

**Get SMART:**  
 Creating  
 Developmentally  
 Appropriate  
 Outcomes



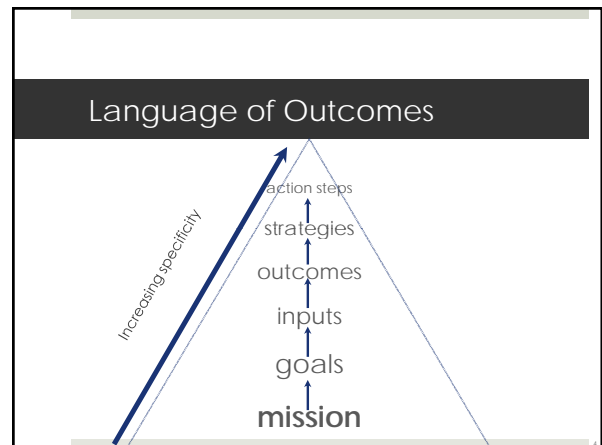
ACPA BOSTON 2010 ANNUAL CONVENTION  
 INNOVATIVE IDEAS • REVOLUTIONARY RESULTS

March, 2010

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Assessment isn't an activity.  
 It's a state of mind.

- Session Outcomes
1. **Articulate** the language of outcomes
  2. **Articulate** the levels of three different learning taxonomies:
    - a) cognitive learning
    - b) affective learning
    - c) psychomotor learning
  3. **Apply** the taxonomies to work in your area
  4. **Write** outcomes appropriate for each level in each taxonomy
  5. **Map** the elements of a course or program to a taxonomy



Mission

■ **Mission:** A mission clarifies an organization's purpose or why it should be doing what it does (Bryson, 2004. p. 102).

■ **Example:** Dartmouth College educates the most promising students of this generation to be the leaders of the next generation with a faculty of scholars dedicated to teaching and the creation of new knowledge.

Who: Dartmouth College  
 What: educates the most promising students of this generation  
 Why: to be the leaders of the next generation  
 How: with a faculty of scholars dedicated to teaching and the creation of new knowledge

Mission

■ **Mission:**

■ Example: Consistent with the liberal arts tradition of Dartmouth College, the Dean of the College Division builds an inclusive, thriving, and intellectually stimulating environment that fosters academic, social, cultural, and personal growth.

### Mission Alignment


- Mission**
  - Dartmouth College educates the most promising students of this generation to be the leaders of the next generation with a faculty of scholars dedicated to teaching and the creation of new knowledge.
  - Consistent with the liberal arts tradition of Dartmouth College, the Dean of the College Division builds an inclusive, thriving, and intellectually stimulating environment that fosters academic, social, cultural, and personal growth.

### Mission Alignment

- Mission**
  - Consistent with the liberal arts tradition of Dartmouth College, the Dean of the College Division builds an inclusive, thriving, and intellectually stimulating environment that fosters academic, social, cultural, and personal growth.
  - The Collis Center for Student Involvement believes co-curricular learning opportunities are vital in developing students leadership and life skills. We act as a catalyst to engage students outside the classroom by providing training, advising, mentoring students and organizations, creating development student employment opportunities, fostering interactions among members of the College community, and maintaining programming spaces and resources for student-focused initiatives that enrich our campus culture.

### Goal

- Goal:** A goal is an end result written in broad terms.
  - Example: As a result of participating in the Emerging Leaders Program, students will increase their leadership skills.




### Mission-Goal Alignment

- Mission:** The Collis Center for Student Involvement believes co-curricular learning opportunities are vital in **developing students leadership and life skills**. We act as a catalyst to engage students outside the classroom by: **providing training**, advising, mentoring students and organizations, creating development student employment opportunities, fostering interactions among members of the College community, and maintaining programming spaces and resources for student-focused initiatives that enrich our campus culture.
- Goal:** As a result of participating in the Emerging Leaders Program, students will increase their leadership skills.

### Input

- Input:** A raw material that is used to develop a program or intervention which can include faculty, staff, budget, facilities, technology, etc.
  - Example: \$1500, two staff members, and electronic portfolio software is available for the Emerging Leaders Program.




