

TAXONOMY

OF

EDUCATIONAL OBJECTIVES

The Classification of Educational Goals

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THE CLASSIFICATION OF EDUCATIONAL GOALS
HANDBOOK I: COGNITIVE DOMAIN
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TAXONOMY OF EDUCATIONAL OBJECTIVES

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HANDBOOK II: AFFECTIVE DOMAIN

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TAXONOMY OF EDUCATIONAL OBJECTIVES

THE CLASSIFICATION OF EDUCATIONAL GOALS

HANDBOOK II: AFFECTIVE DOMAIN

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ACKNOWLEDGMENTS

The persons listed below contributed to the Taxonomy Project through attending one or more of the conferences at which the development of the affective domain was discussed.

BENJAMIN S. BLOOM University of Chicago	WILLIAM H. FOX* Indiana University
PAUL S. BURNHAM Yale University	EDWARD J. FURST Ohio State University
HENRY CHAUNCEY Educational Testing Service	NATHANIEL L. GAGE Stanford University
RUTH CHURCHILL Antioch College	RAYMOND J. GERBERICH American Educational Research Association
WILLIAM COLEMAN Coleman Associates	RALPH GOLDNER New York University
MARY CORCORAN University of Minnesota	J. THOMAS HASTINGS University of Illinois
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PAUL L. DRESSEL Michigan State University	CLARK HORTON Dartmouth College
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PREFACE

The success of *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain*, has spurred our work on the *Affective Domain*. As is indicated in the text, we found the affective domain much more difficult to structure, and we are much less satisfied with the result. Our hope is, however, that it will represent enough of an advance in the field to call attention to the problems of affective-domain terminology. Further, we hope that it will hold the affective domain's terms well enough in place to facilitate research and thinking on these problems. If it achieves these goals, revisions and modifications of the framework should be possible in the not too distant future, and we should be able at least to approach the specificity and clarity with which we can now handle phenomena in the cognitive domain. How large a step we have taken in this direction remains for you, the reader, to judge.

This *Handbook* is modeled in format after *Handbook I: Cognitive Domain*. The reader will find that Part I describes the nature of the affective domain and the classification structure prepared for it. Part II gives the classification structure in detail and describes the evaluation of affective objectives at each level of the structure. In Part I, Chapters 1 and 2 give the background of the project and indicate how and why it came to be. Chapter 3 describes the basis of classification (internalization) and the nature of the classification structure, and relates internalization to terms common to the field. Chapter 4 analyzes the relation of the affective to the cognitive domain. Chapter 5 describes how the affective-domain structure can be used to classify both objectives and test items, and it permits the reader to test himself on how well he can use the *Taxonomy*. Chapter 6 relates the affective domain to the contemporary views of curriculum, evaluation, and educational research and suggests some points for further exploration.

Part II contains a complete and detailed description of the categories and subcategories of the affective domain and gives illustrative objectives and test items for each category.

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For easy reference, Appendix A contains a condensed version of the *Affective Domain*. Since the *Cognitive Domain* is frequently referred to in the text, a condensed version of it is included in Appendix B.

Readers seeking a hasty overview of the *Affective Domain* should read at least Chapters 1, 3, 5, and Appendix A.

One problem which occurred with frequency in reviews of the preliminary manuscript may be worth noting here, though it is also described in Chapter 3. The categories of the affective-domain structure are developed to handle primarily positive values rather than aversions, fears, and dislikes. This is because this is the way in which educational objectives are generally stated, and the *Taxonomy* is a framework for classifying these objectives. But evaluation procedures may measure both the positive and negative aspects. It is believed that, with very little interpretation (for example, as is shown on page 30), the framework can be used for those "negative" types of objectives which one is likely to find in the school curriculum.

The authors are most grateful for the advice and assistance they received from many sources. As is indicated in more detail in Chapter I, efforts to develop the affective framework began while the *Cognitive Domain* was being finished. Different possible structures for the domain were discussed at a number of meetings of the Association of College and University Examiners. Persons who attended these meetings and thus contributed to the development of the structure are listed on a previous page. Records of attendance at the meetings are not complete, however. We apologize for any omissions. The last of the meetings of this group occurred in 1957.

