Student & Program Assessment

A Blueprint for Success
Plan, Implement, Modify & Repeat

AHEAD 2006 Conference July 18 – 22\textsuperscript{ND}, 2006 - San Diego, California
Who We Are

Elaine Manglitz; Disability Services
Clayton State University
ElaineManglitz@mail.clayton.edu

Kelly Mann; Disability Resource Center
Southern Connecticut State University
mannk1@southernct.edu

Richard Riccardi; Office of Management Information & Research
Southern Connecticut State University
riccardir1@southernct.edu

Steve Robillard; SR-PS, Inc.
srobillard@sr-ps.com

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Agenda

• Theory
• Examples
  • Establishing a Baseline
  • CSP 100 and Graduation Rates
  • Extended Time from Art Towards Science
• Summary
• Creating Your Own Assessment Plan
• Questions and Answers
What Is Assessment

Assessment is the systematic collection, analysis and interpretation of data, and the application of the results to improve student and programmatic performance.
Assessment Should Be:

- Timely
- Carefully planned
- Address a specific question
- Be related to programmatic and or students’ goals
- Be cumulative
- Define clear and appropriate measures of success
- Utilize existing standards and definitions
- Utilize both qualitative and quantitative data
- Favor direct over indirect measures
- Shared with others and utilized to make improvements
Why Should I Assess

Assessment can:

• Document your program’s strengths, weaknesses, and effectiveness
• Provide evidence to support your requests for current and additional resources
• Improve your department’s policies, procedures and service delivery
• Measure student outcomes
When Should I Assess

Assessment should be performed:

- As often as your resources allow
- As close to the event or action being measured or studied
- At regular intervals
- As often as your assessment objectives dictate
From Theory to Practice

1. Formulate the Question
2. Identify the Issue
From Theory to Practice

1. Formulate the Question
2. Identify the Issue
3. Research
4. Preparation
From Theory to Practice

1. Formulate the Question
2. Research
3. Implement
4. Identify the Issue
5. Preparation
6. Running the Numbers
From Theory to Practice

1. Identify the Issue
2. Preparation
3. Running the Numbers
4. Interpret and Improve

Steps:
- Formulate the Question
- Research
- Implement
- Evaluate and Enhance

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It All Starts with a Question

- Work backwards
- Is it doable
- Define “Better”
- What do you hope to gain or learn

Every other Jewish mother in Brooklyn would ask her child after school: So? Did you learn anything today? But not my mother. “Izzy,” she would say, “did you ask a good question today?”

That difference - asking good questions - made me become a scientist.

-Isidor Isaac Rabi-
Review the Literature

- Determine your context
- Learn from others mistakes and success
- Steal good ideas when you find them
- Locate existing standards, definitions, instruments and practices

“If I have seen further it is by standing on the shoulders of giants.”

-Isaac Newton-
Data Measures

• What are you measuring
• Can you measure it directly
• What about validity, repetition and variation
• Who or what are you going to query
• Data collection, retention, security and retrieval
• Don’t forget about the ethical considerations

"What we observe is not nature itself, but nature exposed to our method of questioning."

-Werner Heisenberg-

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Surveys and Interviews

- Easy to do but hard to do correctly
- How anonymous is anonymous
- Do the intended respondents have enough experience to answer the question
- Response rate
- AHEAD’s publication is a good place to start

“In general subjective satisfaction ratings are not a very telling ... measure because users tend to give generous scores ... One reason for this is the general human desire to be polite and fit in.”

-Jakob Nielsen-

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Quantitative Studies

- Cross Sectional or Longitudinal
- Sample size (N)
- Timing
- Be careful to compare apples to apples
Crunching the Numbers

• Null is not zero
• Missing values
• Knowing when to cull the data, and how to do it correctly
• Aggregating data
• Data types (NOIR)
• Mind your P’s and N’s

“There are three kinds of lies: lies, damned lies and statistics.”

