OBJECTIVES
for INSTRUCTION
and EVALUATION

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1

INSTRUCTIONAL OBJECTIVES
AND THE INSTRUCTIONAL
PROCESS

After completing this chapter, the learner should be able to:

1. Define the term instructional objectives;
2. Describe ten reasons for using instructional objectives in education;
3. Describe the current status of empirical research on instructional objectives;
4. Identify three methodological weaknesses characterizing empirical research on instructional objectives which may account for inconsistent research findings;
5. Identify fourteen key points of controversy over the use of instructional objectives;
6. State the major premise and specific assumptions underlying the general model of instruction;
7. Draw the general model of instruction and briefly describe each component in the model.

This chapter is divided into two major parts. In the first part we present a general rationale for using instructional objectives. We examine the reasons for using instructional objectives from three perspectives: a rational (or intuitive) perspective, an empirical perspective, and a functional perspective. In the second part of the chapter an overview of the general model of instruction is presented. Each component of the instructional model is described briefly and is related to instructional objectives.
THE RATIONALE FOR INSTRUCTIONAL OBJECTIVES
AND THEIR USE

Since the major focus of this book is on the nature and use of instructional objectives, it will be helpful to clarify at the outset what we mean by the term *instructional objective*. Instructional objectives are statements that describe what students will be able to do after completing a prescribed unit of instruction. Other terms that have been used to describe these types of objectives (i.e., instructional) are *behavioral objectives* and *performance goals*. The terms *behavioral* and *performance* often are used to describe objectives of the nature we will examine because the objectives inform students what behaviors, or performances (e.g., write an essay, draw a diagram, construct a model), they are expected to achieve to demonstrate that they have learned what is required of them.

Since chapter 2 is devoted to a detailed examination of instructional objectives, we will not take time here to describe the characteristics and components of instructional objectives. However, an example of an instructional objective at this point would probably be useful to establish a common meaning for the term. Below are two objectives; the first is *not* an instructional objective, while the second one is (additional sample objectives are provided in Appendix A):

1. The student will know what factors gave rise to the Industrial Revolution.
2. The student will list and describe in writing at least three factors that gave rise to the Industrial Revolution.

It should be clear that the second objective informs the student what he/she is to do (i.e., list and describe in writing at least three factors that gave rise to the Industrial Revolution) to demonstrate that learning has occurred. The first objective lacks specificity; it does not indicate *how* the student is to demonstrate what he/she knows and to what extent he/she is to know the required information. Additional distinguishing characteristics of instructional objectives will be presented and discussed later. If we are in general agreement as to what is meant by the term *instructional objective*, let us move on to a consideration of the various reasons for using instructional objectives.
Rational Basis for Using Instructional Objectives

In discussing the relative merits and problems of instructional objectives, many educators have pointed out several cogent reasons for using instructional objectives at all levels of education (e.g., elementary, secondary, and higher education). Among the more compelling reasons is that the use of instructional objectives is consistent with the concept of accountability (the balancing of money spent for education to amount of student learning). Accountability in education is rapidly gaining acceptance from both the public and the federal government. The publicity given the Texarkana program (Elam, 1970) and others like it has stimulated the belief that application of accountability concepts to public education is a "concrete practical activity" that may be used to confront some of the most critical educational dilemmas, including the re-establishment of confidence in the educational system at all levels (Lessinger, 1970). Even so, some educators perceive accountability as a threat to the educational process. Unfortunately, some educators who have negative attitudes about accountability also have become negative about instructional objectives. Apparently, the negative attitudes about instructional objectives are based on the misconception that using instructional objectives leads to accountability in education. Certainly the use of instructional objectives is consistent with accountability, but national and local economic considerations, rather than the use of instructional objectives itself, probably lead to, if they do not directly cause, accountability-based educational systems. Moreover, it is clear that some form of accountability may be inevitable given the current status of economic conditions and growing involvement of parent groups in making decisions about local educational systems.

Few comforting words can be said to those teachers who view accountability-based educational systems as a threat. However, if accountability-based educational systems do become the norm, experience in the use of instructional objectives will enable teachers to adapt to the system more easily. To achieve the balance between spending and student learning that accountability demands, the individual teacher or school system must be able to demonstrate that students have learned as a result of their instruction. Accordingly, educational accountability can be implemented successfully only if educational goals or objectives are precisely identified and stated before the instructional program begins and if some reliable measure of effectiveness of instruction in implementing these goals is devised. Development and use of instructional objectives will allow teachers to
state their specific instructional goals to their immediate supervisors and
school boards and will aid the teacher in developing effective means for
assessing student attainment of the specified goals (as we shall see in
chapter 6).

