The Innovative Instructor

Best Practice

Vol. 13 | **December 2015**

What this is

The Innovative Instructor is an article series (https://ctei.jhu.edu/ii) and a blog (https://ii.library.jhu.edu) related to teaching excellence at Johns Hopkins

Article categories

Best Practice
How to use technologies and apply innovative instructional methods

Pedagogy
Hopkins professors share successful strategies for teaching excellence

Technology
Information about emerging technologies, who is using them, and why you should know

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The Center for Teaching Excellence and Innovation partners with faculty, postdocs, and graduate students to extend instructional impact by connecting innovative teaching strategies and instructional technologies

CENTER for **TEACHING EXCELLENCE** & **INNOVATION**

JOHNS HOPKINS UNIVERSITY

Writing Effective Learning Objectives

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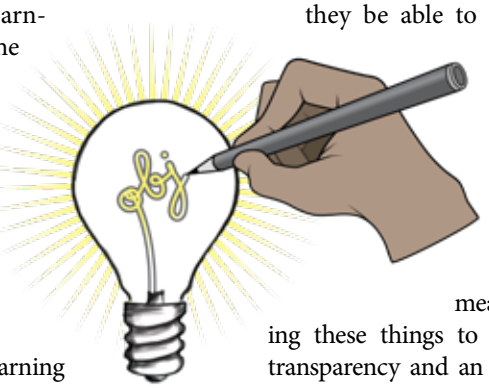
What it is

Effective teaching depends upon effective planning and design. The first step in preparing a high quality course is to clearly define your learning goals, which are the broad, overarching expectations for student learning and performance at the end of your course. (See "Writing Course Learning Goals "in the Innovative Instructor series.) Next is to determine your learning objectives by writing explicit statements that describe what the students will be able to do at the end of each class or course module/unit. This includes the concepts they need to learn and the skills they need to acquire and be able to apply.



Developing learning objectives is part of the instructional design framework known as Backward Design, a student-centric approach that aligns learning objectives with assessment and instruction. (See "Using Backward Design for Course Planning" in the Innovative Instructor series).

Clearly defined objectives form the foundation for selecting appropriate content, learning activities and assessment plans. Learning objectives help you to:

- plan the sequence for instruction, allocate time to topics, assemble materials and plan class outlines.
- develop a guide to teaching allowing you to plan different instructional methods for presenting different parts of the content. (e.g. small group discussions of a common misconception).
- facilitate various assessment activities including assessing students, assessing your instruction, and even assessing the curriculum.

Why does it matter

Think about what a successful student in your course should be able to do on completion. Questions to ask are: What concepts should they be able to apply? What kinds of analysis should they be able to perform? What kind of writing should they be able to do? What types of problems should they be solving? Learning objectives provide a means for clearly describing these things to learners, thus creating transparency and an educational experience that will be meaningful.

How to use it

Following are strategies for creating learning objectives:

I. Use S.M.A.R.T. attributes

Learning objectives should have the following S.M.A.R.T. attributes.

Specific - Concise, well-defined statements of what students will be able to do.

Measurable - The goals suggest how students will be assessed. Start with action verbs that can be observed through a test, homework, or project (e.g., define, apply, propose).

Attainable - Students have the pre-requisite knowledge and skills and the course is long enough that students can achieve the goals/objectives.

Relevant - The skills or knowledge described are appropriate for the course or the program in which the course is embedded.

Time-bound - State when students should be able to demonstrate the skill (end of the course, end of semester, etc.).

II. Use Behavioral Verbs

Another useful tip for learning objectives is to use behavioral verbs that are observable and measurable. Fortunately, Bloom's taxonomy provides a list of such verbs and these are categorized according to the level of achievement at which students should be performing. (See "Bloom's Taxonomy: Action Speaks Louder" in the Innovative Instructor series.) Using concrete verbs will help keep your objectives clear and concise.

Here is a selected, but not definitive, list of verbs to consider using when constructing learning objectives:

assemble, construct, create, develop, compare, contrast, appraise, defend, judge, support, distinguish, examine, demonstrate, illustrate, interpret, solve, describe, explain, identify, summarize, cite, define, list, name, recall, state, order, perform, measure, verify, relate

While the verbs above clearly distinguish the action that should be performed, there are verbs to avoid when writing a learning objective. The following verbs are too vague or difficult to measure:

appreciate, cover, realize, be aware of, familiarize, study, become acquainted with, gain knowledge of, comprehend, know, learn, understand

III. Leverage Blooms Taxotomy

Since Blooms taxonomy establishes a framework for categorizing educational goals, having an understanding of these categories is useful for planning learning activities and writing learning objectives.

Examples of Learning Objectives

At end of the [module, unit, course] students will be able to…

- …identify and explain major events from the Civil War. (American History)
- …effectively communicate information, ideas and proposals in visual, written, and oral forms. (Marketing Communications)
- …analyze kinetic data and obtain rate laws. (Chemical Engineering)
- …interpret DNA sequencing data. (Biology)
- …discuss and form persuasive arguments about a variety of literary texts produced by Roman authors of the Republican period. (Classics)
- …evaluate the appropriateness of the conclusions reached in a research study based on the data presented. (Sociology)
- …design their own fiscal and monetary policies. (Economics)

Additional Resources

- Bloom, B., Englehart, M. Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. New York, Toronto: Longmans, Green.
- Writing learning objectives. http://sites.uci.edu/medsim/files/2015/03/Writing-learning-objectives.pdf

Author's Background

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Richard Shingles is a faculty member in the Biology department and also works with the Center for Teaching Excellence and Innovation at Johns Hopkins University. He is the Director of the TA Training Institute and The Summer Teaching Institute on the Homewood campus of JHU. Dr. Shingles also provides pedagogical and technological support to instructional faculty, post-docs and graduate students.