-Benjamin Disraeli-
Crunching the Numbers

- Mind your P’s and N’s
- Null is not zero
- Missing values
- Knowing when to cull the data, and how to do it correctly
- Aggregating data
- Data types (NOIR)
Descriptives - A First Step

- The 5M’s Mean, Median, Mode, Min and Max
- Percentages the great equalizer
- The shape of your data

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Hypothesis Testing

• Requires a test of significance
• It is different, but is it different enough
• The devil is in the tails

Correlation

• Correlation does not imply causation
• How strong is the relationship

“In order to shake a hypothesis, it is sometimes not necessary to do anything more than push it as far as it will go.”

-Denis Diderot-

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Interpret, Publish, Apply and Repeat

1. What does this mean
2. No difference is a significant finding
3. Non significance does not equal failure
4. If you do not share, publish or utilize your results you haven’t assessed anything
5. How can I apply what I learned to make improvements
6. Where is this pointing me
7. Repeat, Repeat, Repeat

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A Picture Is Worth a Thousand Words

Percentage of Students by Race/Ethnicity

- **White**: 85%
- **Black**: 9%
- **Hispanic**: 2%
- **Native American**: 1%
- **Other**: 2%
- **Asian**: 1%

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Tips and Tricks

• Let the software do the heavy lifting
• Make friends with your institutional research and other local experts (we suggest cookies and milk)
• Try online survey sites surveymonkey.com (check accessibility first)
• Work together
Establishing a Baseline

To Get Where You Are Going You Need to Know Where You Are Now
Setting up a Baseline for a DSS Office

What is my context?
- Administration
- Campus
- DS Office

What is my purpose?
- To assess and improve services
- To plan
- To provide data to campus administrators
- To conduct research
Baseline Information & Categories

Demographics
  • Numbers
  • Gender
Disability
  • Types
Academic Performance
  • GPA
Staff activity
  • Program Development
Budget
  • Cost per student (general)
Head Count by Disability

- How will we define our categories?
- How will we count? (unique vs. secondary)
- Who is collecting and coding the data?
- Are we being consistent?
### Headcounts Unique and Non Unique

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#### Percentage of Students by Disability Category

<table>
<thead>
<tr>
<th>Disability Category</th>
<th>Unique %</th>
<th>Non Unique %</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>11.84%</td>
<td>5.26%</td>
</tr>
<tr>
<td>Blind (near to total)</td>
<td>22.37%</td>
<td>14.47%</td>
</tr>
<tr>
<td>Chronic Health Related</td>
<td>3.95%</td>
<td>15.87%</td>
</tr>
<tr>
<td>Head Injury</td>
<td>11.84%</td>
<td>27.63%</td>
</tr>
<tr>
<td>LD</td>
<td>19.11%</td>
<td>30.16%</td>
</tr>
<tr>
<td>Low Vision</td>
<td>1.59%</td>
<td>6.35%</td>
</tr>
<tr>
<td>Mobility</td>
<td>11.11%</td>
<td>14.47%</td>
</tr>
<tr>
<td>Psychological/Emotional</td>
<td>30.16%</td>
<td>5.00%</td>
</tr>
</tbody>
</table>

Unique N = 63
Non Unique N = 76
What Does it Mean?

- Small numbers
- Nature of enrollment and campus instructional climate
- Trends
- Planning for the future
Staff Activity
From What to Why to How Much...

- Where are we spending our time when we are not with students?
- How are we prioritizing or are we?
- How does it match my context? (mission of my office and the university)
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Staff Activity – Staff Development

Staff Activity Hours by Activity Type - Staff Development

- Assistive Technology: training (students, faculty/staff); software
- Campus involvement and activities
- Conference and/or professional development activities
- Professional consultation
- Professional consultation: time spent consulting with D6 colleagues
- Professional presentation
- Professional presentation: preparing, delivering a professional
- Program development
- RCLD
- Staff meetings (individual or group)

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Staff Activity – Program Development

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Staff Activity – Campus

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Staff Activity Interpretation

- How does this align with the priorities of:
  - My university?
  - My staff?
- What should we be doing more of or less of?
- Are we coding consistently and consistently coding so that these percentages mean something?
- Do these percentages need to change based on the employee (years experience, job role)?
- Should we look at who is doing particular tasks?
# Staff Activity Planning Worksheet