### Outcomes

- Operational outcomes
- Learning outcomes
- Program outcomes


### Operational Outcome

- **Operational Outcome:** Metrics that document how well the operational aspects of a program or activity are functioning, but do not document learning or overall impact of the program or activity.
- Example: 200 students will participate in the Emerging Leaders Program by the end of the 2008-2009 academic year.




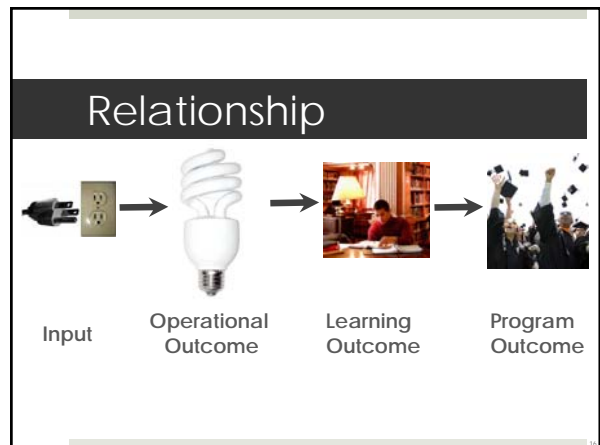
### Learning Outcome

- **Learning Outcome:** A learning outcome is the desired learning effect of a program, service, or intervention but is more specific than a goal. It is results-focused and participant centered.
- Example: As a result of participating in the Emerging Leaders Program, students will develop and hone meeting facilitation skills.



### Program Outcome

- **Program Outcome:** A program outcome is the desired aggregate effect of a program, service, or intervention but is more specific than a goal.
- 80% of all students will lead a student organization during their college career.

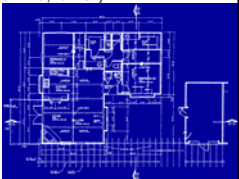



### Outcome Practice

- In small groups, think of an activity/program and identify
  - 3 inputs
  - 2 operational outcomes
  - 2 learning outcomes
  - 2 program outcomes


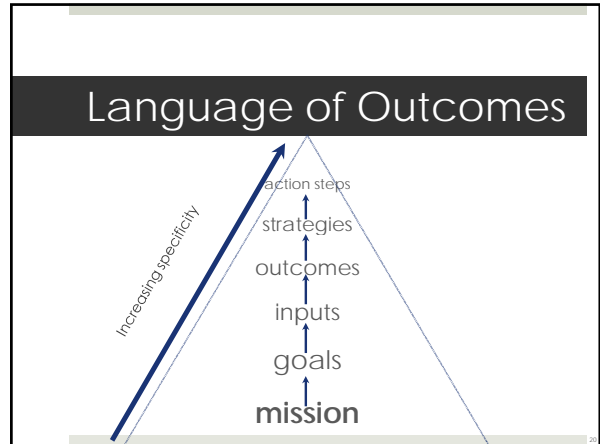
### Strategy

- **Strategy:** A strategy is a means to achieving an outcome or goal.
  - Example: In order for students to increase their meeting facilitation skills, they will identify and describe three best practices in meeting facilitation.



### Action Step

- o **Action step:** An action step is a way to implement a strategy to achieve an outcome or goal.
  - Example: If the strategy is to have students identify and describe three best practices in meeting facilitation, action steps might include identifying meetings to attend, developing an opportunity for reflection, developing a framework for that reflection, evaluating the experience, etc

### Roadtrip Analogy

- Goal
  - Drive to parents house for visit
- Inputs
  - Snacks, car, \$ for tolls

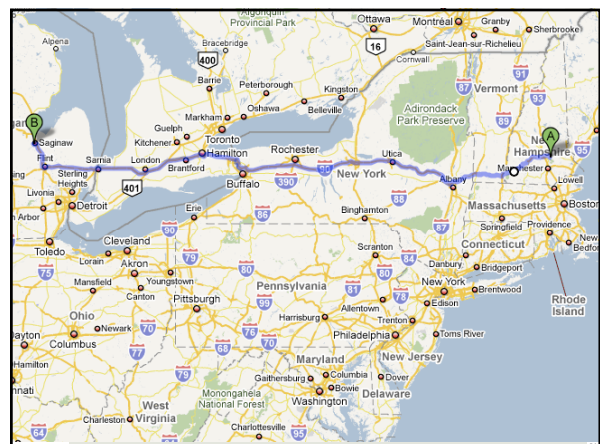


### Roadtrip Analogy

- Operational Outcomes
  - MPH, MPG, number of stops, total time
- Learning Outcomes
  - None
- Program Outcome
  - Arrive at 3215 Mackinaw, Saginaw, MI by 10pm on Sunday, December 20th

