

## Why Write Objectives?

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When you purchase a new personal computer, small appliance for your kitchen, bicycle for your child, etc. one of the first things you probably do is read the owner's manual and/or the assembly instructions. Reading these materials prior to using your new "whatever" will help insure that you do not inadvertently push the wrong button, plug the printer connection in the wrong port, or assemble a bike that looks more like an abstract sculpture.

Just as the owner's manual and instructions provide you with information which will help you learn to operate your new computer correctly and in the most efficient manner, written objectives for your course can help your students learn more and learn it more effectively. *Effective teaching depends upon (1) how clearly the students understand what they are supposed to learn and (2) how accurately that learning can be measured.* Well-written objectives can give students precise statements of what is expected of them and provide guidelines for assessing student progress.

Learning can occur in  
the absence of Teaching

but

Teaching has not occurred  
if there is no Learning!

Writing objectives to guide and assess student learning is not considered by some instructors to be very important. However, when you apply for a research grant, you must spell out the general and specific goals of the research, indicate the methods you will incorporate to reach those goals, and provide evidence that you are qualified to conduct research in this subject. These then provide guidelines, for you and the funding organization, upon which you will measure the success or failure of your research study. In the same way, you can guide student learning by explaining how this course relates to other courses given in the same department, why the content of the course should be taught, what role this course might lay in the student's general education and life, what particular interest and background you have in the subject, and what they will learn and be able to do after taking the course.

Think about one of the classes you are currently teaching. What would you like for each student to be able to *do* when he/she has completed your course?.....(Take a few

seconds to jot down some of your ideas.) Usually, at the university level we are not concerned simply that the students learn a set of facts. Rather, we hope that they will develop the skills and techniques which will enable them to begin a lifelong learning process. To do this our courses must provide a base of knowledge and skills that will facilitate further learning and present ample opportunities for the students to practice using these skills.

### Types of Objectives\*

Instructional Objectives are specific statements describing what you and your students intend to achieve as a result of instruction. They can be categorized in the following way:

- A. Learning Objectives: Specific statements of instructional intent dealing with content areas that describe what students will do as a result of instruction. There are two types of learning objectives: cognitive and psychomotor.
1. Cognitive Objectives: Emphasis is on knowing, conceptualizing, comprehending, applying, synthesizing, and evaluating. These objectives deal with students' knowledge of the subject matter, and how students demonstrate this knowledge.
  2. Psychomotor Objectives: Physical skills and dexterity are involved; success in instruction involves teaching new skills or coordination of old ones (e.g., physical coordination involved in playing tennis).
- B. Attitudinal objectives: Emphasis is on attitudes, values and emotions.

\*From Writing Learning Objectives, Module #2, *Teaching and Learning: An Individualized Course for Instructors in Higher Education*, Centre for Learning and Development, McGill University, 1977.

### Discriminating Between Learning Objectives and Similar Statements\*\*

More than likely you have been thinking about and probably revising the goals for your classes each time you teach them. However, learning objectives may differ in several ways from the goals you have typically set:

1. The emphasis is on observed activity. The only way you can determine whether or not a student has learned something is to observe some kind of behavior which indicates learning has taken place. This behavior may range from correctly answering multiple-choice questions to requiring that the student actually demonstrate a skill.
2. The emphasis is on student activity. Instructors sometimes state their objectives in terms of their activities -- e.g., "For the first fifteen minutes I'll lecture on cell division." --or in terms of content -- e.g., "Cover mitosis." Learning objectives, however, refer exclusively to student behaviors, not to the behaviors of the instructor.
3. The emphasis is on outcomes. Instructors often state objectives in terms of process or procedure, e.g., "The class will discuss ethical issues concerning genetic control." Learning objectives, however, refer to the end results of instruction. They state what a student will know or be able to do at the end of instruction, not during it.

\*\*From "Behavioral Objectives: A Selected Bibliography and Brief Review," by George L. Geis, ERIC, Stanford University, Stanford, CA, 1972.

### Why Write and Use Learning Objectives?\*\*\*

Writing and using learning objectives has numerous advantages including:

#### 1. Managing Instruction

Objectives may be used by instructors and students to sort and direct learners and learning activities. They may be used for systematic pre-testing, allowing into the course students who demonstrate the required pre-requisite behaviors, redirecting to remedial work those who lack the pre-requisites, skipping ahead those who already have acquired the behaviors which the unit is designed to teach.