<table>
<thead>
<tr>
<th>Number of hours (current year)</th>
<th>Alternate text formats coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Do we need to do this? Is it part of our primary mission or legally required |                                    |
|---------------------------------------------------------------------------|                                    |
|                                                                            |                                    |

| How is this connected to my university's or offices mission, goals or strategic plan? |                                    |
|--------------------------------------------------------------------------------|                                    |
|                                                                            |                                    |

| What priority is this activity - need to, would be nice and in a perfect world? |                                    |
|-----------------------------------------------------------------------------|                                    |
|                                                                            |                                    |

| Do I need to do this/or can another staff member do this? Staff initials |                                    |
|-------------------------------------------------------------------------|                                    |
|                                                                            |                                    |

| Will we do more or less of this next year?                                |                                    |
|-------------------------------------------------------------------------|                                    |
|                                                                            |                                    |

| Approximately how many hours will we do this next year? Basis of estimate |                                    |
|----------------------------------------------------------------------------|                                    |
|                                                                            |                                    |

<table>
<thead>
<tr>
<th>Difference between this year and last</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Is there a time of the year when we do more or most of this activity? (Budget activity at end of fiscal year) |                                    |
|------------------------------------------------------------------------------------------------------------|                                    |
So What?

Assessment data allows DS professionals:

- To look at who our students are, where they are, and what they need to progress
- To improve the services we offer on the basis of student and campus needs
- To enter into campus-wide collaborations based on sound reasoning
- To provide the outcome-based reports needed to campus administrators
- To create a viable, effective, and responsive strategic plan for the DS office
What’s Next?

• Students: Develop academic performance data measures to assess differences in student disability, accommodation use, etc. and academic progression

• Staff/Office: Review staff activity data and align with priorities, DSS office mission, Division mission, etc.
A Continuation of Assessing DSS Services:

CSP 100 and Graduation Rates
What is CSP 100

- CSP 100 is a supported success class for students with disabilities targeted at:
  - Incoming freshman with disabilities
  - Academically at-risk students
  - Conditional admits who did not meet the university's entrance requirements
CSP 100 continued...

CSP 100 teaches the following:

- Academic skills
- Organization
- Time management
- Understanding one’s strengths and weaknesses
- Understanding the skills needed to succeed in college
- Self determination
Why Collect Data for this Class?

• Through years of observation, our DSS office strongly believes that CSP 100 helps students with disabilities do better in college, thus increasing the likelihood of graduation from college.

• Research tells us that students with disabilities often lag behind their non-disabled peers in college readiness. This class is designed to address these very issues.

• Our institution is exploring the implementation of a mandatory freshman year experience course similar to the CSP 100 course for all incoming freshman.
Why Collect Data continued…

• Last year initial data was examined and it indicated that our assumptions may be correct.

• Our initial assessment was for internal purposes only. However, this current analysis will be shared and is certainly worth further exploration.
How the Initial Data was Gathered

- We were able to track students who took CSP 100 from the past decade and look at their retention and graduation rates.
- We compared these numbers to our University’s average retention and graduation rates for all first-time full-time freshman.
Comparison of Graduation Rates

Average Graduation Rates

CSP 100  
SCSU

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Outcome of Initial Data

- Initial data from last year indicated a positive correlation between CSP 100 and higher retention and graduation rates.
- Correlation does not mean causation. We could not accurately attribute CSP 100 to the increased graduation and retention rates.
- We were comparing apples to oranges.
Goals for Current Assessment

• Last year’s data indicated a positive correlation between CSP 100 and higher graduation and retention rates.
• This relationship let us know that it was worth pursuing further and taking our assessment to the next level.
• The goal for this year’s assessment was to limit confounding variables and test for statistical significance.
Methodology for 2006 Assessment

• Using Banner Web and the help of wonderful IT folks, the same data was used from last year (CSP 100 graduation rates compared to University graduation rates over the past decade).

• At one point in time, a CSP 100 section was available to students without disabilities. This data was gathered for more accurate comparisons.
Methodology continued...

