

MEASURING AND ASSESSING LEARNING OUTCOMES

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Learning Outcomes for this Session

- Participants will gain knowledge to define the elements of an effective learning outcome statement.
- Participants will demonstrate mastery of the definition and application of measurement.
- Participants will demonstrate mastery of the definition and application of assessment.
- Participants will learn how to construct an effective project for measuring and assessing learning outcomes.

Agenda

- Review of How to Write a Learning Outcome presentation
- Measurement & Assessment Overview
- Examples
 - ▣ Opportunities for measurement and assessment
 - ▣ Examples of projects
- Practice

What is a learning outcome?

- “Learning outcomes are statements that specify what learners will know or be able to do as a result of a learning activity. Outcomes are usually expressed as knowledge, skills, or attitudes” *(As cited from the American Association of Law Libraries).*
- “Learning outcomes are statements of the knowledge, skills, and abilities the individual student possesses and can demonstrate upon completion of an experience” *(Adapted from the League for Innovation of Community College).*

What is the big deal?

- Promoting student learning
 - ▣ Promoting new skills, attitudes, abilities
- Creating intentional experiences
- Validation of new and existing programs and initiatives
- With budget reductions, maintains cost efficiency
- Assure cohesion of staff, students, Colleges, departments
- Most accurate way to assess learning, but also the most difficult

Where do I start?

- University of California Mission
- UC San Diego Mission
- Student Affairs
 - Learning Goal Areas
 1. Effective Communication
 2. Interpersonal & Intrapersonal Competencies
 3. Leadership Skills
 4. Personal Skill Development
 5. Intellectual Growth
 6. Active Citizenship & Community Responsibility
- Department/College Mission/Goals

I read the mission/goals, what now?

- First, who is your audience?
- Second, brainstorm answers...
 - ▣ *What do we want participants to know?*
 - ▣ *What do we want participants to be able to do?*
 - ▣ *What do we want participants to understand?*
 - ▣ Will awareness be raised?
 - ▣ Do participants need to understand the context?
 - ▣ Are there things participants need to unlearn?
 - ▣ What are the most important things participants need to be able to do when they finish?

What else do I need to know?

□ Understand:

▣ Program Outcomes – versus – Learning Outcomes

- **Program Outcomes** examine what a program or process is to do, achieve or accomplish for its own improvement; generally needs/satisfaction driven.
- **Learning Outcomes** examine cognitive skills that students (or others) develop through department interactions. These are measurable and have transferable skill development.

Anything else?

- Learning Outcomes are:
 - ▣ Statements indicating what a participant will **know**, **think**, or **be able to do** as a result of an event, activity, program, or initiative
 - ▣ **Measurable and Assessable**
 - ▣ Convey what is to be accomplished
 - ▣ Focus on **learning** resulting from an activity rather than the activity itself
 - ▣ Reflect **missions/goals**

Anything else?

- Questions to consider...
 - ▣ Meaningful: How does the outcome support the departmental mission or goal?
 - ▣ Manageable: What is needed to foster the achievement of the outcome? Is the outcome realistic?
 - ▣ Measurable: How will you know if the outcome is achieved? What will be the assessment method?

Pitfalls...

- ❑ Describe program outcomes, rather than learning outcomes
- ❑ Too vast/complex, too wordy
- ❑ Multiple outcomes in one learning outcome statement
 - ❑ Watch out for “and”
- ❑ Not specific enough
- ❑ Not measurable
 - ❑ Learning outcomes...describe what students will **learn**
 - ❑ Activities...describe what students will **do**

Resources

- Bloom's Classification of Cognitive Skills
- Frameworks for Assessing Learning and Development Outcomes
 - ▣ Based on CAS Standards
- Student Voice Power Point Presentations
- Assessment Coalition Workshops

Terms Defined

- Learning outcomes should be measurable and assessable – What does that mean?
 - ▣ **Measurement:** What are you looking to learn?
 - Think measure...what will you be measuring to get to your outcome, what is your action word?
 - ▣ **Assessment:** How are you going to look for it?
- Also – how will this be **operational**? What program, service, training will I assess?

