstate.edu/studentaffairs/assessment)
  ▶ Marquette University (http://www.marquette.edu/assessment/)
  ▶ University of Georgia (http://studentaffairs.uga.edu/assess/index.htm)
  ▶ University at Albany (http://www.albany.edu/studentsuccess/assessment/)
  ▶ University of California Los Angeles (http://www.sairo.ucla.edu/)
  ▶ University of Memphis (http://saweb.memphis.edu/sala/)
  ▶ University of Wisconsin-Platteville (http://www.uwplatt.edu/student-affairs/reports)

Resources:
A good survey begins with good planning!

- What are the goal(s) and purpose of the survey?
  - What do you and stakeholders need to know? (outcomes)
- Who will you survey (population)
- Will you use a sample? (Sampling method and size)
- Who will analyze, communicate, and use the data?

**Steps to the survey design process:**

1. Outline topic(s) and draft items
2. Choose response sets
3. Write and edit items
4. Determine item sequence
5. Review and revise survey
6. Pilot test survey and revise

Should you sample or survey the whole population?

- Representativeness is key
- Choose type of sampling: random, stratified, convenience
- There are many influences on response rates:
  - Timing
  - Multiple contacts/reminders
  - Incentives/compensation
  - Anonymity/confidentiality
  - Survey length
  - Clear instructions
  - Order of questions
  - Question wording

Confidentiality vs. Anonymity

- **Confidential:**
  - Responses may be identifiable, but data kept contained to a specific set of reviewers
- **Anonymous:**
  - Responses cannot be attributed to an individual and participants not tracked
## Developing Rubrics, CYOA Sessions

**Using Rubrics, CYOA Sessions**

### Rubric Template

<table>
<thead>
<tr>
<th>Rubric Topic: (e.g. Intrapersonal Development)</th>
<th>1 Beginner</th>
<th>2 Developing</th>
<th>3 Accomplished</th>
<th>4 Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension 2</td>
<td></td>
<td></td>
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<tr>
<td>Dimension 3</td>
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<tr>
<td>Dimension 4</td>
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<tr>
<td>Dimension 5</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Dimension 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Developing Rubrics, CYOA Sessions

**Using Rubrics, CYOA Sessions**

### Metarubric

<table>
<thead>
<tr>
<th>Rubric part</th>
<th>Evaluation criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The dimensions</strong></td>
<td>Does each dimension cover important parts of the final student performance?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the dimension capture some key themes in your teaching?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are the dimensions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are the dimensions distinctly different from one another?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do the dimensions represent skills that the student knows something about already (e.g., organization, analysis)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The descriptions</strong></td>
<td>Do the descriptions match the dimensions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are the descriptions clear and different from each other?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If you used points, is there a clear basis for assigning points for each dimension?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If using a three-to-five level rubric, are the descriptions appropriately and equally weighted across the three-to-five levels?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The scale</strong></td>
<td>Do the descriptors under each level truly represent that level of performance?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are the scale labels encouraging and still quite informative without being negative and discouraging?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the rubric have a reasonable number of levels for the age of the student and the complexity of the assignment?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Metarubric

<table>
<thead>
<tr>
<th>Rubric part</th>
<th>Evaluation criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall rubric</td>
<td>Does the rubric clearly connect to the outcomes that it is designed to measure?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can the rubric be understood by external audiences?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does it reflect teachable skills?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the rubric reward or penalize students based on skills unrelated to the outcome being measured that you have not taught?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have all students had an equal opportunity to learn the content and skills necessary to be successful on the assignment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the rubric appropriate for the conditions under which the assignment was completed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the rubric include the assignment description or title?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the rubric address the student's performance as a developmental task?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the rubric inform the student about the evaluation procedures when their work is scored?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the rubric emphasize the appraisal of individual or group performance and indicate ways to improve?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairness and sensibility</td>
<td>Does it look like the rubric will be fair to all students and free of bias?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does it look like it will be useful to students as performance feedback?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the rubric practical given the kind of assignment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the rubric make sense to the reader?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Triangulation, CYOA Sessions

Using Multiple Data Sources to Improve Practice

Data triangulation is an approach that takes data from multiple sources so that one can more deeply investigate and explore a question or topic of interest. Data triangulation is also used to confirm or check the results of a study or assessment and allows one to produce a deeper understanding in an investigation. When considering data triangulation it is important to determine what information already exists, externally and/or internally, that might inform and/or answer key questions related to the project and then determine what data might need to be collected. Finally, it is important to determine what sources of information provide a new perspective, deeper insight, or a more holistic view of the information at hand.

