Selecting Teaching Methods and Moves

In order for students to successfully meet course learning outcomes, they need opportunities to practice the type of thinking required by the learning outcomes. Different teaching methods (lectures, discussions, group work), teaching moves (concept maps, relevant examples), and student activities (classifying concepts, practicing recalling information) offer students the types of practice opportunities they need.

Following are instructions for a three-step process that will help you to identify the types of assignments and activities aligned to your learning outcomes, with an example of a learning outcome from an introductory writing course.

The learning outcome we will use is "Students will be able to use MLA format to properly document their research findings."

Step 1: Identify the cognitive levels of the action verbs in each of your learning outcomes.
- Locate the action verb in your first learning outcome.
  - Example: Students will be able to <u>use</u> MLA format to properly document their research findings.
- Find the action verb in your first learning outcome on Chart 1: "Determining the Cognitive Levels of Your Learning Outcomes," which contains an adapted list of action verbs from Linda Nilson and their corresponding cognitive levels.
  - Example:

Apply	Apply	Criticize	Execute	Modify
	Appraise	Demonstrate	Formulate	Operate
	Break down	Determine	Give examples	Practice
	Calculate	Develop	Identify	Schedule
	Choose	Diagnose	Illustrate	Sketch
	Classify	Dramatize	Implement	Solve
	Compute	Employ	Interpret	Use
	Construct	Estimate	Make use of	Utilize
	Contrast	Examine	Manipulate	

From the chart, we can see that our outcome is at the cognitive level "apply."

Step 2: Identify the types of teaching methods aligned to the cognitive levels of your learning outcomes.
- Locate the cognitive level of your first learning outcome on Chart 2: "Teaching Methods Found to Be Effective for Helping Students Achieve Different Learning Outcomes," by Linda Nilson. Select methods from among those at the cognitive level.
  - Note: An X on the chart indicates that this method can help students achieve this learning outcome if the method is properly implemented to serve this outcome. An [a] means the method could be well aligned depending on the lecture-break tasks, the discussion questions, or the group tasks assigned.

o   Example:

Outcome Method	Remember	Understand	Apply	Analyze	Evaluate	Create
Lecture	X					
Interactive lecture	X	X	a	a	a	a
Recitation	X	X				
Directed discussion		X	a	a	a	a
Writing/speaking exercises		X	X	X	X	X
Classroom assessment techniques		X	X	X	X	
Group work or learning		X	a	a	a	a
Student-peer feedback		X		X	X	
Cookbook science labs		X	X			
Just-in-time teaching	X	X				
Case method			X	X	X	X
Inquiry based or inquiry guided	X [b]	X	X	X	X	X
Problem-based learning	X [b]		X	X	X	X
Project-based learning	X [b]	X	X	X	X	X
Role plays and simulations		X	X	X	X	
Service learning with reflection			X	X	X	X
Fieldwork/clinicals	X		X	X	X	X

Here we can see that the highlighted methods are aligned to the cognitive level "apply." To help students work toward achieving this learning outcome, I will have them complete a group scavenger hunt in which they look through the MLA manual to find answers to a series of citation questions. Then students will complete multiple writing exercises—from short papers to their term paper, all including multiple drafts—that will allow them to practice citing research.

Step 3: Identify the teaching moves and student activities aligned to the cognitive levels of your learning outcomes.

- Locate the cognitive level of your first learning outcome on Chart 3: "Effective Teaching Moves by Learning Outcome," by Linda Nilson. Select teaching moves and activities from among those at the cognitive level.
    o   Example:

Apply	• Give multiple examples of a phenomenon that are meaningful to students. • Define the procedures for use, including the rules, principles, and steps. • Provide the vocabulary and concepts related to procedures. • Explain steps as they are applied.	• Generate new examples and nonexamples. • Paraphrase the procedures, principles, rules, and steps for using or applying the material. • Practice applying the material to problems or situations to gain speed, consistency, and ease in following the problem-solving steps.

• Define the contexts, problems, situations, or goals for which given procedures are appropriate. • Explain the reasons that procedures work for different types of situations or goals. • Ensure students' readiness by diagnosing and strengthening their command of related concepts, rules, and decision-making skills. • Provide broad problem-solving methods and models. • Begin with simple, highly structured problems; then gradually move to more complex, less structured ones. • Use questions to guide student thinking about problem components, goals, and issues. • Give students guidance in observing and gathering information, asking appropriate questions, and generating solutions.	• Solve simple, structured problems, then complex, unstructured ones. • Practice recognizing the correct use of procedures, principles, rules, and steps with routine problems, then complex ones. • Demonstrate the correct use of procedures, principles, rules, and steps with routine problems, then complex ones.

Some teaching moves I might use for this learning outcome are:

- Define the procedures for use, including the rules, principles, and steps.
    - I can give students a brief tutorial on how to use the manual to find the MLA information they are looking for and how to navigate specific websites that provide information that is not included in the manual.
- Use questions to guide student thinking about problem components, goals, and issues.
    - After students complete the group scavenger hunt, I can ask them specific questions about how they approached finding answers to the questions and why they might take similar or different approaches in the future. I can also ask them apply some of the MLA rules they found to their short papers or their term paper.
- Give students guidance in observing and gathering information, asking appropriate questions, and generating solutions.
    - I can organize a lab day during which students can conduct research for their papers and ask me any challenging questions about citing sources in MLA format. I can show them where

they can find the answers to their questions in the manual or on websites.

Follow this same process for all of the learning outcomes in your course. As you do so, you may come across learning outcomes with action verbs that fall under multiple cognitive levels, action verbs that are not included in Chart 1, or multiple action verbs in a single learning outcome. The following chart outlines how to address each of these more complex instances.

Scenario	Action
The action verb in my learning outcome falls under multiple cognitive levels.	Think about the underlying purpose of the learning outcome. What do you want students to know and be able to do? Select the cognitive level that best aligns with the purpose of your outcome.
The action verb in my learning outcome is not included in Chart 1.	Find an action verb in Chart 1 that is the closest synonym to the action verb in your learning outcome. Use the synonym to determine the cognitive level of your learning outcome.
My learning outcome contains multiple action verbs.	One option is to simplify the learning outcome. If a single verb is well aligned with what you want students to be able to do, you can simplify your learning outcome without losing any intended learning. However, if you want students to complete multiple actions, you should keep both action verbs. Review the teaching methods aligned to the cognitive levels of your action verbs in Chart 2. You will likely be selecting multiple teaching methods for each learning outcome even if it is at a single cognitive level, so it is not uncommon to select multiple teaching methods that fulfill multiple cognitive levels or a single teaching method that fulfills multiple cognitive levels. As you can see from Chart 2, most teaching methods are aligned to more than one cognitive level.