Types of Measurement & Assessment

Measurement	Assessment
Skills (Critical Thinking, Reflection, Judgment, Service Skills, Conflict Resolution)	Quantitative Methods: Surveys, Evaluations, Rubrics, Counts, Grades, Content Management
Abilities (Communication, Healthy Behaviors, Stress Management, Taking responsibility/holding oneself accountable)	Qualitative Methods: Interviews, Focus Groups, Observation, Narrative Inquiry, Written Responses, Journaling
Cognitive Complexity (Knowledge in a certain area)	
Identity Clarification	
Values Clarification	
Moral/Ethical Decision Making	
Intercultural Maturity	

Opportunities for Measuring Learning Outcomes

- **Student Employee Training Programs**
 - **Examples:** Campus Tour Guides, Student Health Advocates, Student Involvement Leadership Consultants, Front Desk – Recreation Facilities, Academic Transition Counselor for Summer Bridge, Price Center House Managers, University Centers Sound and Lighting Technicians, Challenge Course Trainers
 - **Measuring:** Knowledge, Skills, Abilities
 - **Methods of Assessment:** Surveys, Evaluations, Rubrics, Interviews, Observations

Opportunities for Measuring Learning Outcomes

- **Student Affairs Programs, Workshops, Seminars, and Classes for Students**
 - **Examples:** Financial Aid, Time Management, Public Speaking, Leadership, Effects of Alcohol, Resume Writing workshops; Math and Science Tutoring session, TRIO outreach programs, ethics and academic integrity seminars, intergroup dialogue, landlord-tenant clinics for commuters, Intercollegiate Athletics sports nutrition clinics
 - **Measuring:** Knowledge, skills, abilities, values, moral/ethical decision making, intercultural maturity
 - **Methods of Assessment:** Surveys, evaluations, rubrics, interviews, observations, journaling

Opportunities for Measuring Learning Outcomes

- **Hands-On Experiences Beyond a Workshop, Seminar, or Class**
 - **Examples:** Service-learning programs, student organization involvement, weight loss program, smoking cessation, Outback Adventures wilderness orientation, Intercollegiate Athletics strength and conditioning, AEP summer research program, TRIO outreach programs, intergroup dialogue, math and science tutoring, AEP faculty mentor program
 - **Measuring:** Knowledge, skills, abilities, values, moral/ethical decision making, intercultural maturity
 - **Methods of Assessment:** Surveys, evaluations, rubrics, interviews, observations, journaling, focus groups

Opportunities for Measuring Learning Outcomes

□ **Administrative Services**

- **Examples:** Use of on-line services for financial aid, registrar, off-campus housing listing service, Price Center on-line space reservation request form; Increase knowledge about health issues, use of health services
- **Measuring:** Knowledge, skills, abilities, information literacy
- **Methods of Assessment:** Surveys, counts, focus groups, interviews

Examples

□ **Beginner**

- Measures one type of learning outcome.
- Learning outcome is easier to measure than other types (ex. knowledge versus ability).
- One kind of assessment method used (ex. Survey).
 - Might use an indirect measure of learning (ex. students' perceptions of what they have learned).
- Measures learning occurring in a controlled setting (ex. training workshop in a meeting room).
- Measures learning occurring during a short period of time (ex. two-hour workshop).

Examples

□ Mid-level

- One or more learning outcomes measured (ex. Knowledge, Values).
- More complex types of learning outcomes measured (ex. application of skills).
- Uses more than one kind of assessment method (ex. surveys, observations, interviews)
- Measures learning occurring in different settings (ex. class and hands-on experiences).
- Measures learning occurring during a longer period of time.

Examples

□ **Advanced**

- More than one learning outcome measured (ex. knowledge, values, critical thinking, etc.).
- Even more complex types of learning outcomes measured (ex. application of a skills).
- Several assessment methods used (ex. surveys, observations, interviews) using more direct methods of measurement.
- Measures learning occurring in different settings (ex. class and hands-on experiences)
- Measures learning occurring over a longer period of time.
- ***Methodology controls for effects of environmental influences on the learning outcomes being measured.***

Beginner Example

- **Price Center Student House Manager (HM) Training Program**
- HM sets up meeting rooms and event spaces for activities ranging from meetings and lectures to concerts and dances.
- HM needs to be able set up staging, chairs, tables, audio/visual equipment, and other event specific equipment.

House Manager Learning Outcome Assessment

- Learning outcome statement
 - As a result of participation in the HM training program, two HMs should be able to set up a meeting room for 30 people safely and in less than 15 minutes working from a client's written specifications so that:
 - Tables and chairs are set up to allow meeting attendees to access seating and catering without walking in front of the presenter,
 - Tables, chairs, and floors appear clean,
 - Tables and chairs are functional and comfortably spaced apart,
 - Digital projector and projection screen are located so that all attendees can see the presentation,
 - White board is adjacent to presenter's location.
 - Room is set up to allow attendees to hear and see the presenter

House Manager Learning Outcome Assessment

- Form of measurement – observation
- Form of assessment – rubric
 - A rubric is a guideline for measuring performance of an assignment or task.
 - Identifies the components of the assignment
 - Describes the qualities of each component of the assignment qualifies as poor, average, good, or superior performance.
 - May involve one or more raters

