Analyzing and Using Results: For Non-Researchers

Stacey Street
Eastern Kentucky University

Agenda

- Review of Objectives
- Developing Data Collection Instruments
- The Data Collection Process
- Analyzing and Using Results Overview
  - Leadership Development Example
    - Practice
  - Customer Service Example
    - Practice
- Small Group Activity
- Summary of Framework of Good Assessment
- Questions

Review of Objectives

Assessment Review

- Street: "The purpose of assessment is to gather information to use for decision-making."
- Assessment Isn't Done Unless It's Documented and Used For Improvement.
- The *office/unit* itself is the focus of assessment; aggregated results are used to assess the office.

Review: Objectives

- Objectives are statements of end results.
- Objectives state the specific activities or specific results to be achieved with regard to a particular goal.

Review: Planning versus Educational Objectives

- *Educational Objectives*—the focus of the objective is on “student learning”
  - Defined in terms of: knowledge, skill, ability, value
  - AKA: Student Learning Objectives
- *Planning Objectives*—the focus is on administrative outcomes within the department; those things other than student learning that the department is currently working on.

Review: What are the key questions assessment of educational objectives should answer?

- What should college graduates know, be able to do, and value?
- Have the graduates of our institution acquired this learning?
- How can student learning be improved?

Review: What are the key questions assessment of <u>planning</u> objectives should answer?

- Are processes effective?
- Are the processes/services doing what they are supposed to be doing?
- How can processes be improved?

Part 1: Developing Data Collection Instruments

Assessment Measures

- Educational
  - How do you know students are “getting it”?
- Planning
  - How do you know things are working?

Assessment Measures
(Key Performance Indicators)

- The specific items of information that track an office’s or program’s successes on an objective.
  - KPIs provide us with data that allow us to evaluate progress towards an objective
  - Identify the characteristic or change that signals that an objective has been achieved.
  - Provide enough information to use for making improvements.

Questions to ask when choosing assessment measures.

- How will I know if this objective is being accomplished?
- What will provide me this information?
- Will the resulting data provide information that could lead to service improvement?
- What measures are currently available? Will something need to be developed?
- Is one measure sufficient or should I have more?

Assessment Measures

Make sure your assessment methods:

- answer questions that are important to you
- are manageable, given available resources (including time and money)
- result in useful feedback that highlights accomplishments and identifies areas requiring attention.

Academic Assessment Measures - Examples

Relevant Existing Information

- existing exams, assignments, or projects common to a group of student in the major
- writing samples completed for UWR
- senior assignments accomplished as a part of a capstone experience
- faculty teaching evaluations
- graduating senior surveys

Academic Assessment Measures: Examples

Relevant New Information

- student internships or performance
- capstone courses for graduating seniors (summary course for major)
- portfolio analysis (collection of student work)
- standardized tests (nationally-constructed or department-based)
- surveys, interviews, or focus groups of students at entrance and exit, alumni, faculty, employers or related to course content

Administrative and Educational Support Unit Assessment Measures

- Counts and ratios
- Surveys
- Focus Groups
- Informal one-on-one meetings with key clients
- Analysis of service use
- Outputs per budget $ calculations
- Observations

Examples of Measures of AES Unit Effectiveness

Admissions	Application Response Timing
Admissions	Telephone Response Timing
Business Affairs	Monitoring Grants & Contracts
Campus Security	Availability of Parking
Development	Mailing List Development
Physical Plant	Work Order Response
Physical Plant	Remodeling Processes
Printing Services	Bulk Mail Distribution
Printing Services	Reduction of Pre-Press Time
Registrar's Office	Clearing Transcript Holds

adapted from Nichols and Nichols, 2000

Developing Assessment Measures

- Questionnaires and Surveys
- Behavioral Checklists
- Activity Logs
- Session Checklists
- Scoring Rubrics

Developing Questionnaires and Surveys

Purpose

- To gather information about:
  - Knowledge – what people know; how well they understand something
  - Beliefs – attitudes – opinions
  - Behavior – what people do
  - Attributes – what people are; what people have

Developing Questionnaires and Surveys

Tips for developing

- Make a list of what you want to know. What do you really want to find out? What do you want to achieve with the questionnaire?
- Don’t ask a question unless it has a use. Eliminate the ‘nice to know’ items that aren’t really essential.
- As you write questions, view them through your respondents’ eyes.