### Roadtrip Analogy

- Program Outcome
  - Arrive at 3215 Mackinaw, Saginaw, MI by 10pm on Sunday, December 20th
- Strategy
  - Take 93S to 90W through Canada
  - Take 93S to 495S to 90W to 84S to Scranton





## Roadtrip Analogy

- Program Outcome
  - Arrive at 3215 Mackinaw, Saginaw, MI by 10pm on Saturday, December 20th
- Strategy
  - Take 93S to 495S to 90W to 84S etc.
- Action steps
  - Get up at 5am, get gas in..., get lunch in...

## Questions

- Goals, inputs, outcomes?
- Anything else?



## Why Outcomes?

## Learning Outcomes

- Learning outcomes are statements of what is expected people will be able to value, do, or know, (attitude, skills, and knowledge) as a result of participating in a learning activity which could be a class, an educational program, an individual interaction, or using a resource.
- The emphasis is on what people will be able to do, not inputs, or operational outcomes.

## Write Learning Outcomes

- On the index cards, write 2 learning outcomes - one per card. Then copy each on another card.
- Keep one of each and give me the other two to me.

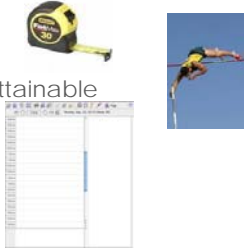
## Good Outcomes

- Using the index cards of outcomes, as a group develop a list of characteristics of good outcomes.



## SMART

- Specific
- Measurable
- Aggressive - but attainable
- Results-oriented
- Time-bound



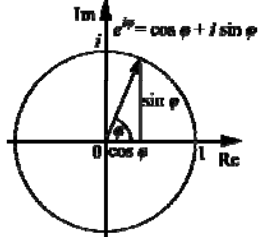
University of Central Florida, (2004). *Program assessment handbook*. Orlando, FL. Author.

## 3 Ms

- Meaningful:
  - Is this outcome aligned with the division or department missions or goals?
- Manageable:
  - Is this outcome actually achievable and assessable?
- Measurable:
  - Can you articulate how you would know you achieved the outcome?

## Developing Learning Outcomes

- ABCD Formula
  - Audience
  - Behavior
  - Condition
  - Degree



Heinrich, R., Molenda, M., Russell, J., & Smaldino, S. (2002). *Instructional media and technologies for learning* (7th ed.). Englewood Cliffs: Prentice Hall, Inc.

## Key Elements

- Audience (Who)
  - Who is the target of the outcome?
- Behavior (What)
  - What should the audience be able to know, do, or value?
- Condition (How)
  - What will facilitate the learning?
- Degree (How much)
  - How much will be accomplished or demonstrated?

## Developing Learning Outcomes

To write a learning outcome, follow the formula

\_\_\_\_\_

Condition      Audience      Behavior      Degree

### Developing Learning Outcomes

Condition Audience

As a result of participating in the leadership workshop, students

Behavior (verb in future tense)

Degree

will demonstrate three of the five leadership criteria

as stated in Kouze's and Posner's *The Leadership Challenge*.

### Developing Learning Outcomes

SWiBAT Formula

Learning outcome =

SWiBAT + Bloom word + Condition

Students will be able to differentiate between two styles of leadership as a result of attending the leadership workshop.

### Action Verbs

- Analyze
- Apply
- Argue
- Arrange
- Assemble
- Calculate
- Classify
- Compare
- Create
- Criticize
- Defend
- Define
- Describe
- Develop
- Differentiate
- Discuss
- Explain
- Formulate
- Implement
- Manage
- Operate
- Outline
- Translate

### Words/Phrases to Avoid

- Appreciate
- Become aware of
- Become familiar with
- Know
- Learn
- Understand

### Learning Outcome Examples

- As a result of completing the workbook, students will define three campus offices that can provide academic support.
- As a result of the online discussion, students will be able to compare and contrast intramural sports, club sports, and varsity sports.

