

# BACKWARD DESIGN

Writing Learning Objectives

## BACKWARD LESSON DESIGN

What are some of the challenges (**situational factors**) that you must take into account when designing lessons for your class?

**Situational Factors:**

- Student motivation
- Face-to-face vs. online
- Lecture vs. lab
- Physical space
- Content misconceptions
- Student academic rank

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

## BACKWARD LESSON DESIGN

Content in short segments separated by assessments

SWBAT (students will be able to); learning objectives should be measurable and include both higher- and lower-order examples

Low stakes formative assessments and high stakes summative assessments (exams) linked to learning objectives

Situational Factors (e.g., class size, student motivation, classroom characteristics, physical space, technology)

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## LESSON DESIGN RUBRIC

Five categories, 10 items

- Learning objectives
- Assessment and Feedback
- Resources and Materials
- Instructional Strategies
- Alignment

## EFFECTIVE LEARNING OBJECTIVES

- Objectives should focus on the students, not the instructor.**
  - Teacher-focused goal: List of topics to be discussed in class
  - Student-focused goal: List of learning goals or objectives
- What students will be able to do? (SWBAT)**
  - What will students have learned or be able to do by the end of the lesson that they don't know/can't do now?
- Objectives should clearly demonstrate student learning.**
  - Learning should be visible, measurable. Include an action term (e.g., *identify, explain, analyze, sketch, summarize*) that requires students do something.
  - Lesson learning objectives should be limited and specific.

<http://serc.carleton.edu/NAQT/Workshops/coursedesign/tutorial/goals.html>

## EFFECTIVE LEARNING OBJECTIVES

- Include at least one learning objective that focuses on higher order thinking skills and/or authentic tasks**
  - For example: Verbs that reflect tasks involving higher order thinking skills objectives include *derive, predict, analyze, design, interpret, synthesize, formulate, plan, correlate, evaluate, create, critique and adapt.*
- Find a balance between specificity and generality.**
  - Make objectives concrete and clear and appropriate for assessment.
- Objectives should be appropriate for both students and instructors.**
  - Account for student preparation and experience and instructor workload.

<http://serc.carleton.edu/NAQT/Workshops/coursedesign/tutorial/goals.html>

## Learning Objectives Activities

### 1. Complete the Assessing Learning Objectives Activity.

Identify if the goal is:

- Student or teacher-focused?
- Measurable or not?
- Involving higher- or lower-order thinking?
- Involving concrete or abstract concepts?

Compare choices with others at your table.  
Identify any objectives with a range of responses.

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## KNOWLEDGE SURVEY

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

- A. I have never heard of BT
- B. I have heard of BT but can't explain much about it.
- C. I can name the six categories of BT.
- D. I can classify exercises into the six BT categories.
- E. I can make up questions representative of the six categories of BT.

## Learning Objectives Activities

### 2. Complete the Bloom's Taxonomy Action Verbs Learning Objectives Activity.

Review the learning objectives and use the table of Action Verbs to identify it's Bloom's level. Note which category is represented by each objective.

- Knowledge (K)
- Comprehension (C)
- Application (Ap)
- Analysis (An)
- Synthesis (S)
- Evaluation (E)

Compare choices with others at your table. Identify any objectives with a wide range of responses.

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## Write Learning Objectives

### 3. Think about the topic you selected earlier. Write three learning objectives for a lesson on this topic. (It would account for material discussed in one class period.)

Work in small teams. Review each other's work and offer suggestions. Post learning objectives under your names on dedicated team web page linked to workshop.

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## DAY 1 WORKSHOP OBJECTIVES

How confident are you that you are able to:

1. Describe the characteristics of discipline-based education research (DBER)
2. Summarize some key findings of DBER
3. Explain what we mean by the term "active learning"
4. Discuss how we measure the degree of reformed teaching (including active learning) in the geosciences
5. Identify the key steps in the Backward Design process
6. Create usable learning objectives for a class lesson

## DAY 1 WRAP UP

Share examples of learning objectives

Day 2 – Assessment!

Reflection Activity

- What was the most interesting thing you learned today?

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