Establishing Criteria for Learner Performance

Criteria are standards. By comparing actual performance against established performance standards, one can determine how competent the performance is. By comparing a completed product against established product standards, one can determine how satisfactory the product is. In a sense, the products of occupational programs are students—students who are prepared to enter and progress in their chosen occupations.

How can you be sure you have produced a high quality cosmetologist, secretary, chef, sales associate, secretary, dental hygienist, or automotive mechanic? In order to be assured of producing a satisfactory product, you need to establish criteria (standards) that define the qualities that should be possessed by learners who meet your lesson objectives, your lesson and course requirements, and the organization's program requirements.

For the most part, these criteria already exist. Your task is not so much one of developing criteria, but rather one of identifying and compiling the standards that have already been established. These criteria may not always be readily apparent, easy to distinguish, or stated as criteria. To locate the criteria, you need to look at five factors:

- societal factors.
- occupational factors.
- institutional factors.
- students' personal factors.
- instructional factors.

You need not, and should not, attempt to identify and establish these criteria on your own. The criteria must be based on real world standards and not on arbitrary, personal standards. You can involve learners, advisory committee members, and other instructors in identifying criteria that can be established for student performance. But remember, the criteria must be realistic and on target. In addition, cooperating with other instructors in establishing criteria ensures that your courses are compatible and interrelate to form a coherent program.

Societal Factors

Society in general has expectations for graduates of its educational and training institutions. Implicit within these expectations are certain standards. For example, society may expect graduates to be contributing citizens of a democratic society. Additionally, society may desire
that graduates be capable of thinking critically, of understanding themselves, or of coping with a changing society.

Society’s expectations represent **broad goals**, which are subject to change as society itself adapts and changes over time. These broad goals are probably not written down in black and white.

However, through your own experiences as a member of this society and through formal and informal contacts with other members of this society, you undoubtedly have a pretty clear picture of what society expects of its secondary and postsecondary schools. Other expectations of which you may not be aware should surface during your instructor training experiences.

Furthermore, at the national level, there are a number of educational bodies such as the U.S. Department of Education (ED), the National Education Association (NEA), the Association of Career and Technical Education (ACTE), the American Society for Training and Development (ASTD) and a number of other associations specific to the various occupational service areas. These organizations also establish broad goals and objectives that, in turn, suggest standards by which schools and colleges should measure their graduates.

**Occupational Factors**

Other standards can be identified by determining what a given occupation (or specific company) requires of its entry-level workers:

- What level of performance at what level of reliability and at what speed does the occupation require for entry-level workers?
- What is the nature of the tasks that the entry level worker will be required to perform?
- What levels of performance, reliability, and speed must be reached to advance in the occupation?

The answers to these questions can be found through reviewing job descriptions, occupational analyses, community surveys, and follow-up studies.

Job descriptions can be located in the Dictionary of Occupational Titles (DOT) and the Occupational Outlook Handbook. These descriptions are quite general, usually just briefly describing what an individual in that job does and knows, and what equipment he or she uses.

Another source of standards is the occupation or **occupational cluster** for which learners are being prepared within your program. Each occupation will usually have some established entry-level standards. The standards may be in the form of licensing requirements for positions within specific occupations (e.g., cosmetologist, aircraft mechanic, dental auxiliary). Licensing requirements include specific standards individuals must meet if they are to be licensed.

**Occupational analyses** give more detailed information. The data in such an analysis are usually gathered by asking workers and supervisors in a particular occupation what tasks are performed on the job. The result is a detailed and lengthy task list. Well-developed analyses will also have criteria stated for each task.
Occupational analyses have been prepared for many jobs listed in the DOT. They can be located through national clearinghouses, such as Virginia's CTE Resource Center.

Other sources of information include (1) the community survey, which generally contains information on what local employers expect of beginning workers, and (2) the follow-up study, which gives information about how well your graduates measure up to existing occupational standards. If the school or college in which you are employed has conducted either a community survey or a follow-up study recently, these can be excellent sources of information.

By reviewing all the sources of licensing and occupational data previously mentioned, you can readily identify the standards specified for students’ entry-level or advancement-level performance.

**Institutional Factors**

The criteria for learner performance will be even further defined by the requirements of the company or institution by which you are employed and its community setting. Members of a community hold certain values, and they generally expect the training and educational institutions within the community to uphold those values and to pass those values on to the learners as part of the training and educational program. Thus, the community sets certain standards.

For example, an urban community may expect that students in a cooperative marketing education program will exhibit specifically defined dress and behavior patterns. A rural area may have different expectations of its marketing education students and, indeed, might object to urban standards as being inappropriate. Community standards tend to become embedded in the standards established by the school. These institutional expectations should, in turn, become part of the standards of performance you set for your learners.