Special recognition is due to the Social Science Research Council's Committee on Personality Development in Youth for financial aid toward some of the expenses of travel, critics, and clerical services, and to Dr. C. Robert Pace of U.C.L.A., a member of the SSRC Committee, and Dr. Ralph W. Tyler, Director, Center for Advanced Study in the Behavioral Sciences, the chairman of the SSRC Committee, who encouraged the authors. We are grateful to the University of Chicago and to Michigan State University for the research time and facilities they provided.

We wish particularly to thank Dr. Warren Findley, University of Georgia, Dr. Willard Spalding, California Coordinating

Council for Higher Education, and Dr. Asahel Woodruff, University of Utah, for careful readings and detailed comments on the manuscript, and Dr. Milton Rokeach, Michigan State University, for especially helpful comments on Chapter 4.

In addition the authors received helpful written comments and suggestions from Dr. Roscoe A. Boyer, University of Mississippi; Miss Dorothy Frayer, Miami University; Dr. Edward J. Furst, Ohio State University; Mr. Louis Hofmann, Michigan State University; Dr. John U. Kidd, University of Pittsburgh; Dr. Harry Levin, Cornell University; Dr. M. Ray Loree, University of Alabama; Dr. Robert MacGregor, University of Texas; Dr. Enoch I. Sawin, San Francisco State College; and Dr. Godfrey Stevens, University of Pittsburgh.

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PART I

INTRODUCTION AND EXPLANATION

CHAPTER 1

OVERVIEW OF THE TAXONOMY PROJECT

FIRST WORK ON THE TAXONOMY

In 1948 a group of psychologists interested in achievement testing met at an American Psychological Association Convention in Boston. After considerable discussion on the difficulties of cooperating and communicating about work on educational evaluation, it became clear to us that a special limitation of this work was the absence of a common frame of reference. We grew quite enthusiastic about the possibilities of several schemes for securing, at the minimum, a common terminology for describing and referring to the human behavioral characteristics we were attempting to appraise in our different school and college settings.

It became apparent, after further discussion, that we each began the process of test construction with a detailed set of specifications, a blueprint for the test. One part of these specifications described the content with which the test was to deal. This might be, for example, a subject matter (mathematics, history, physics), or an area of human experience (music, religion, reading, social relations), or an aspect of the self (leisure-time activities, feelings about self, etc.). There was apparently no limit to the content of our appraisals. They ranged over all the areas of human experience, subject matter included in the curriculum, and objects constructed by, used by, or thought about by, human beings. Library classifications, encyclopedia indexes, and philosophic divisions do attempt to summarize the contents and objects of human interest and inquiry. We as a group could see little advantage to be gained for our work by creating one more classification of subject matter and areas of experience.

It was the other dimension of our specifications—the types of *human reaction* or *response* to the content, subject matter, problems, or areas of human experience—which seemed most significant for our purposes. We had all made use of educational objectives, defined in terms of thoughts, feelings, and actions, as this second dimension. These embraced a range of human re-

sponses, including knowing about something, solving problems of various kinds, evincing an interest in some types of human experience, having an attitude toward some object or process, or expressing one's feelings and views on a variety of phenomena. Such objectives specify in operational terms the actions, feelings, and thoughts students are expected to develop as a result of the instructional process. It seemed to us that some way of classifying and ordering the types of responses specified as *desired outcomes* of education might be useful to a group of achievement examiners.

We believed that objectives of education might gain meaning through two rather distinct processes. One process is that of defining the objective in behavioral terms and then determining the evidence (i.e., tasks, tests, observations, etc.) which is relevant in judging whether students have or have not "achieved" the objective. This is a type of operational definition which has been an integral part of curriculum and evaluation work for the past three decades. A second process is that of trying to place an objective within a large over-all scheme or matrix. It is this second process to which the classifications in the proposed taxonomy were addressed. Here it was hoped that placing the objective within the classification scheme would locate it on a continuum and thus serve to indicate what is intended (as well as what is *not* intended).

VALUES OF THE TAXONOMY

We envisioned several major values arising from the attempt to order these desired outcomes. In the first instance, the actual sharing in the process of classifying educational objectives would help the members of the group *clarify* and tighten the "language of educational objectives." We were aware that all too frequently educational objectives are stated as meaningless platitudes and clichés. Some view them as an opportunity to use a type of prose found frequently in the superlatives employed by advertising men and the builders of political platforms. If, however, educational objectives are to give direction to the learning process and to determine the nature of the evidence to be used in appraising the effects of learning experiences, the terminology must become clear and meaningful.