#### 2. Managing learning

Whereas management of instruction implies that the control rests with the instructor, management of learning suggests a more active role by the student. Students can use objectives to guide their learning efforts -- choosing appropriate materials, reading selectively, etc. Objectives can also be used for self-evaluation which may direct the student's efforts (e.g., skipping ahead or reviewing).

#### 3. Planning Instruction

Once you have developed a set of objectives for a course you can more rationally sequence instruction, allot time to topics, assemble materials, prepare outlines and booklists, etc. Objectives can also be used as a guide to teaching, as when you plan different instructional methods for presenting various types of content based on the desired learning outcomes (e.g., small-group editing of reports to give students experience in evaluating content logic and correct usage).

A re-examination of course content may result from a look at the learning objectives for the course. After comparing previous examinations with your newly developed learning objectives, you may discover that you have been testing materials which are illustrative, but which are not really essential to the students' mastery of the content/concepts.

#### 4. Enhancing Learning

If the student has a set of learning objectives which provide information about the content to be learned and the way in which he/she will have to demonstrate adequate knowledge, that student can make more appropriate choices about study methods and content emphasis.

#### 5. Facilitating Evaluation

Learning objectives can facilitate various evaluation activities, evaluating students, evaluating instruction, evaluating the curriculum. They can form the basis for grading or for determining levels of competence in a mastery learning system. They can also be used to demonstrate effective teaching by matching student learning, as measured by exams, etc., to the desired outcomes.

#### 6. Aiding in Communication With Others

There is a need to communicate learning objectives to others: between instructor and student, with TAs, with other instructors. For example, exchanging learning objectives within departments is the most specific way to communicate to one's colleagues what you really cover in your course. An objectives exchange might reduce redundancy in the curriculum.

#### 7. Designing or Redesigning Curriculum

If you are setting out to improve instruction in a particular course, you usually begin with the content and generate objectives, new materials, etc., based on that content.

-- Study of the existing curriculum can draw attention to redundancy and omissions which can lead to curriculum revision.

-- Sets of objectives for one course may be compared with the expected entry behaviors for the next course in the sequence. The two should interlock; where they do not, curriculum adjustments can be made.

-- In some areas of vocational and professional education attempts are being made to begin with performance and work backwards to curriculum. Medical education in particular provides many examples of this.

#### 8. Producing New Insights

There is one other benefit that instructional designers talk about but rarely write about. The process of clarifying objectives is said to produce major changes in those who engage in the effort.

For example, instructors who spend time developing learning objectives are said to acquire increased humility about what is a feasible goal. When "global" goals are explicated, scores of specific sub-goals emerge. It often develops that it is not possible to reach all of them and so a hierarchy or "trade-off system" of goals must be produced.

The writing of objectives also focuses attention away from content and onto the students. This re-focusing often produces revisions in teaching methods.

When students are involved in determining objectives they develop an awareness of the difficulties in defining what it is they want to learn and of choosing from among equally attractive options.

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\*\*\*Adapted from Geis, *op. cit.*, 1972.

### **Additional Resources on Writing Learning Objectives**

The use of learning objectives is advocated by numerous experienced faculty members here at U.T. Samples of objectives written by some of these faculty members are available for inspection in the CTE Resource Library.

If you are interested in learning how to write learning objectives the following self-help books are also available in the CTE Library:

- Archer, Patricia (1979). *Writing Higher-Level Learning Objectives: The Cognitive Domain*, New York: Media Systems Corporation.
- Bloom, Benjamin S., et. al. (1956). *Taxonomy of Educational Objectives*, New York: David McKay Company, Inc.
- Mager, Robert F. (1962). *Preparing Instructional Objectives*, Belmont, CA: Lear Siegler, Inc./Fearon Publishers.
- Mager, Robert F. (1972). *Goal Analysis*, Belmont, CA: Fearon Publishers.
- Pascall, Charles and Geis, George (1977) *Writing Learning Objectives, Module #2 (Teaching & Learning Series)*, McGill University.

In addition to the above written resources, the CTE staff members are available to assist you in developing or re-writing the objectives for your courses.