Further criteria can be derived from certain requirements set by the company, school or college itself. Institutional policies will usually specify standards covering the following areas:

- How often must the level of learner performance be reported?
- What symbols should be used in reporting the level of performance (e.g., percentages, letter grades, pass/fail, written evaluations)?
- What level of performance is represented by a certain grading symbol (e.g., A = 95%-100%)?
- How many credit hours must a student earn to graduate from a given program?
- How many credit hours are assigned to each course or unit of study (e.g., set of competencies)?
- Which courses or competencies are required for graduation and which are electives?
- Are the standards for learners to be absolute (criterion-referenced) or relative to the achievement of other learners (norm-referenced)?
• Is learner effort or growth in knowledge and skill to be considered in establishing criteria?

There are other institutional factors related to the more physical constraints of the company, school or college: time, facilities, and personnel. The standards you establish for learner performance must be realistic in terms of the number of staff, amount of time, and facilities available.

In addition, the quality of equipment and level of competency of the occupational program staff members will have to be considered in establishing criteria. You cannot, for example, expect a machine shop student to achieve a high level of accuracy on a worn-out lathe or a dental auxiliary student to be able to place a filling if that skill is beyond the instructor.

**Learners' Personal Factors**

As might be expected, when you begin to establish criteria for learner performance, you need to consider the needs, interests, and abilities of the learners you will be teaching. The level of competence acquired to date by the learners entering your course or program will also directly affect the criteria you establish. The level of learner competence does not change the occupational standards set for the program, but it can affect the amount of time you allow for students to reach these standards or the number of objectives you expect learners to meet.

For example, suppose criteria for learner performance are established that assume that entering learners have a background in basic math. If you find that learners do not have this background, then those criteria must be modified to take this into account.

In addition, learners' career goals should be considered. The criteria you establish should be set at a level that allows learners to reach their goals. Some of your learners may plan to enter the job market through suboccupations. Others may wish to be fully trained journeymen or technicians upon graduation. These goals should be recognized, and criteria should be set accordingly. If your standards fall below, or far exceed, the learners required in the occupations for which your learners are being trained, then these standards should be changed.

Learners' needs, interests, abilities, and career goals can be identified through a number of sources. Administering standardized tests, reviewing cumulative records, and discussing career goals with learners on a formal and informal basis are all excellent devices for locating such information.

**Instructional Factors**

You probably have noticed that the factors discussed so far have become increasingly more specific—from the broad goals of society to the specific qualities of your learners. The instructional factors determine the most specific criteria: program criteria; course, unit, and lesson criteria; or learning module criteria.

As you attempt to establish criteria, it is important to consider the broad factors, such as societal goals, because the more specific criteria must be consistent with these broader purposes.
However, it is the criteria you establish at the instructional level that are generally the most specific and are the factors over which you have the most control as an instructor.

Ideally, an occupational program will be structured around a set of learner performance objectives that represent required competencies or skills (for entry and/or advancement) in an occupation, job or occupational cluster. As mentioned previously, these competencies can be identified through an occupational analysis.

Assume that for a given program, 60 competencies are identified. In a competency-based program, these competencies would be translated into specific student performance objectives, which are often then used as a basis for the development of individualized learning modules.

In a conventional program structure, the competencies would first be divided and grouped into courses, depending on the length of the program, the logical clustering of competencies, and the logical sequence of competencies. Finally, very specific learner performance objectives covering particular tasks would be developed to shape unit and daily lesson plans.

Performance Objectives for Lessons. Criteria, or standard, is one of the three components of a performance objective. The other two are the behavior, sometimes called the “task”, and the conditions, sometimes referred to as the “givens”. In short, the performance objective consists of the behavior, the conditions under which the student must perform the behavior, and the criteria that used to measure success. Look at this performance objective:

Given a box of Betty Crocker cake mix, eggs, water, mixing bowl and spoons, measuring cup, baking pans, toothpick, and a fully equipped kitchen, bake a cake, according to the instructions on the back of the cake mix box.

The Behavior is: “bake a cake”

The Condition is: “Given a box of Betty Crocker cake mix, eggs, water, mixing bowl and spoons, measuring cup, baking pans, toothpick, and a fully equipped kitchen”

The Criteria is: “according to the instructions on the back of the cake mix box.”

Each learner performance objective, if well stated, will contain a criterion component. The criterion component of a well-stated learner performance objective outlines the level of achievement the learner must attain in order to satisfactorily complete that performance under the conditions outlined.

