Learning Objectives in Medical Education

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Goals

- Broad educational directives
- Overall purpose of course/curriculum
- Criteria against which various curricular components can be judged
Learning Objectives

• An outcome statement of what learners should be able to do following an academic event.

• More specific than goals and structured using a theory of learning classification

• Further refinement of curricular content

• Guides the selection of appropriate instructional methods and assessments
My objectives for today

- TSWBAT distinguish a goal from a learning objective
- TSWBAT identify the main components of a strong learning objective
- TSWBAT categorize learning objectives using a version of Bloom's Taxonomy

http://www.poll_everywhere.com/multiple-choice_polls/oAVVxQf8950XywF
Writing Learning Objectives: 4 Components

1. Audience: SWBAT (The student will be able to)
2. Behavior: Action verb (Bloom’s Taxonomy) should reflect the outcome expectations of the instructor and the complexity of the content
3. Condition: The instruction provided
4. Assessment Criteria - should be measurable

Given [condition], [audience] will be able to [behavior] [assessment criteria].
Examples and Nonexamples:

Poor: To increase the students’ ability to visually identify white cells on a differential.
Better: The student will correctly identify all white cells on a differential.

Poor: The student will gain knowledge of automated chemistry tests.
Better: The student will state the principle for each automated chemistry test.

Poor: The student will be familiar with RBC maturation in the bone marrow.
Better: The student will diagram the maturation of blood cells.

Poor: The student will understand the interpretation of hemoglobin electrophoresis patterns.
Better: Given several electrophoretic scans, the student will correctly diagnose each normal or abnormal pattern.
Example of an Objective with Multiple Parts

After attending the lecture, reading the assignment, & performing the tests in the lab, the students will be able to:
1. Define the term hemolytic anemia.
2. Classify the major hemolytic anemias by etiology (intrinsic, extrinsic).
3. Summarize each disease discussed in lecture including distinguishing characteristics, clinical manifestations, lab findings, pathology, and treatment.
4. For each disease discussed in lecture, determine the appropriate tests to resolve the problem. Include the principle and mechanism of each test in the evaluation.
5. Given a set of laboratory data and patient history, correctly diagnose the disease.

http://www.poll everywhere.com/multiple_choice_polls/f9ZDsAyVfJ3WQUaj
Bloom's Taxonomy of Learning

Original
- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

Revised
- Remembering
- Understanding
- Applying
- Analyzing
- Evaluating
- Creating
The Knowledge Dimension classifies four types of knowledge that learners may be expected to acquire or construct—ranging from concrete to abstract (Table 1).

<table>
<thead>
<tr>
<th>concrete knowledge</th>
<th>conceptual</th>
<th>procedural</th>
<th>metacognitive*</th>
</tr>
</thead>
<tbody>
<tr>
<td>factual</td>
<td>knowledge of classifications and categories</td>
<td>knowledge of subject-specific skills and algorithms</td>
<td>strategic knowledge</td>
</tr>
<tr>
<td>knowledge of specific details and elements</td>
<td>knowledge of principles and generalizations</td>
<td>knowledge of subject-specific techniques and methods</td>
<td>knowledge about cognitive tasks, including appropriate contextual and conditional knowledge</td>
</tr>
<tr>
<td></td>
<td>knowledge of theories, models, and structures</td>
<td>knowledge of criteria for determining when to use appropriate procedures</td>
<td>self-knowledge</td>
</tr>
</tbody>
</table>
Summary:

[Learning] Objectify your learners

Learning objectives:

• Are concerned with students, not teachers.

• Are related to intended outcomes, rather than the process for achieving those outcomes.

• Are specific and measurable, rather than broad and intangible.

• Are targeted at the appropriate level of knowledge and the cognitive process required for the task.
The Anatomy Lesson of Dr. Nicolaes Tulp - Rembrandt van Rijn
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