Developing Behavioral Checklists

Purpose

- To measure:
  - The frequency of behaviors
  - Change in behaviors

Developing Behavioral Checklists

Tips for developing

- Identify the behaviors in which you are interested
- Balance between including all essential behaviors and creating a checklist that is simple and easy to use
- Refine the list; items should be specific, observable and action oriented

Example: Behavioral Checklists

Establishing and Using Email Account Checklist		
	Yes	No
successfully logs onto network		
accesses email account creation screen		
successfully creates email account		
sends trial email		
retrieves new email		
successfully logs out of email account		
successfully logs out of network		
Date:		
Observer:		

Developing Activity Logs

Purpose

- Understand
  - How staff spend their time
  - When staff perform their best
  - Efficiency of processes or procedures

Developing Activity Logs

Tips for developing

- Decide if you need info on a range of activities or on a particular set of special interest activities
- Use the logs over a period of time – a month
- Provide training to staff on terms and use of log
- Provide incentives for staff to garner commitment

Example: Activity Logs

Sample Activity Log					
Name					
		Hours			
Date	Type and Location of Activity	Activity	Prep	Travel	Total
Date Submitted			Total Hours		

Developing Session Checklists

Purpose

- Ensure and Track that
  - Particular information is provided
  - Specific activities are conducted

Developing Session Checklists

Tips for developing

- Decide which activities are critical to conduct
- Decide which sets of information are critical to convey
- Now decide which of the above need to be tracked
- Keep the checklist short and simple

Example: Session Checklists

Session Checklist	
Pamphlet on STDs given	
Information on birth control given	
Pamphlet on importance of taking full cycle of antibiotics given	
Medications explained	
Follow-up session scheduled	

Developing Scoring Rubrics

Purpose

- **Provides a predetermined and specific way to gauge performance**

Developing Scoring Rubrics

Tips for developing

- **Define the characteristics or traits of what you are assessing**
- **Examine samples of the work or product that exemplify the range of performance**
- **Describe at least three levels of performance – e.g. developing, competent, accomplished**
- **Choose work samples that are good examples of each level of quality as guidelines**

Example: Scoring Rubric

California State University, Fresno General Education Scoring Rubric for Critical Thinking		
Scoring Level	**Analysis & Evaluation**	**Presentation**
4 – Accomplished	Examines conclusions Uses reasonable judgment Discriminates rationally Synthesizes data	Argues succinctly Discusses issues thoroughly Shows intellectual honesty Justifies decisions
3 – Competent	Formulates conclusions Recognizes arguments Notices differences Evaluates data	Argues clearly Identifies issues Attributes sources naturally Suggests solutions
2- Developing	Identifies some conclusions Sees some arguments Identifies some differences Paraphrases data	Miscontructs arguments Generalizes issues Cites sources Presents few options
1- Beginning	Fails to draw conclusions Sees no arguments Overlooks differences Repeats data	Omits argument Misrepresents issues Excludes data Draws faulty conclusions

Set Your Criteria For Success

Criteria for success:

tell you at what point you will be "happy" with your results for this objective.

- Level of accomplishment for which you are aiming

- Nichols: "…identif(y) a reasonable level of service improvement to expect given the resources and personnel the unit has available."

Criteria for Success: Win or Lose?

- 2 ways to WIN:
  - Meet your criteria for success
  - You do not meet your criteria for success, but instead implement procedures for further improvements to meet your criteria
- 2 ways to LOSE:
  - Fail to carry through with assessment activities
  - Accomplish assessment activities, but fail to use assessment information as a basis for improvement.