4 comparison groups were isolated as follows:

• Students with disabilities taking CSP 100
• Students with disabilities who did not take CSP 100
• Students without disabilities who took CSP 100
• Students without disabilities who never took CSP 100
Methodology continued…

Graduation Rate %

<table>
<thead>
<tr>
<th>Disability</th>
<th>CSP 100</th>
<th>No CSP 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disability</td>
<td>26.2</td>
<td>31.7</td>
</tr>
<tr>
<td>No Disability</td>
<td>20.0</td>
<td>35.6</td>
</tr>
</tbody>
</table>
Results

- The CHI Square shows that the only statistically significant difference was between non disabled students who took CSP 100 and the university average.
- While the results are not what we had hoped, we haven’t come to the end of the path – we’ve simply found more questions!
Interesting Findings and Future Research

• Through this analysis, it was discovered that not a single student who has failed CSP 100 has graduated.

• This assessment also shows that students who took CSP 100 as conditional admits (thus at higher risk of not making it to graduation) graduated at the same rate as the general population.
Future Research Continued…

• Define what it means to be an “at-risk” student.
  ▪ Part of this will be to examine how far below the university's entrance requirements the typical conditional admit student was
  ▪ Explore CSP 100 and graduation rates with sub categories of disabilities

• When they took CSP in terms of when they were a FTFT
• Examine the grade obtained in CSP 100 and graduation rate, senior year overall GPA, etc.
Closing the Loop
Extended Time Accommodations

A Case Study
Background

UNC Learning Disabilities Services:

• Serves approximately 250 students per semester
• Provides services for students with Learning Disabilities and ADD/HD
• Proctors approximately 900 exams per semester
The Challenge - Determining The Correct Amount of Extended Time

- Extended time is granted according to exam format
- Reevaluated at least every semester
- Determining the proper amount of extended time utilized data from:
  - the student’s psychoeducational report
  - the student’s accommodation history
- How can we make this more science than art?
  - Utilize usage data from the exams taken in our office?
OK, So What’s the Problem?

• Analysis required many hours of data entry
• Data was not immediately available
• No data was gathered on main format of exam
• Allowed students to occasionally get more time than they should have
• Missing and incorrect data
## The Old Way

**Tests Sign-In Sheet for Thursday, September 25, 2003**

<table>
<thead>
<tr>
<th>Begin/End</th>
<th>LDS Code</th>
<th>Signature</th>
<th>Time In</th>
<th>Time Out</th>
<th>Course/Prof</th>
<th>Exam Format</th>
<th>IN/OUT</th>
<th>Proctoring Instructions</th>
<th>Account/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td></td>
<td></td>
<td>2:12</td>
<td>3:25</td>
<td>Geog 12</td>
<td>Multiple choice</td>
<td></td>
<td></td>
<td>2sett:SA</td>
</tr>
<tr>
<td>3:05 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vdri</td>
<td>Short answer</td>
<td></td>
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<td></td>
<td></td>
<td>Essay</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Calculations</td>
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</tr>
<tr>
<td>2:00 PM</td>
<td></td>
<td></td>
<td>2:00</td>
<td>4:00</td>
<td>Math 81</td>
<td>Multiple choice</td>
<td></td>
<td></td>
<td>TR-17</td>
</tr>
<tr>
<td>3:05 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bylawski</td>
<td>Short answer</td>
<td></td>
<td></td>
<td></td>
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<td>Essay</td>
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<td></td>
<td>Calculations</td>
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</tr>
<tr>
<td>2:15 PM</td>
<td></td>
<td></td>
<td>2:10</td>
<td>4:05</td>
<td>Math 31</td>
<td>Multiple choice</td>
<td></td>
<td></td>
<td>SA2</td>
</tr>
<tr>
<td>4:10 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bylawski</td>
<td>Short answer</td>
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<td>Calculations</td>
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<tr>
<td>2:30 PM</td>
<td></td>
<td></td>
<td>2:29</td>
<td>3:46</td>
<td>Soci 22</td>
<td>Multiple choice</td>
<td></td>
<td></td>
<td>SA5</td>
</tr>
<tr>
<td>4:25 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hasting</td>
<td>Short answer</td>
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<td>Essay</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Calculations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Towards a Solution
Addressing the Data & Logistics Issues

• Automating the exam check-in check-out process
  ▪ Eliminated the need for staff to enter this data
  ▪ Made the data available immediately
  ▪ Improved data collection and accuracy
  ▪ Eliminated the need for staff to manage exam start and end time
  ▪ Prevented students receiving more extended time than they should
Taking Advantage of Change