While the issue of accountability is one of the strongest reasons for
using instructional objectives, there are additional reasons for their use in
the educational process (Kibler and Barker, 1970; Kibler, Barker, and
Cegala, 1970b). Among the additional reasons for using instructional
objectives are the following:

1. Because instructional objectives clearly specify to students what is to
   be learned and how they are to demonstrate learning (including a
statement of the criteria to be used in evaluating learners’ performance),
it seems reasonable to argue that students are spared the frustration and
time-consuming effort of trying to guess what the teacher expects of
them. Moreover, it appears logical that students will learn more easily if
they are told what they are expected to learn and how they will be
expected to demonstrate that learning has occurred.

2. Given such clearly specified objectives, curriculum planners are better
   able to arrange sequences of courses or units of instruction. Knowing
what students (hopefully all students) will be able to do at the end of
courses and what students are able to do at the beginning of courses
(prerequisites) should make it possible to eliminate unnecessary overlap
of courses and to identify and fill in gaps between courses.

3. Students and their advisors are able to plan their course programs
   better when they can read course descriptions that include instructional
objectives.

4. Through clear instructional objectives, teachers are able to tell other
   teachers what they teach. Stating that “students learn to name each
state and its capital in the United States” communicates considerably
more than stating “United States geography is taught.”

5. Teachers and administrators can determine the level of objectives
   students will be able to achieve in terms of the three taxonomic
classifications to be discussed in chapter 5. For example, in the cogni-
tive domain, objectives can be classified as knowledge, comprehension,
application, analysis, synthesis, and evaluation, thereby avoiding undue
emphasis on a certain level of objectives.

6. Given clearly defined goals to work toward, teachers can design instruc-
tional experiences to achieve them and can evaluate the effectiveness of
such experiences according to whether the goals are achieved.
7. Gagné (1965a) has pointed out the necessity of evaluating student accomplishments in any educational program. It is important for the teacher to be able to determine the student's capabilities at any given time during an instructional program. When instructional objectives are specified, it is possible for the teacher to determine the student's present level of mastery for any prescribed objective at any time. Moreover, by specifying instructional objectives, teachers can identify a student who has acquired, prior to instruction, the level of excellence required for successful performance on a given objective. Instructional objectives also may help in identifying students who lack the prerequisites to master the prescribed objectives successfully.

8. Because an instructional objective includes a performance standard, it represents a minimal level of performance to be sought by all, or most, students. Therefore, most students in a given class can be expected to master successfully the behavior specified in an objective. This idea may seem startling—that most students in a class can succeed. However, such outstanding psychologists as Bloom (1968) and Carroll (1963) have argued that most students can achieve mastery if they will (and are permitted to) devote enough time to the learning task and if appropriate instruction is provided.

9. Performance standards also help teachers determine the adequacy of their instructional program. If students do not master objectives efficiently as a result of a given instructional program, various changes may be required in the program, in the objectives, or in other elements of the instructional process.

**Empirical Basis for Using Instructional Objectives**

Although there are several reasons on logical grounds for using instructional objectives, there is limited empirical data to support their unqualified use. Educators have given considerable attention to discussions about instructional objectives in the literature (see Pouliot and Peters, 1971, and Geis, 1972, for extensive bibliographies), but there have been only fifty or so experimental studies focused on instructional objectives. Unfortunately, the results of these studies are inconsistent and provide no conclusive evidence about the effect of instructional objectives on learning.

A review of over fifty empirical studies of the effects of instructional objectives on student achievement suggests that current findings may be
grouped into four separate categories.\(^1\) The first category consists of investigations into the effects of student possession of instructional objectives on learning. The results of these studies overall provide no conclusive findings. Of the thirty-three studies found that compared student learning with and without possession of instructional objectives, only eleven reported that knowledge of instructional objectives improved learning significantly (Doty, 1968; Engel, 1968; Blaney and McKie, 1969; Dalis, 1970; Kueter, 1970; Lawrence, 1970; Nelson, 1970; Puckett, 1971; Webb, 1971; Ferre, 1972; and Olsen, 1972). Twenty-two other studies found no differential effects on learning that could be attributed to student possession of instructional objectives (Smith, 1967; Baker, 1969; Bishop, 1969; Boardman, 1970; Brown, 1970; Bryant, 1970; Conlon, 1970; Stedman, 1970; Weinberg, 1970; Hershman, 1971; Jenkins and Deno, 1971; Jordan, 1971; Lovett, 1971; Merrill and Towe, 1971; Olson, 1971; Phillips, 1971; Rowan, 1971; Clingman, 1972; Kalish, 1972; Loh, 1972; Patton, 1972; and Zimmerman, 1972).