Why should we use data triangulation?
- It develops stronger support for an issue, idea, or outcome.
- It provides corroborating evidence.
- It reduces duplications of efforts.
- It can confirm or contradict questions one might have related to the data.
- It allows for a more complex and richer analysis, particularly when it involves mixed methods (qualitative or quantitative).

What are some sources of new or pre-existing data that could be used for data triangulation?
- Student information system data (e.g., demographics, admissions profile, enrollment history, grades)
- National survey instruments (e.g., NSSE, CIRP, YFCY, CSEQ, MSL, NASPA Consortium, EBI)
- Institutional survey instruments (e.g., alumni, employer, students)
- External agencies/systems that track student outcomes and trends (e.g., College Board, Common Data Set, National Student Clearinghouse, IPEDs, accrediting bodies)
- Institutional systems that track student activities and involvement (e.g., CollegiateLink)
- Institutional early alert platforms (e.g., MAP-Works, Starfish)
- Tracking or usage numbers
- Social Media (e.g., Facebook, Twitter, Blogs, LinkedIn)
- Data derived from existing processes and documents (e.g., applications, program evaluations, journals, portfolios, incident reports, duty logs, performance evaluations, financial records)
Data Visualization, CYOA Sessions

Steps in the Design Process

1) Identify your story: What information will be the most meaningful and useful?
   a. Who is the intended audience?
   b. What were your project questions?
   c. Limit to 3-4 claims and evidence to support

2) Prepare the data
3) Select the best means to display your message
4) Create the basic visual
5) Refine the design to show the information simply, clearly, and accurately
   a. Make all the data (versus non-data) prominent and clear
   b. Remove all components that aren’t necessary (both data and non-data components)
   c. Reduce the visual salience of the remaining non-data components.
   d. Highlight the information that’s most important to your message

Simplify: Reduce Non-Data Ink

Remove gridlines and decimals. Use gridlines only to 1) ease look up of values, 2) ease comparison of values, 3) ease perception and comparison of patterns.

Use muted hues and light lines for all necessary “non-data ink” → grid lines, tick marks, axes, labels, borders, etc.

Where possible, directly label rather than using a legend

Avoid 3-D displays

Limit text to only the essentials; consider symbols or icons to reduce

Background should be white or a light solid color

Emphasize: Use Visual Attributes to Highlight Importance

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Brighter more vivid colors (intensity)</td>
</tr>
<tr>
<td></td>
<td>Different color from norm (hue)</td>
</tr>
<tr>
<td>Width/Size</td>
<td>Boldface text</td>
</tr>
<tr>
<td></td>
<td>Wider bars</td>
</tr>
<tr>
<td></td>
<td>Thicker graph lines</td>
</tr>
<tr>
<td></td>
<td>Bigger font/shape/object</td>
</tr>
<tr>
<td>Position/</td>
<td>Positioned at top, left or center of page/display</td>
</tr>
<tr>
<td>Orientation</td>
<td>Position/orientation that is out of alignment with the other elements</td>
</tr>
<tr>
<td>Shape</td>
<td>Different font or symbol shape from norm</td>
</tr>
<tr>
<td>Continuity/</td>
<td>Align objects close to each other to cue perception as a group</td>
</tr>
<tr>
<td>Connection</td>
<td>Connect components with a line to highlight connection</td>
</tr>
</tbody>
</table>

Selecting and Creating Charts & Graphs

General Good Practices

Encode quantities to correspond accurately to the visual scale
- Keep scale marks consistently spaced
- Include zero in quantitative scale (especially when using bars) or alert readers
when you don’t
  - Consider using full scale of possible responses to determine axis length (e.g. 100% for graphs displaying percentages or full range of possible response values for means)

Bars: Horizontal or Vertical

Can be used for nominal comparisons, time series, ranking, part-to-whole, deviation, or single distribution (histogram)
  - Use in time series when goal is to place emphasis more on individual values and their comparisons (versus overall trend/shape)
  - Avoid use for multiple distributions (too much overlap)
  - Use horizontal bars when category labels are wide

Examples of Gestalt Principles:

Proximity: objects that are closer together are perceived as a group.

