Direct Measures of Student Learning
What is being measured?

Direct Measure

Indirect Measure
- Sick to your stomach
- Fatigued
- Putting on Weight

Pregnant?
Direct Measures

• Captures Student Learning
• Evaluation of demonstration of learning by the student
• Any measure that answer the questions:
  – What have the students actually learned?
  – How much have the students actually learned?
  – How well have the students actually learned?

Indirect Measures

• Implies Learning has Occurred
• This can include
  – Beliefs
  – Opinion
  – Behaviors associated with learning
• This can be measured from
  – Students
  – Professors
  – Others, like Internship supervisor
Three Examples
2 Assessments

One is Direct
One is Indirect
Let’s Complete the Assessment

**Indirect**
Scale from 1 - 7

- Compared to other workshops, how much did you learn about direct measures?
- If given examples of direct and indirect measures, how likely would you be to correctly identify them?
- How likely is it that you can create your own direct measure?

**Direct**
Indirect/Direct/Not Enough Info

- Multiple Choice Quiz
- Students Comfort Level with the material
- Rubrics

Which one is Direct? Which one Indirect?
The Physics Department Wants YOU
(junior and senior B.A., B.S., including Engineering Transfer)

- For ETS testing Monday 4-29-2013
- 1-3PM Gessner 220
- Please help us collect this important data to help us continually improve our programs

Direct Assessment Panel       Mark Stewart, Physics
What?

Educational Testing Service Major Field Test in Physics

ETS MFT Physics

National test designed to assess senior physics majors
Who?
Why?

1. Evaluate program

2. One way to evaluate our grades

3. Evaluate other assessments
1. Program Evaluation

National Comparison Data

<table>
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<tr>
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<th>2012 (percentile)</th>
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<tr>
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</table>
2. Correlation with grades

Theoretical graph

Tougher grading

Top Score

Comprehensive Test Score

Student Coursework

‘A’ in all major courses

Correlation with grades

Tougher grading

Theoretical graph

Top Score

Comprehensive Test Score

Student Coursework

‘A’ in all major courses
2. Correlation with grades
3. Evaluating Other Assessments

![Graph showing Physics GRE and ETS Scores]
Thank you to the Office of Institutional Effectiveness
For Funding
And Supporting this testing
3. Justifying Other Assessments

![FCI Scores Graph]

**FCI Scores**

- **ETS-120**
  - Values range from 0 to 60.

- **FCI %**
  - Values range from 0 to 100.
2. Justification of grades

"Introductory Content" Only

ETS Score - 120

ESU Physics Credit Points

s2013
s2012
3. Justifying other assessments

- Four Year Physics Education
  - Departmental Grades/Cumulative Exams
    - External Measures
      - FCI* Test
    - Internal Measures
      - ETS Test
        - GRE Test**
1. Program Evaluation

Is our program good?

Do others think it is good?

Do we think it is good?

Are students being admitted to grad school?

How do our students compare to those of other schools on comprehensive tests?
Direct Assessment in Student Affairs

RA Training: Behind Closed Doors
Michael C. Sachs, JD, CCEP
Assistant VP Student Affairs
• Professional staff and seasoned RAs act out common scenarios likely to be encountered as part of the job
• A group of new RAs (3-5) enter a room, one or two are assigned to be the confronters, the others observe.
• RAs do not know what they will encounter.
• A facilitator provides verbal feedback to the RA including positive points, areas for improvements, suggestions, and observations at the end of each session.

Behind Closed Doors: the Basics
• Participants (both actors and other new RAs) may provide feedback and suggestions on how to handle the situation, observations, etc. in addition to the facilitator.
• A rubric matrix is used to evaluate the RA against a set of criteria and can be used to evaluate the group as a whole.
• Additional training may be given to a particular RA or the group as a whole based on their performance in the scenarios.
Rating Scale

RA's name:
Evaluator's name:
Community / Scenario:
Date:

• **Beginning**: Does not have grasp of proper approach. Aggressive, inappropriate, overwhelmed, etc.
• **Developing**: Staff approach is uncomfortable or awkward.
• **Accomplished**: Staff approached situation in a calm and collected manner, good knowledge.
• **Exemplary**: Handled superiorly, displaying full knowledge of proper approach.
• **Not applicable**: Unable to determine based on scenario.
Example

- Behind Closed Doors
- Scenario 1: Party
- Location: CW3
- Information given to the RA:
  - You are on duty. As you walk by this apartment/room, you hear bottles clinking, loud voices/music, and other obvious signs of a party.