It was hoped that the statement of an objective in similar terms by different workers would make possible a definite classification of that objective and would also permit exact inferences about the kinds of behaviors expected of students. The ideal, of course, would be educational objectives stated so clearly that the authors of the objective would know exactly what they meant and the readers of the objectives would have an equally clear idea of what was intended. While we never did quite expect to reach this ideal because of the difficulties in using language to communicate intentions, we did hope that it might be possible to devise a system of classification which would permit one to know almost exactly what is meant by a particular category. Thus, if the authors or readers of an objective should place it in a particular category, the consequences for learning experiences and evaluation would become relatively precise and clear.¹

A second value to be derived from the creation of a classification scheme would be to provide a convenient system for describing and ordering test items, examination techniques, and evaluation instruments. We had found it difficult to exchange test material, primarily because of its tremendous bulk. Thus, an examiner at one institution who wished to use the material developed by examiners in other places had to do a great deal of reading before he could find a few items which were clearly relevant to his needs. If, however, test materials were classified as to content and objectives, one should be able to determine quickly what was available and useful for a particular task in examination development.

An even more important value we hoped to secure from the classification scheme was that of comparing and studying educational programs. If programs have similar objectives, do they involve similar or different learning experiences? The classifications could be used as tools in clarifying and organizing educational research results. What types of educational experiences produce what types of educational development? What types of educational development are well retained and what types are not?

¹Throughout the two *Taxonomy* Handbooks, the term "educational objectives" refers to the objectives formulated by teachers, curriculum workers, etc. We clearly recognize that students also have educational objectives which are most influential in shaping the instructor's choice of teaching methods. Our concern, however, is with the choice of content and behavior which forms the structure of the planned curriculum and which provides a basis for evaluating the success of a given educational program.

What is the relation between intelligence and various types of educational progress? What is the transfer value of different kinds of educational outcomes? These are a few of the questions which we strive to understand through educational research. Through the Taxonomy we hoped to relate the results found in one educational situation to the results discovered in another. By this process we might be able to bring together the results of educational research so as to enable us to draw larger generalizations.

Finally, we were seeking something beyond a simple classification scheme. We envisioned the possibility that we might select principles of classifying educational outcomes which would reveal a real order among these outcomes. If such an order was confirmed by various types of observations and research findings, the order and principles of arrangement should be of value in the development of a theory of learning which would be relevant to the complex as well as simple types of human learning. At the very least, the discovery of some of the principles of ordering human-learning outcomes should define the types of findings that a useful theory of learning must be able to explain.

THE THREE DOMAINS OF THE TAXONOMY

Following our initial meeting, a series of meetings was held by a group of college and university examiners. At these meetings, which were in the nature of work sessions lasting two to four days, we began by creating a threefold division of educational objectives: cognitive, affective, and psychomotor. We found that most of the objectives stated by teachers in our own institutions, as well as those found in the literature, could be placed rather easily in one of three major domains or classifications:

1. *Cognitive*: Objectives which emphasize remembering or reproducing something which has presumably been learned, as well as objectives which involve the solving of some intellectual task for which the individual has to determine the essential problem and then reorder given material or combine it with ideas, methods, or procedures previously learned. Cognitive objectives vary from simple recall of material learned to highly original and creative ways of combining and synthesizing new ideas and materials. We found that the largest proportion of educational objectives fell into this domain.

2. *Affective*: Objectives which emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. Affective objectives vary from simple attention to selected phenomena to complex but internally consistent qualities of character and conscience. We found a large number of such objectives in the literature expressed as interests, attitudes, appreciations, values, and emotional sets or biases.

3. *Psychomotor*: Objectives which emphasize some muscular or motor skill, some manipulation of material and objects, or some act which requires a neuromuscular co-ordination. We found few such objectives in the literature. When found, they were most frequently related to handwriting and speech and to physical education, trade, and technical courses.

The reader will undoubtedly recognize that such a threefold division is as ancient as Greek philosophy and that philosophers and psychologists have repeatedly used similar tripartite organizations: cognition, conation, and feeling; thinking, willing, and acting; etc. Modern research on personality and learning raises serious questions about the value of these simple distinctions.