Similarity: Objects that share similar attributes are perceived as a group.

Continuity: Objects that are aligned together or appear to be the continuation of one another are perceived as a group.

Line Graphs

Can be used for time series, part-to-whole (to show changes in parts over time), deviation, and distribution
  - Use in time series to feature trends and support comparisons; Only include individual points when needed for clarity; Use arrows or text to highlight key events/data
  - For comparing two or more distributions, preferable to bars; Avoid too many lines in one graph
  - Directly label lines rather than use a legend

Pie and Donut Charts

Display a limited number of proportions or part-to-whole relationship
  - Limit the number of slices
  - Use labels to highlight slices
  - Label percentage of each slice
  - Clockwise rotation for parts of the pie

For more:
http://www.fusioncharts.com/blog/2014/03/how-to-use-the-
• Consider using bar/stacked bar instead

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Qualitative Analysis, CYOA Sessions

Patton (1990) defines qualitative methods as the detailed descriptions of situations, events, people, interactions, and observed behaviors; use of direct quotations from people about the experiences, attitudes, beliefs, and thoughts; and analysis of excerpts or entire passages from documents, correspondence, records, and case histories.

<table>
<thead>
<tr>
<th>Area</th>
<th>Qualitative</th>
<th>Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of Research</td>
<td>Description/Understanding/Meaning</td>
<td>Quantity (how much, how many, to what degree)</td>
</tr>
<tr>
<td>Research Paradigm</td>
<td>Post positivist, Holistic, Process-focused</td>
<td>Positivist, Outcome-focused</td>
</tr>
<tr>
<td>Sample Selection</td>
<td>Small, non-representative, purposeful</td>
<td>Large, random, representative</td>
</tr>
<tr>
<td>Data</td>
<td>Field notes, people’s words</td>
<td>Measures, counts and numbers</td>
</tr>
<tr>
<td>Methods</td>
<td>Observations, documents, stories</td>
<td>Experiments, surveys</td>
</tr>
<tr>
<td>Instruments</td>
<td>Researcher, tape recorder, pictures</td>
<td>Surveys, analytics</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>On-going, inductive</td>
<td>Statistical</td>
</tr>
<tr>
<td>Findings</td>
<td>Comprehensive, holistic, descriptive</td>
<td>Precise, numerical, graphs</td>
</tr>
</tbody>
</table>

Assumptions of Qualitative Analysis
- Qualitative research has the natural setting as the source of data
- Researcher is the key instrument
- Qualitative research is descriptive
- Qualitative researchers are concerned with process rather than simply with outcomes or products
- Qualitative researchers tend to analyze their data inductively
- “Meaning” is of essential concern to the qualitative approach

Qualitative Methods
- Open-ended questions and written comments on a survey
- Testimonials
- Logs, journals, diaries, blogs, twitter feeds
- Interviews/Focus Groups
- Observations
- Case Studies
- Rubrics (depending on the rubric)

Data Analysis Process
Step 1: Get to know your data
Step 2: Focus on the analysis
Step 3: Categorize information
Step 4: Identify patterns and connections within and between categories
Step 5: Interpretation – Bringing it all together

**Two Ways to Categorize**
- **Preset Categories:** Start with a list of themes or categories in advance and then search for these within the data
- **Emergent Categories:** You read the text and themes or issues that reoccur

**Validity, Reliability, and Ethics**
*Trustworthiness* is concerned with how well an assessment project actually measures what it is designed to measure. A study is trustworthy if it is transferable, credible, confirmable, and dependable.

**Ethical Issues Checklist**
1. Explaining purpose of the inquiry and methods to be used
2. Promises and reciprocity
3. Risk assessment
4. Confidentiality
5. Informed consent
6. Data access and ownership
7. Interviewer mental health
8. Advice (who will be your counselor on ethical matters)
9. Data collection boundaries
   - Ethical versus legal conduct

**Strategies for Promoting Validity and Reliability**
1. Triangulation
2. Member checks
3. Adequate engagement in data collection
4. Researcher’s position or reflexivity
5. Peer review/examination
6. Audit trail
7. Rich, thick descriptions
8. Maximum variation

**Considerations for Reporting Qualitative Results**
- Determine the audience(s)
- Report the findings
  - Will the report need to be tailored to different audiences?
- Include the following components
  - Meaningful title
  - Executive summary
  - Statement of purpose
  - Design
  - Results
  - Summary of results
  - Recommendations
- Ensure the report is “reader friendly”
- Consider how sensitive or controversial information should be reported
Quantitative Analysis, CYOA Sessions

Quantitative Methods Overview

Quantitative methods are those which generate numerical data. Quantitative analysis involves using statistics to interpret numerical data. Statistics: techniques and procedures for analyzing, interpreting and displaying data. Statistic: a defined numerical quantity. Like all data collection and analysis, choice of quantitative method should be driven by a question.