### Learning Outcome Examples

- As a result of reading the manual, student workers will correctly update a database with appropriate information.
- As a result of the first year reading, students will be able to criticize the protagonist's behaviors.

## Learning Outcome Examples

- As a result of the retreat, students will be able to assess three strengths and three weaknesses of their leadership skills.
- As a result of the workshop, students will be able to develop an action plan for obtaining an internship related to their major.

## Learning Outcome Examples

- As a result of the team builder, students will remember the name of 5 newly introduced people
- As a result of living in the residence halls, students will recognize the need for balance between freedom and responsible behavior
- As a result of participating in a student organization, students will cooperate in group activities

Adapted from  
<http://www.nwlink.com/~Donclark/hrd/bloom.html>

## Learning Outcome Examples

- As a result of participating in the a capella group, students will be able to sight read music as demonstrated by other students
- As a result of working on the maintenance crew, students will be able to properly repair residence hall furniture

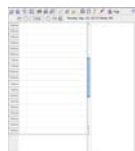
Adapted from  
<http://www.nwlink.com/~Donclark/hrd/bloom.html>

## Helpful Hints

- Work with 1-2 others to include different perspectives
- Use an iterative process to ensure outcome is measurable
- Review outcomes with stakeholders
- Don't worry about assessing all outcomes

## SMART Checklist

- Specific
- Measurable
- Aggressive - but attainable
- Results-oriented
- Time-bound



University of Central Florida. (2004). *Program assessment handbook*. Orlando, FL. Author.


## Revise outcomes

- What types of revisions did you make?
  - Specific
  - Measurable
  - Aggressive, but attainable
  - Results-oriented
  - Time-bound
  - Revised action verb
  - Something else



## Reflection Pause

- Comments, questions?



## Break!

## Knowledge and Use of Learning Taxonomies

- How many of you:
  - Know about learning taxonomies?
  - Have used learning taxonomies?

## Learning Taxonomy History

- Arose from discussions at 1948 Convention of the American Psychological Association
- Benjamin Bloom and colleagues 1956
- Classified educational goals and objectives
- Created a **classification method** for behaviors believed to be important to learning
- Identified three different types of learning with **hierarchical** levels
  - Cognitive
  - Affective
  - Psychomotor\*

Forehand, M. Bloom's taxonomy. Retrieved on 12/14/09 from [http://projects.coe.uga.edu/epltt/index.php?title=Bloom's\\_Taxonomy](http://projects.coe.uga.edu/epltt/index.php?title=Bloom's_Taxonomy)

## Bloom's Cognitive Taxonomy Revised

- [http://projects.coe.uga.edu/epltt/index.php?title=Bloom's\\_Taxonomy](http://projects.coe.uga.edu/epltt/index.php?title=Bloom's_Taxonomy)
- 6 cognitive processes dimension
  1. Remember
  2. Understand
  3. Apply
  4. Analyze
  5. Evaluate
  6. Create
- 4 knowledge dimensions
  1. Factual knowledge
  2. Conceptual knowledge
  3. Procedural knowledge
  4. Meta-cognitive knowledge

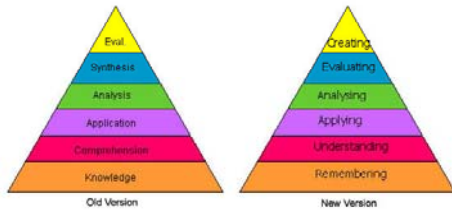
Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives*. New York : Longman.

## Bloom's Cognitive Taxonomy Revised

| The Knowledge Dimension  | The Cognitive Process Dimension |            |            |               |          |           |
|--------------------------|---------------------------------|------------|------------|---------------|----------|-----------|
|                          | Remember                        | Understand | Apply      | Analyze       | Evaluate | Create    |
| Factual Knowledge        | List                            | Summarize  | Classify   | Order         | Rank     | Combine   |
| Conceptual Knowledge     | Describe                        | Interpret  | Experiment | Explain       | Assess   | Plan      |
| Procedural Knowledge     | Tabulate                        | Predict    | Calculate  | Differentiate | Conclude | Compose   |
| Meta-Cognitive Knowledge | Appropriate Use                 | Execute    | Construct  | Achieve       | Action   | Actualize |