Pilot Testing

- What is pilot testing?
  - A pilot test is a real-life simulation.

- What is the purpose of pilot testing?
  - Test whether works in actual user environment
  - Verify and identify problems with
    - Processes
    - Expected results
    - Design
    - Implementation techniques

What do you pilot test?

- Pilot test
  - The instrument
    - Is it easy to use?
    - Is it collecting what you thought it would?
    - Do items have double meanings?
    - Is there technical jargon?
  - The data collection process
    - Do staff understand how to use the measure?
    - Time – too much or too little?
    - Does the setting work?

What do you pilot test?

- The analysis and interpretation
  - Who will compile the data?
  - Do they understand how to do it?
  - Who will interpret the data?
  - Do they understand how to do it?
  - Do the numbers make sense?
  - Are you getting the information you thought you would get?

Part 2: The Data Collection Process

Review: Issues in Implementing Assessment Measures

- Who is considered a participant/client?
- Include all clients or a sample?
- How will clients be informed about data collection?

Review: Issues in Implementing Assessment Measures

- When will the data be collected?
- Who will collect the data?
- How will the assessment be accomplished?
- How will confidentiality be protected, if necessary?

Review: Issues in Implementing Assessment Measures

- Who will analyze the data?
- How will the data be analyzed?
- Who will use the data, how will they use the data and when will they use the data?

Part 3: Analyzing and Using Results

How Do I Analyze Assessment Data?

- How
  - Compare year to year and/or
  - Compare workshop to workshop and/or
  - Compare procedure to procedure

  - Examine number (N, frequency) and percentage (percentile, quartile) and/or
  - Examine mean (average) and/or
  - Examine median

What do all these terms mean?

- N: is just the total *number* of responses
- Frequency: a count of how often something occurred or an answer was given
- Percentage: the ratio of frequency to total number
  - 5 (frequency) out of 100 (N) equals 20%
- Mean: equals the average
- Median: the number at which half are below and half are above.

Data Terms in Action

	Objective 1	Objective 2	Objective 3	Total Score	Mean Score
Todd	42.5	39.7	42.0	124.2	41.4
Keene	48.5	52.5	59.1	160.1	53.4
Telford	53.1	48.7	51.0	152.8	50.9
Walters	39.5	32.5	33.6	105.6	35.2
Sullivan	51.1	48.2	44.3	143.6	47.9
Burnam	41.0	39.5	33.2	113.7	37.9
Mean	46.0	43.5	43.9	133.3	44.4
N = 6					
Frequency with Total Score below 145 = 4					
Percentage with Total Score below 145 = 66%					
Mean Total Score = 133.3					
Average score for Objective 1 = 46.0					
Median Total Score = 125					

Issues in Using Various Types of Data

- N:
  - Is the N large enough?
  - Is the group representative – characteristics, how sampled?
- Frequency:
  - By itself is not sufficient – pair it with the N and/or the %
- Percentage %
  - Best when paired with frequency
  - Use when want to know how many did or said something
- Mean
  - Use when want to know the "average" response
- Median
  - Use when "outliers" make the mean meaningless

When Do I Analyze Assessment Data?

- When
  - At the end of each semester
  - As it is collected
  - Once a year
  - Annual Institutional Effectiveness Progress Report (see Institutional Effectiveness Calendar)

Questions to ask when analyzing results of data:

- How do the results compare with what we expected to happen (criteria of success)? Did we get where we wanted to go?
  - Is there still room for improvement?
  - What could we do to make this better?
- What have we learned?
- What do we know about the needs of our stakeholders now? What should we do differently in the future?
- Will the objective and/or KPI stay the same or change based on this past year’s experience?
  - What should be this year’s/next year’s priorities, based on what we now know?

How Do I Use Results To Improve My Services?

- “Map” the results back to the activities for the services you offer:
  - Example: Improve efficiency with which purchase orders are processed
    - Identify activities/steps for processing a purchase order
  - Where is the breakdown?
    - Need to have enough information (data) to make a decision (use additional data if available)
  - Make changes to the “activity” based on results

How does assessment relate to what takes place in our offices?

