

## FEEDBACK AND ASSESSMENT

## DAY 2 WORKSHOP OBJECTIVES

After Day 2, workshop participants will be able to:

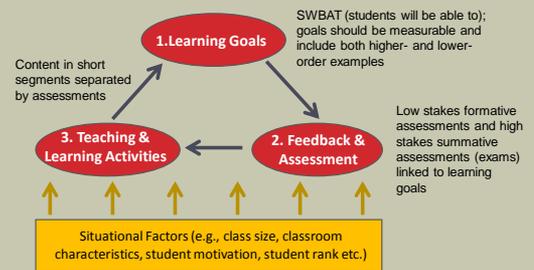
1. Explain the difference between formative and summative assessments
2. Classify an assessment activity using Bloom's taxonomy
3. Explain how they could use Venn diagrams or Concept maps to represent different Bloom's Taxonomy levels
4. Analyze existing resources to identify examples of good matches between learning objectives/goals and assessments
5. Create assignments that could be used in their own classes to assess student learning objectives

## STUDENT ACTIVITY AND LEARNING

*A traditional science instructor concentrates on teaching factual knowledge, with the implicit assumption that expert-like ways of thinking about the subject come along for free or are already present. But that is not what cognitive science tells us. It tells us instead that students need to develop these different ways of thinking by means of extended, focused, mental effort.*

C. Wieman, Nobel Prize winner, Change, 2007, Sept/Oct, p. 9-15.

## BACKWARD LESSON DESIGN



Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses, L. Dee Fink, 2003

**Observation:** It is difficult for instructors in large classes to recognize student learning challenges without ongoing formative assessment.

More instructor understanding of student learning

↓  
**Learning assessment**

↓  
Less instructor understanding of student learning

### Understanding Student Learning

- On-going assessment through student dialog in small classes
- Instructor grading of short answer and essay questions
- Computer grading of multiple choice questions using bubble-sheets

## FEEDBACK & ASSESSMENT

**Assessment** - activities that are undertaken to provide information to be used as feedback to modify teaching and learning practices

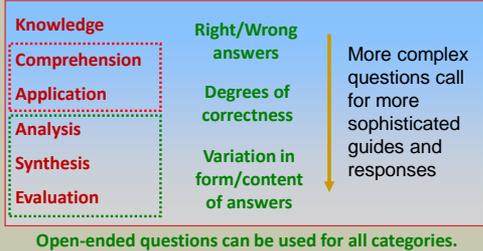
- **Formative assessment** – low stakes/no stakes, evidence used to measure how well students are learning and to help the teacher to improve ongoing instruction
- **Summative assessment** – the use of data, assembled at the end of particular sequence of activities, to provide an overview of learning

- Small group discussion exercises (Think-Pair-Share)
- Conceptests (group vote/class meta-analysis)
- Student worksheets, minute papers

*"When the cook tastes the soup, that's formative; when the guests taste the soup, that's summative."*

## BLOOM'S TAXONOMY CATEGORIES

Learning objectives and assessments can be ordered using **Bloom's Taxonomy**



NC STATE UNIVERSITY

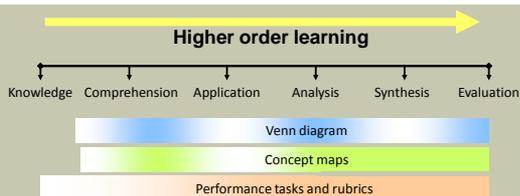
## CHARACTERIZING ASSESSMENT ACTIVITY

Review the description of the six categories of Bloom's taxonomy

- Apply Bloom's Taxonomy to characterize the assessments that follow and compare your interpretations with others.

NC STATE UNIVERSITY

## Multi-order Activities



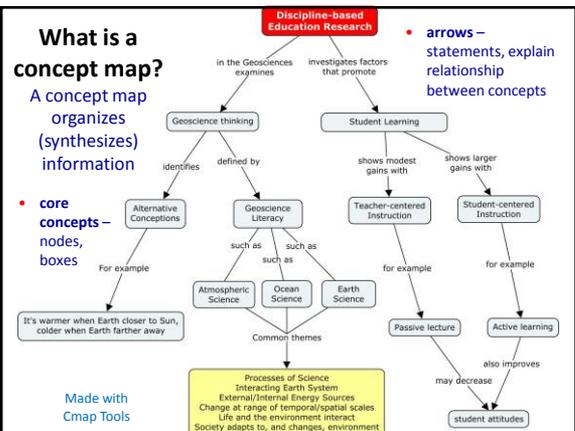
These types of exercises

- help students generate more complete answers
- target a range of higher reasoning skills
- provide instructors with alternative grading options.

## What is a concept map?

A concept map organizes (synthesizes) information

- core concepts – nodes, boxes



## ONE QUESTION STYLE, MANY USES

Concept Maps/Venn Diagrams

- Comprehension** – Provide a partially completed concept map or Venn diagram and a list of additional terms.
- Analysis** – Create an incorrect concept map or Venn diagram. Ask students how map could be improved.
- Synthesis** – Provide a concept (map) or pair of concepts (Venn diagram) and have students create a figure.
- Evaluation** – Supply students with multiple concept maps or Venn diagrams and have them rank them from best to worst and justify choices.

## STRATEGIES THAT SUPPORT STUDENT LEARNING

Create an environment that fosters learning to learn<sup>1</sup>

- Provide assessments that encourage effort (e.g., allow for revisions)
- Provide visual, graphic and organizational structures to help students "chunk" information (e.g., graphic organizers, concept maps, reading reflections)

<sup>1</sup>Based on research findings from Zimmerman, B. J. (1989); Kaatje Kraft, pers. comm.

NC STATE UNIVERSITY

## EXAMINE SAMPLE LEARNING OBJECTIVES AND ASSESSMENTS

Review examples of online resources from the InTeGrate project and the On the Cutting Edge exemplary teaching activities collection

Identify examples of learning objectives/goals and related assessments at different Bloom's levels

NC STATE UNIVERSITY

## WRITE ASSESSMENTS FOR YOUR LEARNING OBJECTIVES

Review your learning objectives and create appropriate assessments

- *Work in small teams (3-4)*
- *Identify the Bloom's level for each assessment*
- *Estimate the total time it will take for students to complete the activities in class*

NC STATE UNIVERSITY

## DAY 2 WORKSHOP OBJECTIVES

*How confident are you that you are able to:*

1. *Explain the difference between formative and summative assessments*
2. *Classify an assessment activity using Bloom's taxonomy*
3. *Explain how they could use Venn diagrams or Concept maps to represent different Bloom's Taxonomy levels*
4. *Analyze existing resources to identify examples of good matches between learning objectives/goals and assessments*
5. *Create assignments that could be used in their own classes to assess student learning objectives*

## DAY 2 WRAP UP

*Share examples of learning objectives and assessments*

*Day 3 – Activities in and out of class*

*Reflection Activity*

- *What was the most interesting thing you learned today?*

NC STATE UNIVERSITY