Basically, the question posed by modern behavioral science research is whether a human being ever does thinking without feeling, acting without thinking, etc. It seems very clear that each person responds as a "total organism" or "whole being" whenever he does respond. In spite of this, research on aptitudes and interest (Adkins and Kuder, 1940) does reveal quite small correlations between aptitudes and interests. Similarly, much of the research on the relations between cognitive achievement and attitudes and values shows them to be statistically independent. This is illustrated by Mayhew (1958), who reports little relationship between attitude changes and growth of knowledge in a college course. This does not mean that individuals with high aptitudes and interests do not exist, or that individuals with high achievements and "desirable" attitudes do not exist. What it does mean is that the relationship between these domains is too low to predict one type of response, effectively, from the other.

However, much more germane to our problem, which is that of classifying educational objectives, is that the teachers and curriculum workers who state objectives do make distinctions between problem solving and attitudes, between thinking and feeling, and between acting and thinking or feeling. These distinctions are accordingly reflected in our attempts to categorize objectives.

In addition, the evaluation of the outcomes of learning has involved very different techniques to appraise thinking, feeling, and acting; thus our distinctions are likely to be of service for the evaluation of school learning.

Finally, reconciliation between the classification of objectives and theories of personality and learning is likely to come in the ways of dealing with individual children and the interaction between teachers and students, rather than in the forcing of a set of classification procedures to agree with particular views about the functioning of human organisms.

We should note that any classification scheme represents an attempt to abstract and order phenomena and as such probably does some violence to the phenomena as commonly observed in natural settings. The value of these attempts to abstract and classify is in their greater power for organizing and controlling the phenomena. We believe the value of the present system of classification is likely to be in the greater precision with which objectives are likely to be stated, in the increased communicability of the objectives, and in the extent to which evaluation evidence will become available to appraise students' progress toward the objectives.

It was evident in our work that, although one could place an objective very readily in one of the three major domains or classes, no objective in one class was entirely devoid of some components of the other two classes. The domains evidently represent emphases and perhaps even biases in the statement of objectives. We hesitated to adopt this threefold division except on the practical grounds that objectives are so stated (and intended) that they fall rather easily into one of the three divisions.

DEVELOPMENT AND USE OF THE TAXONOMY IN THE COGNITIVE DOMAIN

Since the majority of objectives at the college and secondary level fell into the cognitive domain, the examiner group gave it top priority. We also found that most of our examinations for grading and evaluation purposes emphasized the objectives in this domain. Thus, the cognitive domain focused most directly on the objectives emphasized by our teachers and on the examination work being done by our examining staffs.

In the cognitive domain we found that many of the objectives had been developed with considerable precision as the result of much interaction between teachers and evaluators. Thus an objective such as "the development of skill in the interpretation of data" had been defined in detail by teachers and evaluators, and a sizable collection of techniques for appraising the extent to which students have developed this skill had been devised by examiners. Furthermore, we were able to find more than a thousand test questions and problems which had been developed to test various aspects of this one skill.

The equation "objective = behaviors = evaluation technique = test problems," has been so explicitly worked out for this objective that the developers of a classification scheme must accept the reality and meaningfulness of such an outcome of learning. That is, an objective has come to mean a particular set of behaviors, and the relation between behavior and the objective has been recognized by many workers in the field. Further, a particular set of evaluation techniques has come to be accepted as the appropriate way of appraising these behaviors, and even a definite set and variety of test problems have come to be accepted as valid indicators of the particular objective and its behaviors. The task for the classification scheme was where to put such an objective, and not how to discover and give meaning to this objective.

The group also found that, as a result of more than twenty years of work in evaluation, some major distinctions among cognitive objectives had already arisen. Thus, in their work the teachers and evaluators had made very sharp divisions between the remembering of information and problem solving in which the individual had to attack a problem new to him. Distinctions, although less clear, had grown up between information, problem solving, and creative or original discoveries and syntheses.

Starting, then, with a large list of cognitive objectives, behavioral definitions, and evaluation materials, the group explored various ways of ordering them. After considerable effort and thought it became apparent that the objectives (and corresponding behaviors and evaluation materials) differed in complexity. An objective such as "knowledge of specific facts" could be isolated and defined at one level of complexity. But at another level of complexity this objective became a part of another objective such as "the ability to apply principles." At one point the "knowledge of specific facts" was an end in its own right, while at a later point

it became a part of, tool for, or, means to, a larger or more complex objective.

After some experimentation with different arrangements, the *principle of complexity* was developed as the major ordering basis for the cognitive domain. A subcommittee was then set the task of sharpening the definitions of the different classes of the cognitive domain and finding illustrative objectives and evaluation examples which could be used to give clearer and more operational definitions to each objective.