- Scenario Actors:
  - Roles: Six people drinking, many talking loudly. When you open the door of the apartment the RAs should notice how loud the music and talking is. You open the door just slightly and see the RA. Tell him/her, “just a second” and shut the door. You say just loud enough to be heard by the RA, “hide the shit it’s the RA”. A few moments later you open the door.
Removed superfluous bullet points
Christopher Willis, 3/26/2014
• Beginning: Staff did not assess situation correctly, was inappropriate with handling.
• Developing: Staff had trouble assessing situation but continued in a professional manner.
• Accomplished: Staff assessed situation appropriately and proceeded in an acceptable manner.
• Exemplary: Staff assessed situation and proceeded accordingly, displaying greater knowledge than required.
• Not applicable: Unable to determine based on scenario.

Assessment of the Situation
Assessment: Resident Concerns

- **Beginning**: Staff ignored residents’ concerns.
- **Developing**: Staff acknowledged residents’ concerns but was unable to come up with proper solutions.
- **Accomplished**: Staff addressed concerns at the surface level and gave sufficient answers.
- **Exemplary**: Staff addressed all concerns with superior knowledge and went beyond required response.
- **Not applicable**: Unable to determine based on scenario.
• Beginning: Staff did not notice that any violations were occurring.
• Developing: Staff noticed a violation was occurring, but was unable to clearly identify the violation.
• Accomplished: Staff noted correct policy violations and was able to give accurate explanation of them.
• Exemplary: Staff noted correct violations and thoroughly explained the policy and rationale for the policy.
• Not applicable: Unable to determine based on scenario.

Assessment: Policy
Assessment: Professionalism

• Beginning: Staff was unprofessional throughout the situation and debriefing.
• Developing: Staff was able to remain professional for majority of situation but faltered when it became difficult.
• Accomplished: Staff remained professional throughout entirety of scenario but not during debriefing of scenario.
• Exemplary: Staff was professional for entirety of scenario as well as debriefing showing humility and teachability.
• Not applicable: Unable to determine based on scenario.
1. What were the central issues? (determining the situation; is anyone in immediate danger?; is there alcohol present?; if drunk, are the residents coherent enough to talk to you?; etc.)

2. What would you do differently if faced with this situation again? What would you do if there were more people in the room? What should you do when residents are uncooperative?

3. What resources should you take advantage of when facing this situation?
Call University Police first, then your RD.
Always call University Police when alcohol or drugs are suspected.
Writing the Incident Report—make sure to be detailed in the explanation of what happened.
Did the staff member enter the apartment when they were invited in? If so, be careful of personal items. Don’t touch/take the alcohol, leave it for the University Police. Rather, ask the resident to put all alcohol in the center of the room. Or, call your RD or RD on duty to ask for help.
Handling the noise and alcohol according to policy.
Police will manage safety of people who may be intoxicated / ill.
Following up on the situation when people are sober (the next day).
• Noise
• Party with alcohol
• Drugs
• Depression or attempted suicide
• Assault / Fight
• Discrimination / Bias
• Harassment
• Roommate conflict
• Medical emergency
• General Emergency

Some Typical BCD Scenarios
**NOISE VIOLATION - Behind Closed Doors Evaluation**

**INS:** For each scenario we have identified key skills that should be demonstrated during BCD’s. As an evaluator you are responsible for observing BCD’s and RA performance based on the use of these skills. For each skill mark “Demonstrated”, “Partially Demonstrated”, or “Not Demonstrated”:

- Demonstrated (D) - RA(s) displayed *almost all* necessary components of skills. Anything noteworthy should be indicated in the notes section.
- Partially Demonstrated (PD) - RA(s) successfully exhibited *some* necessary components of skills. Missing components should be indicated in the notes section.
- Not Demonstrated (ND) - RA(s) exhibited *very few* necessary components of skills. Indicate various ways for improvement in the notes section.

For the debrief for each scenario, *add specific comments to the notes section* based on the conversation with the facilitator(s). A folder will be provided in the scenario room to collect the evaluations. *Leave all completed evaluations in the room before moving on to the next scenario.*

<table>
<thead>
<tr>
<th>Skill</th>
<th>D</th>
<th>PD</th>
<th>ND</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess yourself as an RA and knock on the door, assessing once you’re able to see into the room (do not get too close, note if alcohol is present, find out who they are, etc.)</td>
<td></td>
<td></td>
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<tr>
<td>First cooperation in maintaining reasonable noise levels by sizing the impact on the community.</td>
<td></td>
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<tr>
<td>for appropriate follow-up (if noise persists, further action must be taken i.e. incident report and noise must be addressed)</td>
<td></td>
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</tr>
<tr>
<td>appropriate HDRL protocol (write incident report after)</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
• Knowledge Test
• Reflection Papers in Conduct
• Pre and post projects in diversity programming
• Fire suppression exercises
• Matrix for resume writing
• Matrix for budget development after budget workshop
STUDENT ASSESSMENT USING ONLINE HOMEWORK MANAGER

by

PROF. PATS NEELAKANTAN ECONOMICS
Initial Reluctance

I don’t need it! – free trial helped.