• **Enhancing the exam process**
  - send the student a “You have 30 minutes left message” without staff intervention
  - Alert both student and administrator when the exam is complete

• **Gathering more data**
  - main exam format
  - number of questions by format
  - total number of questions
### Tests Sign-In Sheet for Monday, July 04, 2005

<table>
<thead>
<tr>
<th>Begin/ End</th>
<th>Last Name</th>
<th>Exam ID</th>
<th>Course/ Prof</th>
<th>Delivery/ Return</th>
<th>Accom/ Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 AM</td>
<td>Robillard</td>
<td>3732</td>
<td>MATH10</td>
<td>Student Delivery</td>
<td>Student Will Return</td>
</tr>
<tr>
<td>11:00 AM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Proctoring Instructions:** Calculator

**Sign in time:** [ ]
**Sign out time:** [ ]
**Which format did the student spend the most time? (please write only one):** [ ]

**Number of Short Answer questions:** [ ]
**Number of Multiple Choice questions:** [ ]
**Number of Calculation questions:** [ ]
**Number of Essay questions:** [ ]
**Total Number of Questions on Exam:** [ ]
The need for extended time was not equal for all exam formats

- Calculations > Essay > Short Answer > Objective
- This result was not effected by disability nor gender

- Having both an LD and ADD/HD did not significantly change the amount of extended time needed compared to students who had one or the other
Closing the Loop

- How do we apply this to a single student?
  - Calculate the extended time usage for all similar format exams (e.g. all essay exams)
  - Examine the min and max values
  - Look at the outliers (extreme values)
  - Check the percentage of uncompleted exams
  - Consider how this changes over time
  - Apply professional judgment
### Extended Time Usage Data

#### Extended Time Usage Calculations

<table>
<thead>
<tr>
<th>ExamID</th>
<th>Course</th>
<th>Section</th>
<th>Exam Date</th>
<th>Exam Length (minutes)</th>
<th>Student Sign-in Time</th>
<th>Student Sign-out Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2483</td>
<td>MUSC 37</td>
<td>1</td>
<td>Monday, October 11, 2004</td>
<td>50</td>
<td>10:04:38 AM</td>
<td>11:46:17 AM</td>
</tr>
</tbody>
</table>

#### Extended Time Usage Multiple Choice

<table>
<thead>
<tr>
<th>timeallowed</th>
<th>timeused</th>
<th>Remaining time</th>
<th>%timeused</th>
<th>Student Primary Format</th>
<th>Number of multiple choice or short answer questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>76</td>
<td>-24 0.76</td>
<td>Multiple Choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>53</td>
<td>-47 0.53</td>
<td>Essay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>103</td>
<td>3 1.03</td>
<td>Essay</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Extended Time Usage Short Answer

<table>
<thead>
<tr>
<th>timeallowed</th>
<th>timeused</th>
<th>Remaining time</th>
<th>%timeused</th>
<th>Student Primary Format</th>
<th>Number of Short Answer Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>72</td>
<td>-28 0.72</td>
<td>Short Answer</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>150</td>
<td>144</td>
<td>-6 0.96</td>
<td>Essay</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>135</td>
<td>135</td>
<td>0 1.00</td>
<td>Essay</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

#### Extended Time Usage Essay
What’s Next

- Ask the professor for the main format of the exam and compare with the student’s response
- Review what, when and how we are asking the student regarding exam format
- Add a question regarding exam completion
- Compute the average extended time used by exam format for each student
- Graphically represent the extended time usage statistics
- Compare different subjects with the same exam format (i.e., French essay vs. History essay)
A Few Closing Points

- These are only three representative examples
- Shows three different ways assessment can be used
- None of these examples were completed overnight
- None of these examples were completed alone, in fact all were completed by a multidisciplinary team
- All had to deal with data and logistical issues
- Each represents a natural progression based on previous work
Completing the Assessment Cycle

Data + Definition + Content = Information
Completing the Assessment Cycle

Data + Definition + Content = Information
Information + Context = Knowledge
Completing the Assessment Cycle

Data + Definition + Content = Information
Information + Context = Knowledge
Applying the Knowledge Gained = Assessment
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