Learning Objectives and Outcomes

Level 1: Foundations
Graduate Teaching and Learning Program
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LEARNING OBJECTIVES

Equip participants with an understanding of the difference between learning objectives and outcomes and how they function at various levels of course design and delivery

Introduce Bloom’s Taxonomy as a essential tool in designing learning outcomes

Equip participants with a step by step process for creating learning outcomes

Provide participants the opportunity to practice the skill of development learning outcomes

"Education is not the learning of facts. It is rather the training of the mind to think" (Alberta Einstein)
Write, Pair, Square, Share

Introduce yourselves before discussing the prompts.

What do you know about learning objectives?

Are learning objectives different from learning outcomes? If so, how?

Formative Pre-Assessment
LEARNING OUTCOMES

By the end of this session, participants should be able to:

**Explain** the difference between course objectives and outcomes

**Describe** how outcomes function at the level of the course and lesson

**Describe** the principle of backwards design

**Discuss** how outcomes are useful for students and instructors

**Explain** Bloom’s Taxonomy of Learning and describe how it supports outcomes

**Describe** the steps for writing SMART outcomes

**Evaluate** learning outcome exemplars

**Create** two SMART outcomes for a lesson plan
Learning [course/lesson] outcomes are statements that indicate “what a learner is expected to know, understand/or be able to demonstrate after the completion of the learning process.”

(Kennedy et. All, 2006, p. 6)
<table>
<thead>
<tr>
<th>COURSE OBJECTIVES</th>
<th>COURSE OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand fundamental principles, theories of X</td>
<td>Students will demonstrate knowledge of fundamental principles, theories by <strong>APPLYING</strong> them to case studies.</td>
</tr>
<tr>
<td>Students will learn factual knowledge about X (e.g. terms)</td>
<td>Students will correctly <strong>USE</strong> terms and <strong>EXPLAIN</strong> their meaning</td>
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<tr>
<td>Broad description of what will be learned</td>
<td>Measureable/observable skills, knowledge, competencies demonstrated at the end of a learning process</td>
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If you want students to “find a lifetime of joy in continued learning, about your subject, you need to translate those dreams into explicit goals for the course you teach.”

L Dee Fink, Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses, 2013, 81
SESSION LEARNING OUTCOMES

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**Create** two SMART outcomes for a lesson plan
Broad description of content, main goals

Measurable/observable skills, knowledge, competencies

Course Objectives

Course Outcomes

Lesson Outcomes

1-4 (Caution!)

5-8

Specificity

https://resources.depaul.edu/teaching-commons/teaching-guides/course-design/Pages/course-objectives-learning-outcomes.aspx
In your “square” groups

Why are learning outcomes useful for instructors and students?

Formative Pre-Assessment
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LEARNING OUTCOMES

THE GUIDING LIGHT FOR INSTRUCTORS

• Focused, strategic, purposeful
  • Content selection
  • Teaching approach
  • Active learning activities
  • Development of instructional materials
• Fair, strategic grading and assessment
• Decreased instructor frustration
• Fewer grade complaints/appeals
LEARNING OUTCOMES

THE GUIDING LIGHT FOR STUDENTS

- Students have a clearer understanding of
  - Course/lesson expectations
  - Assessment strategies and underlying motivation
  - How to gauge, reflect upon, self-direct learning (metacognition)
- Student motivation Increases
- Quality of student performance increases
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BACKWARDS DESIGN

Content  
Skills, Knowledge, Attitudes  
Course Outcomes  
Lesson Outcomes

https://teachingcommons.stanford.edu/resources/course-preparation-resources/course-design-aids/designing-courses-backwards
BOPPS LESSON PLANNING TEMPLATE

- Bridge/hook
- [Learning ] Outcomes
- Pre-assessment
- Participatory learning
- Post assessment
- Summary
What should students know/be able to do at the end of the lesson?

What skills/knowledge/competencies should they develop/apply/demonstrate during & after course?

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BLOOM’S TAXONOMY OF LEARNING
(1956, REV. 2001)

Framework for categorizing educational goals
Classifies forms and levels of learning
THREE DOMAINS (KSA)

Cognitive: skills, knowledge
  Mental abilities

Psychomotor: physical skills
  Movement, coordination, manipulation, dexterity, grace, strength, speed

Affective: attitudes
  How we deal with emotional domain (feelings, values, appreciation, enthusiasms, motivations, attitudes)

Bloom’s Taxonomy of Educational Objectives, Teaching and Educational Development Institute, The University of Queensland, 1996, https://kaneb.nd.edu/assets/137952/bloom.pdf, Accessed 27 August 2018
COGNITIVE DOMAIN (KNOWLEDGE)

Higher Order Thinking

- evaluation
- synthesis
- analysis
- application
- comprehension
- knowledge

Lower Order Thinking

- understanding
- applying
- analysing
- evaluating
- remembering

Nouns

Verbs

Original Taxonomy, 1956
Revised Blooms, 2001

Schultz 2005

BLOOM’S TAXONOMY OF LEARNING (Cognitive Domain)

Revised

- **Remember**
  - Recall facts and basic concepts
    - define, duplicate, list, memorize, repeat, state