Sources of Quantitative Data

- Existing Institutional Data (Registrar, Financial Aid, etc.)
- Surveys
- Document Analysis
- Numerical data from observations—counts and tallies
- Scoring of Rubrics and Portfolios

Descriptive Statistics

Measures that describe or summarize responses
Provide basic information about the sample
Reduces data from a large number of cases into information we can use to answer our questions

Central Tendency

**QUESTION: WHAT IS THE AVERAGE RESPONSE/SCORE?**

**Mean**

The numerical average
Sum all scores and divide by the number of scores

In Excel: Use AVERAGE function

= AVERAGE (B2:B56)

**Median**

The middle score when displayed in order from low to high

In Excel: Use MEDIAN function

= MEDIAN (C1:C35)

**Mode**

The most frequently occurring score

In Excel: Use MODE function

= MODE (A2:A9)

Variability/Dispersion

**QUESTION: HOW CONSISTENT OR SPREAD OUT WERE SCORES/RESPONSES?**

**Standard deviation**

Measure of the relationship of a set of scores to the mean (i.e., their variance from the mean)
Less subject to influence by “outliers” than range
Smaller standard deviation means scores group more closely around the mean; larger standard deviation

In Excel: Use STDEV function

= STDEV (A3:A66)
means the “spread” of the scores is greater.

Range
The span of scores from highest to lowest
Subtract lowest from highest score

In Excel:
For the minimum and maximum scores:
=MIN (A3:A98)
=MAX (A3:A98)
Then subtract one from the other to get range

Distribution
QUESTION: HOW MANY RESPONSES WERE THERE IN EACH CATEGORY?

Frequencies
The count or proportion (%) of cases/scores in a category
A frequency distribution is often represented as a histogram

In Excel: Use FREQUENCY function
=FREQUENCY (A3:A65, Z2:Z5)

**Note that this formula requires you to define an array of “bins” into which scores will be grouped

For an overview of descriptive statistics see: www.socialresearchmethods.net/kb/statdesc.php; for central tendency see: http://cnx.org/content/m11061/latest/; for variability see: http://cnx.org/content/m10947/latest/; for distribution see: http://cnx.org/content/m35072/latest/

Correlation and Inferential Statistics

Move beyond descriptive statistics to infer relationships between variables
Used to compare groups or variables and to generalize from the sample to the population
Often referred to as tests of “statistical significance”
Statistical significance—measure of confidence you can have that the differences in the groups were not due to chance.
  o Represented as a p-value (i.e., p<.05, p<.01), or a level of confidence (i.e. 95% or 99% confidence level). Calculation is influenced by sample size.

Correlation Statistics
QUESTION: ARE THINGS RELATED?

Correlation coefficient
Numerical representation of the strength and direction of the relationship between two variables
Represented as an “r” score (e.g., r=.36) ranging from 1.0 and -1.0
  • Score of 1.0 (or -1.0) is a perfect correlation; a score of zero indicates no relationship.
  • Positive correlation indicates that variables have a positive (direct) relationship—when one increases the other increases
  • Negative correlation indicates that variables have a negative (inverse) relationship—when one increases the other decreases

General “Rule” for interpreting correlations:
  • Below .3 is low correlation
  • Between .3-.7 is moderate correlation
  • Above .7 is strong correlation

In Excel: Use CORREL function
=CORREL (A3:A56, B3:B56)
REMEMBER: Correlation ≠ Causation
For overviews of correlation statistics see, www.socialresearchmethods.net/kb/statcorr.php and http://cnx.org/content/m33270/latest/

Inferential Statistics

QUESTION: DOES ONE GROUP DIFFER FROM THE OTHER? OR WHAT WOULD THE OVERALL POPULATION LOOK LIKE?