The subcommittee came back with a set of definitions, a set of educational objectives, and a set of test problems, which they asked the larger group to test by matching the objectives and problems with the definitions. The result of this attempt to relate the three revealed where the definitions were inadequate, as well as some of the conditions required for classification of objectives and test material. Revision of definitions and repeated efforts at classification by small groups of workers enabled us to arrive eventually at a point where we believed the classification procedures and the definitions of classes and subclasses were communicable. That is, *communicability* was determined by the extent to which a group of competent workers could, after relatively little experience with the classification procedures, agree on the approximate placement of objectives, statements of behavior, and test materials.

Another check on the adequacy of the classification procedures was to determine whether it was *comprehensive*. Could we take new lists of objectives which we believed to be cognitive in nature and find places in the classification for each objective? We found that we rarely encountered an objective which could not be placed in one of the major classes within the cognitive domain, although we were not always certain that we could find an appropriate subclass within which to put it. Further work on the subclasses was done until we felt we had an adequate, although far from perfect, scheme for placing each new objective.

It was clear that we finally had a comprehensive method of defining and classifying cognitive educational objectives. However, we were seeking something more than a set of categories and definitions. We were hopeful that the order and arrangement of the classes and subclasses expressed a fundamental relation among the possible outcomes of education. We were of the view that the principle of complexity which had become our basis of

arrangement was a reflection of the order of difficulty of the learning of the different objectives. Thus, a knowledge objective was presumably easier (and quicker) to achieve than a more complex type of analysis or synthesis objective. Perhaps, also, an analysis objective, once learned, would be retained longer than a knowledge or comprehension objective. It was partially out of temerity and partially out of hope and optimism that we entitled our work, *Taxonomy of Educational Objectives: Cognitive Domain*.

We have been criticized for the use of the word "taxonomy." Some critics contended that we did not have a true taxonomy but only a useful way of describing and defining classes of educational objectives. Less severe critics suggested that many of our readers would not understand what taxonomy meant and that the word would produce more confusion than was desirable. In any case, we have retained the term "taxonomy."

A true taxonomy is a set of classifications which are ordered and arranged on the basis of a single principle or on the basis of a consistent set of principles. Such a true taxonomy may be tested by determining whether it is in agreement with empirical evidence and whether the way in which the classifications are ordered corresponds to a real order among the relevant phenomena. The taxonomy must also be consistent with sound theoretical views available in the field. Where it is inconsistent, a way should be developed of demonstrating or determining which alternative is the most adequate one. Finally, a true taxonomy should be of value in pointing to phenomena yet to be discovered.

Whether or not the classification scheme presented in *Handbook I: Cognitive Domain* is a true taxonomy is still far from clear. There is some evidence that the more complex objectives are more difficult to learn than the less complex ones (Bloom, 1954b; Chausow, 1955; Dressel and Mayhew, 1954). There is evidence that the test questions intended to evaluate the objectives which fall in the higher (and more complex) parts of the cognitive domain are more difficult than the test questions intended to evaluate the less complex objectives.

Dressel and Mayhew's (1954) study suggests that significant growth in some of the more complex objectives occurs only when there are learning experiences in many parts of a curriculum devoted to these objectives. That is, the learning environment must give major emphasis to the more complex objectives if significant growth is to take place in these objectives.

Some of the research on lecture vs. discussion suggests that the knowledge objectives may be learned equally well under each type of learning situation (McKeachie, 1962). On the other hand, the types of problem solving represented in the higher classes of the *Taxonomy* require opportunities to practice the behavior and are apparently more easily learned when problem solving is emphasized in discussion, laboratory, and other learning situations in which individuals attempt to attack problems and are helped to see ways in which their problem solving may be improved.

Handbook I: Cognitive Domain has been used by teachers, students, and examination workers over a period of six years. Some have found the illustrative examination techniques of value as models and as examples of some of the better developments in examination construction. Others have found the illustrative objectives and the classes of objectives suggestive of a range of outcomes which they had not previously utilized in their own courses and educational programs. The *Taxonomy* has been of value in classifying test material for exchange among test workers and as a basis for reviewing and criticizing standardized tests (Dressel and Nelson, 1956; Buros, 1959; Morris, 1961). Without doubt, the renewed emphasis on the more complex objectives is attributable in some small measure to the existence and use of the *Taxonomy*.