- **Understand**
  - Explain ideas or concepts
    - classify, describe, discuss, explain, identify, locate, recognize, report, select, translate
  - Use information in new situations
    - execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

- **Apply**
  - Draw connections among ideas
    - differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test
  - Justify a stand or decision
    - appraise, argue, defend, judge, select, support, value, critique, weigh

- **Evaluate**
  - Produce new or original work
    - design, assemble, construct, conjecture, develop, formulate, author, investigate

- **Create**
PSYCOMOTOR DOMAINT (SKILLS)

Higher Order Thinking

- Naturalisation
- Articulation
- Precision
- Manipulation

Lower Order Thinking

- Imitation

Automated, unconscious mastery of activity and related skills at strategic level

Adapt and integrate expertise to satisfy a non-standard objective

Execute skills reliably independent of help

Reproduce from instruction or memory

Copy actions, observe and replicate

Bloom's Taxonomy of Educational Objectives, Teaching and Educational Development Institute, The University of Queensland, 1996, https://kaneb.nd.edu/assets/137952/bloom.pdf, Accessed 27 August 2018
Open to experience/idea, willing to hear

Get involved in or participate actively

Showing definite involvement /commitment to behaviours

Values become systematic, can compare & contrast values and choices, begins to order & prioritize values, chooses to commit to certain values

Acts consistent due to internal belief, can articulate a philosophy or world view, can break down complex situations, & respond accordingly based on values, develops & lives by code of personal behaviour

Bloom’s Taxonomy of Educational Objectives, Teaching and Educational Development Institute, The University of Queensland, 1996, https://kaneb.nd.edu/assets/137952/bloom.pdf, Accessed 27 August 2018
Bloom’s taxonomy allows the instructor to create precise learning outcomes that indicate level of thinking and domain
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THE “HOW TO” OF OUTCOMES

• Consider your learners and the teaching context
• Focus on (measurable) student performance
• Keep one outcome (verb) for each statement
• Target specific levels and/or domains of Bloom’s Taxonomy
• Avoid verbs that represent actions/concepts that are difficult to measure or are vague
ALIGN outcomes to teaching strategy, content, and active learning activities, and assessment (formative and summative)
SMART OUTCOMES

S - Specific and student focused

M - Measurable/observable in terms of student success

A - Attainable by students

R - Relevant to the focus of the course or lesson

T - Timeframe for achieving outcome is realistic

Lesson Outcome: By the end of lesson, students should be able to differentiate the symphonic styles of Beethoven and Haydn.
LESSON OUTCOMES EXEMPLAR: CLASSICAL SYMPHONY

Content

- Classical Style
- Beethoven’s 3rd Symphony
- Haydn’s Symphony No. 104

Skills, Knowledge, Attitudes

- Identify
- Compare & contrast
- Differentiate
- Justify

Lesson Outcomes

- Explain (& illustrate) the 4 movement structure
- Identify symphony as a genre & movement number upon hearing
- Using as examples, compare & contrast the compositional approach to the symphony
- Differentiate between composers upon hearing
- Justify listening observations with evidence

https://teachingcommons.stanford.edu/resources/course-preparation-resources/course-design-aids/designing-courses-backwards
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YOUR TURN

In pairs
1. Evaluate whether each lesson outcome meets the SMART criteria and why/why not.
2. Choose **ONE** and improve it.

- By the end of the lesson, students will be introduced to the fundamental concepts of fluid dynamics. **Objective not an outcome**
- By the end of the lesson, students will appreciate the awesome power of nature. **Not measurable**
- By the end of the lesson, students will have a deeper appreciation of literature and literary movements in general. **Not attainable or measurable**
- By the end of the lesson, students will understand a range of art historical issues. **Not measurable**

Examples taken from: [http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/goals_practice.html](http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/goals_practice.html)
Some Better Examples

Topic: Local Government

By the end of the lesson, students will be able to: 1) identify the components of local government, and 2) will be able to generate 4-6 sentences using local government facts and vocabulary.

Topic: Patterns of Digestion

By the end of the lesson, students will: 1) know how to physically point out areas of the digestion track, and 2) recall specific facts about how the food we eat can turn into fuel for the body.

Topic: Homeostasis

By the end of the lesson, students will be able: 1) explain what is meant by “homeostasis,” and 2) give 2 examples of how the systems of the body contribute to homeostasis.

Examples taken from:
https://studylib.net/doc/8669420/biology-103-lecture-objectives-unit-1----test-1-chapters-1
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BIKING THROUGH CAMPUS

Scenario: You are teaching a course for new students on how to bike through the UofA campus. Your objectives for the course include developing their understanding of bike safety, maintenance and navigating the campus. Students have basic riding skills, but have varying degrees of understanding in these topics.
BIKING THROUGH CAMPUS

In groups of 2 or 3, create **TWO** learning outcomes for a lesson plan in ONE of the content areas given below. Target specific levels and/or domains of Bloom’s Taxonomy. Ensure your outcomes are SMART. Choose a representative to share your results.

- Safety
- Bike maintenance
- Navigating campus
- Biking etiquette

*Formative Post-Assessment*
WHAT ARE YOUR QUESTIONS?
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Register in Level 1:

tinyurl.com/Register-Level1