T-test
Used to examine the relationship between measures for two groups (e.g. mean scores)
Generates a “t” statistic that is compared to a t-table to determine significance (most statistical programs will do this automatically)

In Excel: Use TTEST function
= TTEST(A1:A23,B1:B23,2,1)

**Note that the second to last number in the formula refers to the number of “tails” (one, two) for the t-test, and the final number in the formula relates to the type of t-test you require (paired, equal variance, or unequal variance)

ANOVA (analysis of variance)
Similar to a t-test, but used when there are more than two groups to compare
Generates an “F” statistic that is compared to an F-table to determine significance (most statistical programs will do this automatically)
F-statistic indicates there is a significant comparison somewhere in the model—need post-hoc tests to determine which particular comparisons are significantly different.

Chi-square test
Measure of relationship of nominal variables, or a nominal to an ordinal variable
Generates a chi-square statistic that is compared to a chi-square table to determine significance (most statistical programs will do this automatically)

For an overview of inferential statistics see www.socialresearchmethods.net/kb/statinf.php
Data Hording, CYOA Sessions

The Data Hoarding Pledge:

I will NOT store hidden data in my office for years at a time. I will NOT keep binders and binders full of data only seen by me. I will feel proud of my data and assessment results. I will share these with others. I will NOT collect more and more data without first reporting on what I currently have. I will NOT fear my results. I will use what I learned at the ACPA Assessment Institute to help me avoid hoarding data.

Above all else, I will always ask myself the following questions:

What data do I need?
What data do I discard and stop collecting?
What data do I have which needs to be shared with constituents?

_________________________________________________
Signature

_________________________________________________
Date

When the urge for hoarding becomes strong, think of the following:

- What do I need to collect?
  - Remember the steps in the Assessment Process
  - Ask yourself, “What do I want to know?”
  - Think – Mission, Vision, Learning Outcomes

- How do I stop collecting so much?
  - Assessment Plans are your best friend!
  - Ask yourself the following questions: How am I going to use this data? Can I use this data? Did someone already collect this data?

- How do I “sell” my data?
  - Look for reporting examples
  - Who is your audience? What are they looking for?
  - Is my data clean and ready?

- Sometimes data goes out of style too
  - If it hasn’t sold in several years and no one is asking about it - perhaps it’s time to part ways or it’s time to change the selling approach
Finding a “Factoid” Story, Resources & Handouts

Sometimes in large sets of data you find the most interesting thing is the story of one particular piece of information. This could be an “outlier” (a data point not like the others), or it could be the data point that is most common. A detail about one particular piece of your data can fascinate and surprise people. It can also give them an easier way to start thinking about the whole set of data.

One factoid is that

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

This stands out from the rest of the data because

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

We want to tell this story because

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
Finding a “Interaction” Story

When two aspects of your data seem related, you can tell a story about how they interact. The fancy name for this is “correlation”. If one measure goes up, the other goes up too. If one goes down, the other goes down. If other cases, they might interact as opposites (when one goes up, the other goes down). You need to be careful not to guess about reasons for the interaction, but noticing the relationship itself can be a good story that connects things people otherwise don’t think about together.

The two pieces of data that interact are

[Blank lines]

and

[Blank lines]

The interaction is

[Blank lines]

We want to tell this story because

[Blank lines]
Comparing between sections of your data can be a good way to find a story to tell. Often one part of your data tells one story, but another part tells a totally different story. Or maybe there is a smaller portion of your data that serves as an example of an overall pattern.

The data to compare are

- 
- 
- 
- 
- 
- 
- 
- 

Comparing these things shows that

- 
- 
- 
- 
- 
- 
- 

We want to tell this story because

- 
- 
- 
- 
- 
- 

Finding a “Change” Story

People like to think about how things change over time. We experience and think about the world based on how we interact with it over time. Telling a story about change over time appeals to people’s interest in understanding what causes change, and they can often remember seeing the differences.

The data show a change in

The data changed from

and

We want to tell this story because
Finding a “Personal” Story

Some stories are interesting because they connect to your real life. Personalizing the story creates a connection to the real world meaning of the data and can be a powerful type of story for small audiences. Stories about someone’s personal experiences can make the data seem more real.

The data say

This connects real people because

...
We want to tell this story because