Whether we have a true taxonomy or not, it is clear that *Handbook I: Cognitive Domain* has proved to be useful in some of the ways originally envisioned by the examiners responsible for developing it. It is to be hoped that new research will emerge which will determine more clearly whether the group has developed a classification scheme or a *taxonomic order*. Both are useful, but the latter would, of course, have the greater range of consequences for practical as well as theoretical work in education.

BEGINNING WORK ON THE AFFECTIVE DOMAIN

The usefulness of the first Handbook and a variety of pressures have kept us aware of the need for completing the second Handbook on the affective domain. The group of examiners responsible for the development of the cognitive domain also felt great interest in and some responsibility for preparing the second volume. A subcommittee was delegated responsibility for working

on various aspects of the domain. At least six working meetings were devoted to this task. Although some progress was made, we did not feel secure enough in our results to publish the reports produced at these meetings. Several difficulties beset this work. First, there was a lack of clarity in the statements of affective objectives that we found in the literature. Second, it was difficult to find an ordering principle as simple and pervasive as that of complexity, which worked so satisfactorily in the cognitive domain. Third, few of the examiners at the college level were convinced that the development of the affective domain would make much difference in their work or that they would find great use for it, when completed. There was no doubt that the affective domain represented a more difficult classification problem than the cognitive domain.

However, our failure to complete the affective-domain Handbook and our pessimism about the possibility of completing it satisfactorily was more than offset by the many letters we received from teachers, specialists in measurement and evaluation, and educational research workers asking when the second Handbook would be published. It was evident that we had dropped one shoe and that the tenants in the room below were waiting for the second shoe to fall. Perhaps this is an illustration of the principle of closure, in that an attempt had been made to order educational outcomes into three domains—cognitive, affective, and psychomotor—and that the original proposers of the scheme are to be held to the completion of the scheme, or else to a confession that it is unworkable.

Two of us who had been active in the original work on the classification of educational goals felt some special responsibility for the completion of the second Handbook. With the consent of the majority of the other members of the original committee of college and university examiners, we have assumed the task of preparing such a handbook. We have been aided by a group of critics (see page viii of the Preface) who have made suggestions after reading the first draft of the work. After seeing the first draft of the chapters in Part I and the category descriptions of Part II, Bertram B. Mastia was persuaded to write the sections on testing of affective objectives in Part II of the Handbook. Since there have been no meetings of the examiners organization since 1957, they have not considered this manuscript as a group, and re-

sponsibility for the classification scheme must remain with us. We present it with some trepidation and full expectation of severe criticism from many quarters.

However, the value of this second Handbook is not likely to be determined by the amount of criticism we receive (or avoid). Rather, it is in its usefulness to teachers, evaluators, and curriculum workers. It is also in the extent to which it can help educators redress the erosion in the meaning and substance of affective objectives which has resulted from the greater emphasis on cognitive objectives. In the next chapter we shall try to describe the nature of the erosion which has taken place in the affective objectives and the task to which a meaningful and useful taxonomy of affective objectives must address itself.

CHAPTER 2

THE NEED FOR A CLASSIFICATION OF AFFECTIVE OBJECTIVES

Having suffered frustration and to some extent failure in our attempts to classify affective objectives, we were a bit surprised to find that many members of the original Taxonomy group still thought the task important and worth the effort to complete it. Why go ahead, however, with an effort which had thus far been so unproductive? In our attempt to face our own motivations we began to see more clearly a number of factors in this problem.

LIMITED EVALUATION OF AFFECTIVE OBJECTIVES

One of the reasons the cognitive domain presented us with a more easily solvable problem than the affective domain was the tremendous wealth of evaluation material we found being used for grading and certifying student achievement. Faculty, examiners, administrators, and even students accept the need for and value of such material.

When we looked for evaluation material in the affective domain we found it usually in relation to some national educational research project or a sponsored local research project (for which a report had to be written). Only rarely did we find an affective evaluation technique used because a group of local teachers wanted to know whether students were developing in a particular way. It was evident that evaluation work for affective objectives was marginal and was done only when a very pressing question was raised by the faculty or when someone wished to do "educational" research.

It is not entirely fair to imply that evaluation of the attainment of affective objectives is completely absent from the regular activities of schools and teachers. Undoubtedly almost every teacher is on the alert for evidence of desirable interests, attitudes, and character development. However, most of this is the noting of unusual characteristics or dramatic developments when they are