- Each educational objective can be "mapped" back to the activity or workshop in which it was taught (either introduced or reinforced)
- Each planning objective can be "mapped" back to the activity or process in which it was accomplished
- Then when certain objectives are identified as needing improvement, we can work back to the activity, workshop or process to which it was mapped and strengthen that activity
- The following matrix shows a sample graphic relationship between educational objectives and activities

Sample Activity-Objective Linkage Matrix

Sample Activity-Objective Linkage Matrix						
	Activity 1	**Activity 2**	**Activity 3**	**Activity 4**	**Activity 5**	**Activity 6**
Objective 1	Intro		Reinf		Reinf	Reinf
Objective 2		Intro	Reinf	Reinf		Reinf
Objective 3			Intro	Reinf		Reinf
Objective 4				Intro		Reinf
Objective 5					Intro	Reinf

How Do I "Close The Loop"?

- Use the results for improvement
- Check if the improvements result in the intended change(s).

- Document!
- Document!
- Document!

Analyzing and Using Assessment Results Specific Examples

- Leadership Development
- Customer Satisfaction

Leadership Development Example

- **Leadership Program Objectives**:
  - **Objective 1**: Participants will demonstrate challenging the process.
  - **Objective 2**: Participants will demonstrate inspiring a shared vision.
  - **Objective 3**: Participants will demonstrate enabling others to act.
  - **Objective 4**: Participants will demonstrate modeling the way.
  - **Objective 5**: Participants will demonstrate and encouraging the heart.

Leadership Development Example

- KPI/Assessment Measure
  - The Leadership Practices Inventory by Kouzes and Pozner, 1990.
  - Multiple Raters will use the inventory to rate the leadership practices of each program participant.

Leadership Development Example

- Link the inventory questions to specific leadership development program objectives
  - Questions 3, 8, 13, 18, 23, & 28 assess Objective 1
  - Questions 2, 7, 12, 17, 22, & 27 assess Objective 2
  - Questions 4, 9, 14, 19, 24, & 29 assess Objective 3
  - Questions 1, 6, 11, 16, 21 & 26 assess Objective 4
  - Questions 5, 10, 15, 20, 25, & 30 assess Objective 5

Leadership Development Scoring Rubric

	Objective 1: Challenge the process	**Objective 2:** Inspire a shared vision	**Objective 3:** Enable others to act	**Objective 4:** Model the Way	**Objective 5:** Encourage the heart	Total Score	**Mean Score**
Todd	42.5	39.7	42.0	36.0	39.5	199.7	39.9
Keene	48.5	52.5	59.1	45.2	51.1	256.4	51.3
Telford	53.1	48.7	51.0	46.9	44.3	244.0	48.8
Walters	39.5	32.5	33.6	41.0	34.2	180.8	36.2
Sullivan	51.1	48.2	44.3	39.9	41.1	224.6	44.9
Burnam	41.0	39.5	33.2	36.8	32.1	182.6	36.5
Mean	46.0	43.5	43.9	41.0	40.4	214.7	42.9

*Rating scale of 1 to 10 used for each of six questions. Question scores for each objective were summed.

**Scores recorded for each individual are averages of scores from 3 raters.

Leadership Development Example

- Establish criteria for success for the program
  - The average score on the entire inventory will be no less than 210 points or 70%
  - On no individual objective area will the average score be less than 42 points or 70%

Leadership Development Example

	Objective 1: Challenge the process	**Objective 2:** Inspire a shared vision	**Objective 3:** Enable others to act	**Objective 4:** Model the Way	**Objective 5:** Encourage the heart	Total Score	**Mean Score**
Todd	42.5	39.7	42.0	36.0	39.5	199.7	39.9
Keene	48.5	52.5	59.1	45.2	51.1	256.4	51.3
Telford	53.1	48.7	51.0	46.9	44.3	244.0	48.8
Walters	39.5	32.5	33.6	41.0	34.2	180.8	36.2
Sullivan	51.1	48.2	44.3	39.9	41.1	224.6	44.9
Burnam	41.0	39.5	33.2	36.8	32.1	182.6	36.5
Mean	46.0	43.5	43.9	41.0	40.4	214.7	42.9

*Rating scale of 1 to 10 used for each of six questions. Question scores for each objective were summed.