House Manager Room Set Up Rubric

	Poor	Needs Improvement	Good	Superior
Room Floor is Clean and Vacuumed	Did not pick up trash.	Pick up some trash, no vacuum	Spot vacuum	Complete vacuum
Whiteboards check	No check	Erase some writing	Erase All writing, no marker/eraser check	Clean board, fully stocked supply. Pens erasers
Lecture head table legs are locked, table lowered safely, placed in position to accommodate AV, wiped down	Table pulled from storage and pushed into place. No leg lock check!!	Table set Legs locked. Table close to wall/No chair for presenter	Table in center of room. Chair for presenter	Table placed to accommodate AV/Screen And presenter
Catering Tables place, cleaned	No Table	Table in bad location	Table in good location	Furniture set to allow easy access to Catering table
Lecture chair placement	Chairs placed in room. Poor aisles and rows are uneven.	Chairs placed. Rows and aisle are straight. Chairs pulled to allow Cart. Access and aisle.	Seating adjusted for room size and usage to allow for maximum audience comfort, Best view	Good seating. Good view lines. Room set for presenter and AV Equipment

Mid-Level Example

- **Express to Success Public Speaking Seminar**
 - 9–week non-credit program helps students develop public speaking and presentation skills.
 - Includes a weekly seminar meeting and activities covering topics such as:
 - speaking confidently and with impact,
 - dealing with stage fright and anxiety,
 - speech preparation and practice,
 - preparing visual aids and utilizing technology,
 - developing appropriate nonverbal communication and body language.

ETS Public Speaking Seminar Learning Outcome Assessment

- Learning outcome statement
 - ▣ As a result of participating in the ETS public speaking seminar, students will be able demonstrate confidence in their public speaking skills.
- Form of measurement – ability, public speaking apprehension
- Form of assessment – pre-test and post-test survey, observation.
 - ▣ Pre-test survey is administered before the 9-week seminar starts and measures students' existing level of apprehension
 - ▣ The same survey is administered after 9-week seminar to see if the students' level of apprehension had changed. This is the post-test.

ETS Public Speaking Learning Outcome Assessment

Survey questions include:

Please indicate your level of agreement with the following statements:

While preparing for a speech I feel tense and nervous

My thoughts become confused and jumbled when I give a speech

I get anxious when I think about delivering an upcoming speech

My hands tremble when I am giving a speech

Advanced Example

- **Intergroup Dialogue Credit Course offered by the Intergroup Relations Program**
 - Intergroup Dialogues bring together students from two or more social identity groups that sometimes have had contentious relationships with each other, or at the very least have lacked opportunities to talk in non-superficial ways (MIGR Research Project Guidebook, 2008).

Intergroup Relations Learning Outcome Assessment

□ **Learning Outcomes Measured**

- Skills in dealing with conflict
- Communicative interactions related to motivations to bridge differences
- Empathy
- Frequency of engaging in intergroup collaborations
- Awareness of gender and racial inequality

Intergroup Relations Learning Outcome Assessment

□ **Quantitative Methods:**

- Pre/post surveys of experimental and control groups with one year follow-up (post/post) to test sustained learning.
- Pre/post and post/post surveys of social science comparison groups

□ **Qualitative Methods:**

- Video taping of selected class sessions
- Audio taped interviews of all students who completed the experimental classes during year #2.
- Coded Final papers (essay exam) of all experimental subjects.
- In-class reflection papers

Intergroup Relations Learning Outcome Assessment

□ **Reliability Controls:**

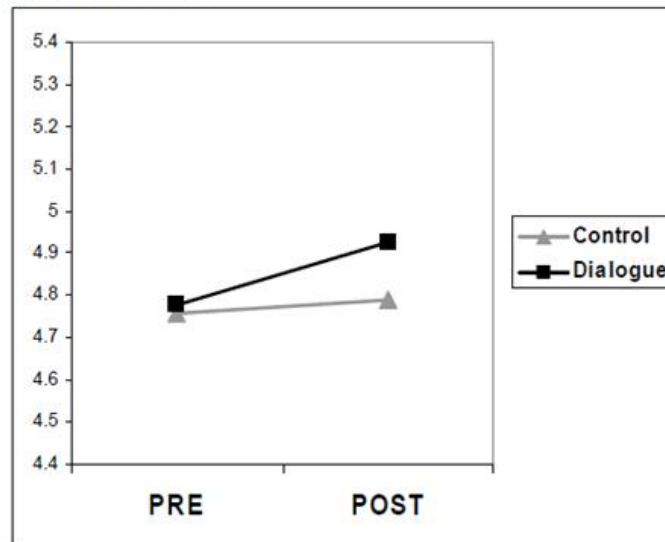
- Random assignment to experimental and control groups
- Standardized curriculum across all institutions
- Standardized training of facilitators, coders, interviewers, and videographers.
- Large sample (51 experiments across 9 institutions)
- Balanced race and gender demographics across all study groups.
- Built on strong previously tested theoretical foundation.
- Multiple methods of assessment
- Financial incentives to ensure high rate of survey return (>90% overall).

