Faculty Development Workshop
Presented by
Mary Frances Ypma-Wong, Ph.D.
Creating Learning Objectives

Beginning with the end in mind.....

Created by Mary Frances Ypma-Wong, Ph.D. along with the Student/Faculty Teaching Enrichment Task Force
Learning Objectives for Today

- Explain the difference between course goals and learning objectives.
- List who benefits and how they benefit from learning objectives.
- List four steps of backward design.
- Describe “best practice” in writing learning objectives.
- Review and improve sample learning objectives.
Goals of a course are linked to the course description. These are broad educational statements.

Specific, measurable objectives tell what the learner will be able to do after completion of the class session, unit, or course.
Objectives help teachers

- communicate their expectations.
- select essential content.
- design appropriate activities and assessments.

Objectives help students

- understand what they should “get out of” and “put into” a course.
- take useful notes.
- study efficiently.
By knowing where you intend to go, you increase the chances of you and the learner ending up there..
Standard Course Planning vs. Backward Design

- Choose textbook
- Write syllabus
- Write/Revise lectures
- Prepare PowerPoints
- Write exams/problem sets

Instructor centered

Formulate broad learning goals
Set specific learning objectives
Design assessments (formative & summative)
Develop learning activities (lectures, homework, etc.)

Student centered


Rob Lue, NE SI, 2011
Assessment Learning Cycle

1. Define intended learning objectives
2. Measure selected learning outcomes
3. Compare outcomes with intended objectives
4. Redesign program to improve learning
Also....

Allow UCISOM to create question banks with questions tagged to learning objectives.

Facilitates UCISOM curriculum mapping (Ilios).
How to Write a Good Objective

1. Use clear words, especially specific verbs.
2. If possible, include:
   - Performance: describe what is the learner expected to be able to do.
   - Conditions: describes the conditions under which a student is able to DO or perform the task.
   - Criterion: clarifies how well the students must perform the task.
Bloom’s Taxonomy

Bloom’s Taxonomy is a description of learning objectives. It is often referenced when discussing curriculum and student assessment.

Bloom's Taxonomy divides educational objectives into three "domains": Cognitive, Affective, and Psychomotor (sometimes loosely described as knowing/head, feeling/heart and doing/hands respectively).
Blooms Taxonomy Clarifies Question Type and Verb Choice for Cognitive Skills

Higher Order Thinking Skills
- Creating
- Evaluating
- Analysing
- Applying
- Understanding

Lower Order Thinking Skills
- Remembering
Action Verbs for creating learning objectives/outcomes

Level 1– Remember
Describe, Define, Identify, Label
List, Locate, Match, Outline

Level 2– Understand
Demonstrate, Interpret, Distinguish,
Explain, Give Examples, Discuss, Estimate,
Predict
Action Verbs for creating learning objectives/outcomes

**Level 3–Apply**
Examine, Carry out, Prepare, Calculate, Manipulate, Judge, Organize, Dramatize

**Level 4–Analyze**
Analyze, Categorize, Classify, Compare, Differentiate, Distinguish, Identify, Diagram
Action Verbs for creating learning objectives/outcomes

Level 5–Evaluate
Defend, Assess, Conclude, Contrast, Critique, Justify, Rate, Support

Level 6–Create
Compose, Construct, Design, Develop, Organize, Prescribe, Propose, Revise
A common guideline for writing learning objectives is known by the acronym SMART.

- **Specific**
- **Measurable**
- **Attainable**
- **Results–Focused**
- **Time–Focused**
Example–Med Micro Lab Exercise
Mary Frances Ypma–Wong, Ph.D.

1. Know why aseptic technique is important.
   Describe two main purposes of aseptic technique.
   (Level 1/Remember)

2. Be able to describe MacConkey and Mannitol Salt agar.
   Distinguish the selective and differential properties of MacConkey and Mannitol Salt agar.
   (Level 2/Understand)
   Predict the growth and appearance of *E. coli*, *S. aureus* and other common organisms on MacConkey and Mannitol Salt agar. (Level 2/Understand)
3. Know what swarming is and why it is important.
   Identify swarming of bacteria on a solid media, list two organisms which swarm and describe why swarming contributes to pathogenicity. (Level 4/Analyze)

4. Be able to streak out bacteria properly.
   When given a mixed sample, be able to streak a plate such that clearly isolated colonies are produced (psychomotor).
Next step--

- Ask a colleague if you met the learning objectives.....

- Textbooks can be useful with this!
Learning Objectives

Immunology– Marian Waterman, Ph.D.

- Describe two types of tumor antigen
- Describe phases of immunosurveillance
- Describe three cell types and four signals in cancer immunosurveillance
- Describe four types of immunotherapy
Describe two types of tumor antigen
- TSA, TAA

Describe phases of immunosurveillance
- Elimination, Equilibration, Escape

Describe three cell types and four signals in cancer immunosurveillance
- Innate (Dendritic, γδ+T cells), Adaptive (CD8+ T cells)
- IFNα,β, IFNγ, IL-12, IL-10

Describe four types of immunotherapy
- Passive, Immunoconjugate, Adoptive, Boost Host
Describe the pharmacokinetic parameters: clearance, apparent volume of distribution, bioavailability, and half-life.

Explain how plasma drug concentration is dependent on the route and schedule of drug administration.

Explain how plasma drug concentration in time depends on clearance and volume of distribution.

Design a dosing schedule to achieve a target plasma drug concentration.
Spondyloarthritides
Geordie Lawry M.D.

1. Describe 4 clinical features of inflammatory back pain (sacroiliitis/spondylitis) and contrast them with the features of mechanical low back pain.

2. Describe 3 radiographic features of ankylosing spondylitis.

3. List the principle nondrug (1) and drug (2) treatments of the axial spinal inflammation in ankylosing spondylitis.

4. List 3 drugs used to treat the peripheral joint inflammation in psoriatic arthritis.

5. Describe and contrast at least 4 clinical features that help differentiate spondyloarthropathies from classic rheumatoid arthritis.
Another way to look at SLO, especially in clinical setting.

- Who will do
- How much
- How well
- Of what
- By when
By the end of their internal medicine clerkship, each third year med student will be able to diagnose and manage common ambulatory medical disorders.
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This objective specifies “who” and “by when” but is vague about what specifically the medical students are to achieve.
By the end of their internal medicine clerkship, each third-year med student will be able to diagnose and manage common ambulatory medical disorders. (p31)

By the end of the internal medicine clerkship (by when) each third-year medical student (who) will have achieved proficiency in the diagnosis and management of hypertension, diabetes… (will do) as measurable by acceptable scores on interim tests and the final. (how well)

And will have seen and discussed with their preceptor, or discussed in a case conference with colleagues (will do) at least one patient with each of the above disorders. (how much)
Questions?

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