**Scores recorded for each individual are averages of scores from 3 raters.

How Do I Use Results To Improve My Services?

- "Map" the results back to the activities for the services you offer
- Where is the breakdown?
- Make changes to the "activity" based on results

Leadership Development Example

Leadership Development Activity-Objective Linkage Matrix						
	Activity 1	**Activity 2**	**Activity 3**	**Activity 4**	**Activity 5**	**Activity 6**
Objective 1	Intro		Reinf		Reinf	Reinf
Objective 2		Intro	Reinf	Reinf		Reinf
Objective 3			Intro	Reinf		Reinf
Objective 4				Intro		Reinf
Objective 5					Intro	Reinf
Objective 1: Students will demonstrate challenging the process.						
Objective 2: Students will demonstrate inspiring a shared vision.						
Objective 3: Students will demonstrate enabling others to act.						
Objective 4: Students will demonstrate modeling the way.						
Objective 5: Students will demonstrate encouraging the heart.						

Leadership Development Example

- Program Improvement
  - Changes in activity content to emphasize modeling the way and encouraging the heart
  - Changes to activities 4, 5 and 6
  - Changes in activity sequence
  - Creation of new activity

PRACTICE

Educational Objective

- For your selected KPI, how and when will you collect and analyze the data?
- How could you use the results to identify possible areas for improvement?

Customer Satisfaction Example

- Customer Service Objective:
  - Increase customer satisfaction with services of Library.

Customer Satisfaction Example

- KPI: Customer Feedback Form
  - Areas covered on feedback form
    - Courtesy of staff
    - Promptness of reply
    - Knowledge of staff
    - Solution to issues

Customer Satisfaction Example

- Link the feedback form questions to specific customer satisfaction areas
  - Questions 1-3 assess courtesy
  - Questions 4-6 assess promptness
  - Questions 7-9 assess knowledge of staff
  - Questions 10-12 assess solutions to issues
- Rating Scale: 5=excellent, 4=good, 3=average, 2=fair, 1=poor

Customer Satisfaction Example

Customer Satisfaction Survey Ratings					
	Courtesy	Prompt	Knowledge	Solutions	Average Rating
Chapman	4	4	5	4	4.3
Bauer	5	4	5	5	4.8
Street	4	2	4	4	3.5
Miller	4	4	3	3	3.5
Ratiu	2	2	2	2	2.0
Koppes	3	3	3	3	3.0
Satterfield	5	5	5	5	5.0
Martin	2	2	2	2	2.0
Borowski	5	4	5	5	4.8
St. Pierre	4	3	3	3	3.3
McGregor	4	4	5	4	4.3
Average	3.8	3.4	3.8	3.6	3.7
Percentage with average satisfaction rating at or above 3.5 = 64%					

Customer Satisfaction Example

- Establish criteria for success
  - 80% of the customer feedback forms will indicate an average satisfaction rating of 3.5 out of 5.
  - 100% of the customer feedback forms will indicate at least an average satisfaction rating of 2 out of 5.
  - On no individual service area will the average rating be less than 3.5 out of 5.

Customer Satisfaction Example

Customer Satisfaction Survey Ratings					
	Courtesy	Prompt	Knowledge	Solutions	Average Rating
Keeley	4	4	5	4	4.3
Bauer	5	4	5	5	4.8
Street	4	2	4	4	3.5
Miller	4	4	3	3	3.5
Ratiu	2	2	2	2	2.0
Koppes	3	3	3	3	3.0
Satterfield	5	5	5	5	5.0
Middleton	2	2	2	2	2.0
Glasser	5	4	5	5	4.8
Conneely	4	3	3	3	3.3
Good	4	4	5	4	4.3
Average	3.8	3.4	3.8	3.6	3.7
Percentage with average satisfaction rating above 3.5 = 64%					

How Do I Use Results To Improve My Services?