Intergroup Relations Learning Outcome Assessment

Skills in Dealing with Conflict (pre $\alpha = .752$; post $\alpha = .766$)

- "I generally try to avoid conflict."
- "I can help people from different groups use conflict constructively."
- "I clam up (freeze) when conflict involves strong emotions."
- "I can work effectively with conflicts that involve me."
- "I am usually uncertain how to help people learn from conflicts."
- "I learn a lot about myself in conflict situations."
- "I'd like for groups to just get along rather than deal openly with their conflicts."
- "I can help people from different groups deal with conflicts that break out between groups."

Treatment Effect



Descriptive

	COND.
S1 MEAN Skills in dealing with conflict	Control
	Dialogue
	Total
S2 MEAN Skills in dealing with conflict	Control
	Dialogue
	Total

Main Effect of Time: $F(1,1211)$

Main Effect of Condition: $F(1,1)$

Time x Condition Interaction
 $p = .007$

Simple Effects

Dialogue vs. Control @ T1:

Dialogue vs. Control @ T2:

T1 vs. T2 (Dialogue Only):

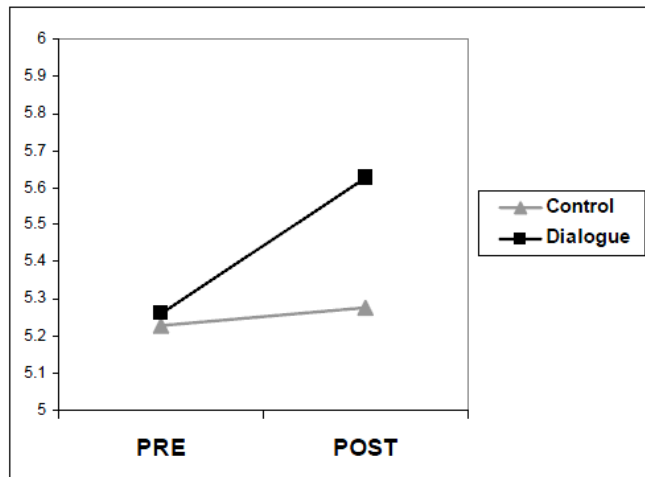
T1 vs. T2 (Control Only):

Intergroup Relations Learning Outcome Assessment

Awareness of and Structural Attribution for Gender and Racial Inequality (pre $\alpha = .833$; post $\alpha = .852$)

- “What one can achieve in life is still limited by one’s race or ethnicity.”
- “Prejudice and discrimination in the educational system limit the success of people of color.”
- “Unfair hiring and promotion practices help keep many people of color from gaining positions of power.”
- “Most people of color are no longer discriminated against in this country.”
- “In the United States, there is still great gender inequality.”
- “Discrimination in the workplace still limits the success of many women.”
- “It is harder for women candidates to raise campaign funds than it is men candidates.”
- “Most women are no longer discriminated against in this country.”

Treatment Effect



Descriptive Statistics

	COND...	Mean	Std. Dev
S1 MEAN GENDER-RACE awareness and structural attribution	Control	5.2280	1.0
	Dialogue	5.2599	1.0
	Total	5.2443	1.0
S2 MEAN GENDER-RACE awareness and structural attribution	Control	5.2784	1.0
	Dialogue	5.6248	1.0
	Total	5.4550	1.0

Main Effect of Time: $F(1,1379) = 90.869$ $p < .001$

Main Effect of Condition: $F(1,1379) = 12.506$, $p < .001$

Time x Condition Interaction: $F(1,1379) = 52.000$, $p < .001$

Simple Effects

Dialogue vs. Control @ T1: $T(1450) = -.75$, $p = .450$

Dialogue vs. Control @ T2: $T(1386) = -5.5$, $p < .001$

T1 vs. T2 (Dialogue Only): $T(704) = -10.8$, $p < .001$

Where do I begin?

- Questions to ask...
 - ▣ What is my learning outcome?
 - ▣ How will this be operational?
 - ▣ What am I measuring?
 - ▣ How will I assess?

Practice

- Group by interest...
 - Will you be measuring and assessing learning from:
 - Student Employees
 - Program Participants
 - In-depth, hand-on experiences
 - Administrative Services

- Ask yourself...
 - What is my learning outcome?
 - How will this be operational?
 - What am I measuring?
 - How will I assess?

Resources



- Bloom, FALDOs
- Student Voice Trainings, Assessments
- Assessment Coalition Workshops
- Bill Armstrong, et al. in SARI