Don’t have time to learn? – Really?

It is too expensive
    – Students can’t afford it!
What is being assessed? Why?

Two things are assessed;

(i) Have students grasped the basic material in the course?
   LearnSmart: An intelligent learning system that diagnoses students’ understanding of subject then creates an individualized learning path.

   LearnSmart is tied to learning objectives of the course and competencies set forth by accrediting bodies.

   Instructor sets time limit - It is an ‘electronic flash card that is dynamic.’

(i) Can students demonstrate critical thinking skills?
   Assignments/Problems: To test if they can analyze, apply and evaluate important concepts.
Are they doing Chapter 4 homework?
What if they have doubts?
Who are at risk of failing?
# Snapshot of Student Performance

<table>
<thead>
<tr>
<th>Student</th>
<th>Chapter 1</th>
<th>Chapter 2</th>
<th>Chapter 3</th>
<th>Chapter 4</th>
<th>Chapter 5</th>
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</table>
Are students performing better?

Fall 2007 (before CONNECT)
Fall 2013

![Bar chart showing grades distribution for Fall 2013. The chart has five categories: <60, 60-70, 70-80, 80-90, and 90-100. The 80-90 category has the highest bar, indicating the most students scored in this range.](image-url)
What students say? (Fall 2013)

The Learn Smart and the Financial Planning Problems helped in understanding the chapter much better. It was an awesome and easy software to use.

The LearnSmart assignments were a wonderful way to not only check my understanding after a chapter, but to prepare for exams.
Physics:
Using the ETS Major Field Test

March 31, 2014

Workshop on Direct Assessments
Panel Discussion

Mark Stewart
Robert Cohen
Is it direct?

**Yes:** It directly measures the learning that it is designed to assess.

**No:** We are using the test to assess two outcomes that we assume are directly related to it.

- *Utilize scientific reasoning, mathematical techniques and conceptual understanding to solve problems in science.*

- *Obtain suitable employment in their field of study (if desired), or enroll in graduate school in physics or a related field of study (if desired).*
Educational Testing Service
Major Field Test
in Physics

ETS MFT Physics

National test designed to assess senior physics majors

- Arrange through Office of Institutional Effectiveness (OIE) during the fall or winter
- OIE orders the tests and provides them to us
- Administered to students during the spring of each year, usually April
- Returned to OIE

![Bar chart showing number of students](chart.png)

- **ESPS Track (< senior)**
- **ETP**
- **BA/BS - PHYS (< senior)**
- **BA/BS PHYS - Seniors**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Students</th>
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</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
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<tr>
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- 2012: 0
- 2013: 10 (5 ESPS Track, 3 ETP, 2 BA/BS PHYS Senior)

The Physics Department Wants YOU
(junior and senior B.A., B.S., including Engineering Transfer)

• We choose a 400-level class and have all students in that class take it

• We “invite” all other students to take it

For ETS testing Monday 4-29-2013
1-3PM Gessner 220

• Please help us collect this important data to help us continually improve our programs

1. It helps us evaluate the program by comparing to national norms
2. It helps students predict their future performance on the GRE physics test
3. It helps us evaluate whether our grades and assessments adequately reflect student learning
1. Program Evaluation

Is our program good?

Do others think it is good?

Do we think it is good?

Are students being admitted to grad school?

How do our students compare to those of other schools on comprehensive tests?

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2. Correlation with GRE

![Physics GRE and ETS Scores](image)
3. Correlation with grades

![Graph showing the relationship between ETS Score* and ESU Physics Credit Points. The graph indicates that in 2013, there was a tougher grading compared to ETP - 2013, which had a more lenient grading.](image-url)
Acknowledgements

Office of Institutional Effectiveness for funding and support
4. Correlation with Other Assessments

Introductory Concepts Diagnostic Survey Scores
3. “Intro” content vs. grades

"Introductory Content" Only

ETS Score - 120

ESU Physics Credit Points

s2013

s2012