[http://projects.coe.uga.edu/epltt/index.php?title=Bloom's\\_Taxonomy](http://projects.coe.uga.edu/epltt/index.php?title=Bloom's_Taxonomy)

## Cognitive Taxonomy Revisions



Forehand, M. Bloom's taxonomy. Retrieved on 12/14/09 from [http://projects.coe.uga.edu/eplt/index.php?title=Bloom's\\_Taxonomy](http://projects.coe.uga.edu/eplt/index.php?title=Bloom's_Taxonomy)

## Cognitive: REMEMBER

- **Definition:** Recall data or information.
- **Key words:** Define, describe, identify, label, list, match, name, outline, recall, recognize, reproduce, select, state.

<http://www.nwlink.com/~donclark/hrd/bloom.html>

## Cognitive: UNDERSTAND

- **Definition:** Construct meaning from instructional messages.
- **Key words:** Interpret, exemplify, classify, summarize, infer, comparing, explain.

<http://oregonstate.edu/instruct/coursedev/models/d/taxonomy/#table>

## Cognitive: APPLY

- **Definition:** Carry out or use a procedure in a given situation.
- **Key words:** Execute, implement, demonstrate, show.

<http://oregonstate.edu/instruct/coursedev/models/d/taxonomy/#table>

## Cognitive: ANALYZE

- **Definition:** Break material into constituent parts and determine how parts relate to one another and to an overall structure of purpose.
- **Key words:** Differentiate, organize, attribute.

<http://oregonstate.edu/instruct/coursedev/models/d/taxonomy/#table>

## Cognitive: EVALUATE

- **Definition:** Make judgments based on criteria and standards.
- **Key words:** Check, critique, appraise.

<http://oregonstate.edu/instruct/coursedev/models/d/taxonomy/#table>

## Cognitive: CREATE

- **Definition:** Put **elements together** to form a coherent or functional **whole**; reorganizing elements into a new pattern or structure.
- **Key words:** Generate, plan, produce.

<http://oregonstate.edu/instruct/coursedev/models/id/taxonomy/#table>

## Affective Taxonomy

- Receives phenomena
- Responds to phenomena
- Values
- Organizes
- Internalizes values

Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1973). *Taxonomy of educational objectives, the Classification of educational goals. Handbook II: Affective domain*. New York: David McKay Co., Inc.

## Affective: RECEIVES PHENOMENA

- **Definition:** **Awareness**, willingness to hear, selected attention.
- **Key words:** Asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits, erects, replies, uses.

<http://www.nwlink.com/~donclark/hrd/bloom.html>

## Affective: RESPONDS TO PHENOMENA

- **Definition:** **Active participation** on the part of the learner. Attends and reacts to a particular phenomenon. Learning outcomes may emphasize compliance in responding, willingness to respond, or satisfaction in responding.
- **Key words:** Answers, assists, aids, complies, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes.

<http://www.nwlink.com/~donclark/hrd/bloom.html>

## Affective: VALUES

- **Definition:** The **worth or value** a person attaches to a **particular object, phenomenon, or behavior**. This ranges from simple acceptance to the more complex state of commitment. Valuing is based on the internalization of a set of specified values while clues to these values are expressed in the learner's overt behavior and are often identifiable.
- **Key words:** Completes, demonstrates, differentiates, explains, follows, forms, initiates, joins, justifies, proposes, reads, reports, selects, shares, studies, works.

<http://www.nwlink.com/~donclark/hrd/bloom.html>

## Affective: ORGANIZES

- **Definition:** **Organizes values into priorities** by contrasting different values, resolving conflicts between them, and creating an unique value system. The emphasis is on comparing, relating, and synthesizing values.
- **Key words:** Adheres, alters, arranges, combines, compares, completes, defends, explains, formulates, generalizes, identifies, integrates, modifies, orders, organizes, prepares, relates, synthesizes.

<http://www.nwlink.com/~donclark/hrd/bloom.html>

## Affective: INTERNALIZES VALUES

- **Definition:** Has a **value system** that **controls** their **behavior**. The behavior is pervasive, consistent, predictable, and most importantly, characteristic of the learner. Instructional objectives are concerned with the student's general patterns of adjustment (personal, social, emotional).
- **Key words:** Acts, discriminates, displays, influences, listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, verifies.