The second category of studies consists of investigations into the effects of the form of instructional objectives (i.e., specific vs. general objectives) on student learning. The collective results of these studies suggest that there are no differential effects on student learning attributable to the form in which objectives are stated. Only two studies (Dalis, 1970, and Janeczko, 1971) found that students who receive specific instructional objectives (i.e., statements of terminal behaviors to be performed and conditions for performance) achieved significantly higher scores on a test of learning than students receiving more general objectives. Other studies found no differential effects related to objective form (Oswald and Fletcher, 1970; Stedman, 1970; Weinberg, 1970; Jenkins and Deno, 1971; and Lovett, 1971).

A third category includes investigations into the effects on student learning of teacher possession and use of instructional objectives. Of the eight studies included in this category, five found no significant effects on student achievement (Baker, 1969; Cardarelli, 1971; Crooks, 1971; Clingman, 1972; and Kalish, 1972), while three studies reported significant positive effects (Wittrock, 1962; McNeil, 1967; and Piatt, 1969).

Investigations in the fourth category focused on the effects of student possession of instructional objectives on efficiency (in terms of time) of

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\(^1\) The authors are indebted to Ronald E. Bassett for the following review of the literature on instructional objectives.
student learning. These studies also provide no conclusive findings. Two studies (Mager and McCann, 1961; Allen and McDonald, 1963) found that the use of instructional objectives significantly reduced the amount of time spent on learning, while five studies found no difference in learning time between students who had objectives and those who did not (Smith, 1970; Janeczko, 1971; Merrill and Towle, 1971; Rowan, 1971; and Loh, 1972).

Although less than half of the studies reported in the literature found support for the use of instructional objectives, a close examination of the research on the whole reveals a number of methodological weaknesses that may explain some of the inconsistent findings. Three methodological concerns seem particularly worthy of comment here. First, the ways of operationalizing instructional objectives are not standard across the experimental studies. Since researchers often do not report examples of instructional objectives used in the studies, it is difficult, if not impossible, to determine the worth of the objectives used. Second, very few researchers have provided subjects with instruction in the use of objectives prior to experimental treatment conditions. Since instructional objectives are new to most students, prior training in the use of objectives may be an important factor in determining how objectives affect student learning (Tiemann, 1968; Boardman, 1970; Brown, 1970; Jenkins and Deno, 1971; and Tobias and Duchastel, 1972). Only recently, Bassett’s (1973) research has indicated that prior training in the use of instructional objectives influences learner performance within a modified mastery-learning system. Our experiences in using instructional objectives in our classes also support this notion. Appendix B contains a programed text designed to teach students how to use instructional objectives. The reader may find this

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**BRANCHING OPTION ONE**

At this point in the text, the reader has the option of turning to additional material contained in Appendix B. You may find reading the material most beneficial at this point for purposes of clarity or you may choose to complete the reading of this section and branch to the material in the Appendix at a later time.
program or some variation of it useful in teaching students how to benefit maximally from instructional objectives. Third, few researchers have provided teachers with training in using instructional objectives. Consequently, it is difficult to determine if objectives were used appropriately in several of the reported studies.

In summary, current findings on the effects of instructional objectives provide no conclusive data on the relationship between the use of objectives and student learning. While instructional objectives have been found to facilitate learning in a number of studies, the facilitating effect has not been consistent across all studies. Consequently, we cannot, at this time, draw any conclusive generalization about the effect of instructional objectives on learning. However, despite this state of affairs there are several compelling reasons, on logical grounds, for using instructional objectives. We already have presented the most cogent of these reasons in the preceding section. Even so, there are a number of educators who perceive equally logical reasons for not using instructional objectives (Hausdorf, 1965; Eisner, 1967; Ebel, 1970; Macdonald and Walfron, 1970). The controversy over instructional objectives has generated several heated discussions among educators regarding whether or not objectives are either important or useful. Since the controversy over instructional objectives cannot be resolved at this time by an examination of the empirical data on the subject, we must turn to other ways of resolving the conflict.

Functional Basis for Using Instructional Objectives

Many of the controversies about instructional objectives stem either from differing philosophical views about the nature of education or from questions about how instructional objectives are applied to certain areas of education, such as the fine arts and humanities. In essence, the controversy often focuses on differing viewpoints about how instructional objectives function in an educational system. W. James Popham has written an insightful paper dealing with several arguments that have been presented in opposition to instructional objectives. Dr. Popham’s paper is reproduced below as an introduction to some of the key points of controversy over the use of instructional objectives.