

BEHAVIORAL OBJECTIVES? YES!

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FEW people who are professionally concerned with education in the United States are unacquainted with "behavioral objectives." Knowledge of this term and its meaning has become widespread. It is therefore timely to pose a question which inquires about the need for behavioral objectives, the possible uses they may have, and the educational functions that may be conceived for them.

Nature of Instructional Objectives

The statement of a behavioral objective is intended to communicate (to a specified recipient or group of recipients) the outcome of some unit of instruction. One assumes that the general purpose of instruction is learning on the part of the student. It is natural enough, therefore, that one should attempt to identify the outcome of learning as something the student is able to do following instruction which he was unable to do before instruction. When one is able to express the effects of instruction in this way, by describing observable performances of the learner, the clarity of objective statements is at a maximum. As a consequence, the reliability of communication of instructional objectives also reaches its highest level.

To some teachers and educational scholars, it appears at least equally natural to try to identify the outcomes of learning in terms of what capability the learner has

gained as a result of instruction, rather than in terms of the performance he is able to do. We therefore frequently encounter such terms as "knowledge," "understanding," "appreciation," and others of this sort which seem to have the purpose of identifying learned capabilities or dispositions. Mager (1962) and a number of other writers have pointed out the ambiguity of these terms, and the unreliability of communications in which they are used.

Actually, I am inclined to argue that a complete statement of an instructional objective, designed to serve all of its communicative purposes, needs to contain an identification of *both* the type of capability acquired as a result of learning, and also the specific performance by means of which this capability can be confirmed (cf. Gagné, 1971a). Examples can readily be given to show that perfectly good "behavioral" verbs (such as "types," as in "types a letter") are also subject to more than one interpretation. For example, has the individual learned to "copy" a letter, or to "compose" a letter? The fact that no one would disagree that these two activities are somehow different, even though both are describable by the behavior of "typing," clearly indicates the need for descriptions of what has been learned which

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include more than observable human actions. Complete instructional objectives need to identify the capability learned, as well as the performance which such a capability makes possible.

The implications of this view are not trivial. If in fact such terms as "knowledge" and "understanding" are ambiguous, then we must either redefine them, or propose some new terms to describe learned capabilities which can be more precisely defined. My suggestion has been to take the latter course, and I have proposed that the five major categories representing "what is learned" are motor skills, verbal information, intellectual skills, cognitive strategies, and attitudes (Gagné, 1971b). Completing the example used previously, the statement of the objective would be "Given a set of handwritten notes, *generates* (implies the intellectual skill which is to be learned) a letter *by typing* (identifies the specific action used)."

The alternatives to such "behavioral" statements have many defects, as Mager (1962) and other writers have emphasized. However they may be expanded or embellished, statements describing the *content* of instructional presentations invariably fail to provide the needed communications. The fact that a textbook, or a film, or a talk by a teacher, presents "the concept of the family" is an inadequate communication of the intended learning outcome, and cannot be made adequate simply by adding more detail. The critical missing elements in any such descriptions of instruction are the related ideas of (a) what the student will have learned from instruction, and (b) what class of performances he will then be able to exhibit.

Uses of Behavioral Objectives by Schools

Statements describing instructional objectives have the primary purpose of *communicating*. Assuming that education has the form of an organized system, communication of its intended and actual outcomes is necessary, among and between the designers of instructional materials, the planners

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of courses and programs, the teachers, the students, and the parents. In order for the process of education to serve the purpose of learning, communications of these various sorts must take place. When any of them is omitted, education becomes to a diminished degree a systematic enterprise having the purpose of accomplishing certain societal goals pertaining to "the educated adult." There may be those who would argue that education should not serve such goals. Obviously, I disagree, but cannot here devote space to my reasons.

Some of the most important ways in which the various communications about objectives may be used by schools are indicated by the following brief outlines:

1. *The instructional designer to the course planner.* This set of communications enables the person who is planning a course with predetermined goals to select materials which can accomplish the desired outcomes. For example, if a course in junior high science has the goal of "teaching students to think scientifically," the planner will be seeking a set of materials which emphasize the learning of intellectual skills and cognitive strategies, having objectives such as "generates and tests hypotheses relating plant growth to environmental variables."

In contrast, if the goals of such a course are "to convey a scientific view of the earth's ecology," the curriculum planner will likely seek materials devoted to the learning of organized information, exhibited by such objectives as "describes how the content of carbon dioxide in the air affects the supply of underground water."

2. *The designer or planner to the teacher.* Communications of objectives to the teacher enable the latter to choose appropriate ways of delivering instruction, and

also ways of assessing its effectiveness. As an example, a teacher of foreign language who adopts the objective, "pronounces French words containing the uvular 'r,'" is able (or should be able) to select a form of instruction providing practice in pronunciation of French words containing "r," and to reject as inappropriate for this objective a lecture on "the use of the uvular 'r' in French words."

Additionally, this communication of an objective makes apparent to the teacher how the outcome of instruction must be assessed. In this case, the choice would need to be the observation of oral pronunciation of French words by the student, and could not be, for instance, a multiple-choice test containing questions such as "which of the following French words has a uvular 'r'?"

3. *The teacher to the student.* There are many instructional situations in which the learning outcome expected is quite apparent to the student, because of his experience with similar instruction. For example, if the course is mathematics, and the topic changes from the addition of fractions to the multiplication of fractions, it is highly likely that the naming of the topic will itself be sufficient to imply the objective.

However, there are also many situations in which the objective may not be at all apparent. A topic on "Ohm's Law," for example, may not make apparent by its title whether the student is expected to recognize Ohm's Law, to state it, to substitute values in it, or to apply it to some electric circuits. It is reasonable to suppose that a student who

knows what the objective is will be able to approach the task of learning with an advantage over one who does not.

4. *The teacher or principal to the parent.* It is indeed somewhat surprising that parents have stood still for "grades" for such a long period of time, considering the deplorably small amount of information they convey. If the trend toward "accountability" continues, grades will have to go. Teachers cannot be held accountable for A's, B's, and C's—in fact, grades are inimical to any system of accountability. It seems likely, therefore, that the basis for accountability will be the instructional objective. Since this must express a learning outcome, it must presumably be expressed in behavioral terms. Several different forms of accountability systems appear to be feasible; objectives would seem to be necessary for any or all of them.

These appear to be the major communication functions which schools need to carry out if they are engaged in systematically promoting learning. Each of these instances of communication requires accurate and reliable statements of the *outcomes of learning*, if it is to be effective. Such outcomes may be described, accurately and reliably, by means of statements which identify (a) the capability to be learned, and (b) the class of performances by means of which the capability is exhibited. There appears to me to be no alternative to the use of "behavioral objectives," defined as in the previous sentence, to perform these essential functions of communication.

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