Criteria describe the minimal level of performance that can be accepted. Different types of criteria apply to different types of performance. These standards may be measures of speed or accuracy, they may be specifications about how a task should be performed, or they may reflect the consequences that should be avoided or brought about through the action. Whatever standards are used, they should be realistic and should reflect job performance standards. The standards in the objectives are the standards to be used in evaluating the trainee’s mastery of the objective.
Some activities have to be carried out within a certain amount of time. The **speed standard** is used in these cases, as in the example below of an emergency room laboratory technician:

Analyze a blood sample for type and white blood cell count **within 7 minutes**.

For many tasks, the **accuracy or precision** with which the task is performed provides the standard of performance. Accuracy may be the standard for the performance of physical operations, mathematical determinations, or instrumentation readings. Accuracy may be expressed as a specified range of values or as a percent deviation from an accepted or "true" value. Here is an example where an acceptable level of accuracy is given for a physical operation:

Align the valves in a seal water system, under factory conditions, **to provide 18-20 psi at the pump seal**.

The objective tells us clearly that the pressure at the pump seal must be "18-20 psi."

The next example specifies the precision with which the result of a mathematical operation should be stated:

Given three samples of specific gravity problems, calculate them **to three decimal places**.

Another type of standard of performance is per specification. **Specifications** can refer to the sequence in which a task must be done or to manufacturers' technical specifications for the operation or repair of equipment. The examples below show both types of specifications:

Without assistance, state **in chronological order** the normal procedures for startup of the main power distribution system.

Repair a Corning Model 5 pH meter, with a specified malfunction, **so that it operates within technical specifications as stated on page 5 of the technical manual**.

If the **successful performance of a task** either causes or prevents something from happening, consequences may be used as a measure of how detailed a report to a supervisor needs to be:

Placed in an operational environment, report abnormal safety conditions to a supervisor **in sufficient detail so that appropriate actions can be taken immediately**.

Sometimes the performance of a task is subject to **more than one standard**. In these cases there is more than one part to the standards component. This objective uses speed and accuracy as standards of performance:

For a sample from the liquid poison tank, measure all the quantities listed below **within 30 minutes**. Each result should be **no further than specified from the value below**:

a. **Specific gravity, within 0.001**
b. **pH, within 0.1**
c. **Volume of NaOH titrant, within 0.5 ml**.

The standard for speed is expressed in terms of time, "within 30 minutes." The standard for accuracy is expressed in decimal values: "within 0.001," "within 0.1," and "within 0.5 ml."
Program and Course Objectives:

Thus, program or course performance objectives should include criteria describing the level of achievement learners must reach to complete (and pass) the program or course successfully. For example, a conventional business education program designed to train persons to be employed at the Clerk Typist III level, might include the following criteria:

- **Program Criteria**: (1) The minimum number of words to be typed per minute is 60, (2) the complexity of the material is to be straight manuscript typing, and (3) there are to be a maximum of three errors in a five-minute test.

- **Course Criteria**: At the end of the first course, students will be able to type (1) 35 words per minute, (2) of straight manuscript typing, (3) with six or less errors in a five-minute test.

- **Unit Criteria**: The student will be able to locate the position of (1) all letters and symbols on a standard typewriter keyboard, (2) with 100 percent accuracy.

- **Lesson Criterion**: Type a given combination of letters **20 times without error**.

In some organizations, the objectives and criteria for all these levels will have been predetermined. In others, the program and course objectives and criteria will have been established, and you will expect to generate unit, lesson, or learning module objectives and criteria from those broader objectives.

In still other organizations or schools, you will be expected to assist in the development of the objectives and criteria at all levels. Regardless of who establishes these learner performance objectives, once they are established, the criteria within them become part of your overall criteria for learner performance.

It should be noted that, if you are involved in a competency- or performance-based learning program, it should be especially easy to locate the instructional criteria. One of the key features of such programs is that criteria are spelled out in advance for each skill identified, and these criteria are made public to learners and interested others. In competency-based instruction, objectives are made known to learners at the beginning of instruction so they will know how well they must perform at the end of instruction.

At this point, you should have the information you need to develop the detailed list of criteria for student performance that you will use in your teaching.

These criteria then serve as a basis for later decisions you will make regarding such questions as the following:

- What kinds of data need to be collected?
- At what points should data be collected?
- What kinds of testing techniques and devices will be used?
Summary

To summarize, the purposes of establishing criteria for student performance are:

1. to ensure that students attain the required occupational competencies.
2. to provide the basis for continual-periodic and final-evaluation of the progress students are making toward development of these competencies.