<http://www.nwlink.com/~donclark/hrd/bloom.html>

## Psychomotor Taxonomy

- Dave, R. H. (1975). *Developing and Writing Behavioural Objectives*. (R J Armstrong, ed.) Educational Innovators Press.
- Harrow, Anita (1972) *A taxonomy of psychomotor domain: a guide for developing behavioral objectives*. New York: David McKay.
- Simpson E. J. (1972). *The Classification of Educational Objectives in the Psychomotor Domain*. Washington, DC: Gryphon House.

<http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm#bloom's%20affective%20domain>

## Psychomotor Taxonomy (Dave)

- Imitation
- Manipulation
- Precision
- Articulation
- Naturalization

Dave, R. H. (1975). *Developing and Writing Behavioural Objectives*. (R J Armstrong, ed.) Educational Innovators Press.

## Psychomotor: IMITATION

- **Definition:** **Copy** action of another; observe and replicate.
- **Key words:** Copy, follow, replicate, repeat, adhere.

<http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm#bloom's%20affective%20domain>

## Psychomotor: MANIPULATION

- **Definition:** **Reproduce** activity from instruction or memory.
- **Key words:** Recreate, build, perform, execute, implement.

<http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm#bloom's%20affective%20domain>

## Psychomotor: PRECISION

- **Definition:** **Execute** skill **reliably**, independent of help.
- **Key words:** Demonstrate, complete, show, perfect, calibrate, control.

<http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm#bloom's%20affective%20domain>

## Psychomotor: ARTICULATION

- **Definition:** Adapt and integrate expertise to satisfy a non-standard objective.
- **Key words:** Construct, solve, combine, coordinate, integrate, adapt, develop, formulate, modify, master.

<http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm#bloom's%20affective%20domain>

## Psychomotor: NATURALIZATION

- **Definition:** Automated, unconscious mastery of activity and related skills at strategic level.
- **Key Words:** Design, specify, manage, invent, project-manage.

<http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm#bloom's%20affective%20domain>

## Reflection Pause

- Any comments or questions to this point?



## Implications

- What are the implications for course or program development?
- What are the implications for assessment?

## Application

- In small groups, brainstorm ways in which you can see applying learning taxonomies in your work.

## SWiBAT and SMART Review

- SWiBAT: Students Will Be Able To....
- ABCD: Audience, Behavior, Condition, Degree
  - As a result of the pre-convention workshop, participants will explain the difference between the three learning taxonomies.
- SMART: Specific, Measureable, Aggressive/Attainable, Results-oriented, Time-bound

## Outcome Development

- Choose one taxonomy and develop a learning outcome for a learning goal in your work for each level.

## Discussion

- How was the process of creating developmentally appropriate outcomes?

## Goal-Activity Mapping

- Using the worksheet, choose one taxonomy and a program you work with. Map activities within that program to the learning taxonomy.

## Conclusion



## Resources

- Bresciani, M. J., Zelna, C. L., & Anderson, J. A. (2004). *Assessing student learning and development: A handbook for practitioners*. Washington, D.C.: National Association of Student Personnel Administrators
- Bryson, J. M. (2004). *Strategic planning for public and non-profit organizations: A guide to strengthening and sustaining organizational achievement* (3rd ed.). San Francisco: Jossey-Bass.
- Heinich, R., Molenda, M., Russell, J., & Smaldino, S. (2002). *Instructional Media and Technologies for Learning, 7th Edition*. Englewood Cliffs: Prentice Hall, Inc.
- Hoffman, J.L. (2007, June). From theory to assessment: *Using student development theory to design SLOs, assessments and rubrics*. Presented at the 2007 International Assessment and Retention Conference, St. Louis, MO.

## Resources

- Jenkins, A., & Unwin, D. (1996, June 27). How to write learning outcomes. Retrieved from the National Center for Geographic Information & Analysis web site: <http://www.ncgia.ucsb.edu/education/curricula/qiscc/units/for/mat/outcomes.html>
- Krist, P. (2006). *S.O.S: Student Outcome Success*. Presented at the 2006 Association for Institutional Research Annual Forum, Chicago, IL.
- Maki, P. L. (2004). *Assessing for learning: Building a sustainable commitment across the institution*. Sterling, VA: Stylus.