- “Map” the results back to the activities for the services you offer
- Where is the breakdown?
- Make changes to the “activity” based on results

Customer Service Example

Customer Service Activity-Objective Linkage Matrix

	Phone/Email Contact	Face-to-Face Contact	Approval Process	Issue Solved	Time to solution	Others Involved or Contacted
Courtesy	X	X				
Promptness	X	X	X		X	X
Knowledge			X	X		X
Solutions			X	X	X	X

Customer Satisfaction Example

- Additional data analysis indicated
  - Examine individual questions for indications of even more specific areas for improvement
  - Examine processes within each activity area for possible improvement areas –
    - Promptness example:
      - Do all staff have their own computers?
      - How are telephone messages handled?
      - Do staff have authority to make decisions?
      - Is there an approval process that slows things down?

Customer Satisfaction Example

- Program Improvement
  - Re-evaluation of objective criteria
  - Staff customer service training
  - Review and revise processes for replying to customer contacts to increase promptness
  - Revise the survey to ensure it is accurately measuring satisfaction components

PRACTICE

Planning Objective

- For your selected KPI, how and when will you collect and analyze the data?
- How could you use the results to identify possible areas for improvement?

Small Group Activity

- Break into small groups of 4-7
- Each small group will generate 1 to 3 questions about material to pose to the large group
- Large group will discuss small group questions

Framework for Good Assessment Practice

1. Each office must have objectives with the following characteristics:
   - Linked to EKU's statement of mission and strategic directions and the unit goals and strategic directions
   - Developed by office staff
   - Measurable, actionable and time-bound
   - Related to the services the office provides
   - Focused on quality of services and administrative processes

Framework for Good Assessment Practice

2. Each office must employ measures of objectives with the following characteristics:
   - Developed and used by staff and office stakeholders
   - Must relate to one or more of the following: participant/student learning, processes (volume of activity, efficiency, compliance with external standards), client outcomes (ability of clients after services have been provided), satisfaction (overall client satisfaction or service specific
   - Must make sense vis-à-vis the outcome being measured
   - Must measure something realistic, useful and meaningful.

Framework for Good Assessment Practice

3. Each office must employ multiple measures of objectives with the following characteristics:
   - Both direct and indirect measures are used in concert to “triangulate” and corroborate the findings. *Direct Measure*: Turn-around time and process completion rates; data error/accuracy rates/ participation rates in special events; % of time that network server were kept online, etc. *Indirect Measure*: survey of satisfaction with services
   - Each measure can be related back to objectives and be used to improve operations and services
   - New measures are introduced periodically to determine efficacy and relationship to other measures so as to keep assessment program relevant and up-to-date

Framework for Good Assessment Practice

4. Each office must analyze the results of its assessment measures, and the analysis must have the following characteristics:
   - Developed and conducted by office staff and stakeholders
   - Relates results back to objectives
   - Thoroughly and thoughtfully documented
   - Evaluative (why) as well as descriptive (what)
   - Criteria for success are developed and used
   - Needs to be able to result in corrective action

Framework for Good Assessment Practice

5. Feedback from the assessment process is used to improve the office and administrative processes within the office and student focused activities. This feedback has the following characteristics:
   - Developed by staff and office stakeholders
   - Relates back to specific objectives
   - Relates both to “what we do” and “how we do it”
   - Maps feedback on outcomes back to specific activities and functions
   - Actions taken based on feedback are reflected in office planning and budgeting processes

Thank you for your participation

Questions?

Contact:

Adrienne: adrienne.bauer@eku.edu

Stacey: stacey.street@eku.edu