Chapter 3

THEORY IN EDUCATION

Against this background of general information about the processes of theorizing, we turn now to an examination of the kinds of theorizing done within the broad field of education. The purpose of a chapter on educational theory at this point is to serve as a link between the foregoing discussion of theory building and a discussion of the problems involved in curriculum theory development. If the reader will refer again to Figure 1, page 5, he will observe educational theory to be an applied theory and an outgrowth of developments in theories in the basic disciplines. This means that many of the problems for educational theory stem from practice. Since education is an applied discipline, educational theories technically are not sub-theories to theories in the basic disciplines. But beginning with theories in education in Figure 1, heavy lines have been drawn to indicate that curriculum theories are sub-theories to educational theories, and the theories indicated on the bottom line are sub-theories to curriculum theories. In fact, the order of events in Figure 1 is the rationale for the chapter organization of this book. Our discussion is organized to begin with a search for rules for theory building among the established disciplines, to move to theory development in education, and finally to substantial consideration of curriculum theory. In this chapter, we are concerned with thinking and developments in educational theory.

Traditionally, the word "theory" has been employed in educational literature without definition. For example, in the otherwise carefully prepared publication, the *Encyclopedia of Educational Research*, neither "theory" nor "educational theory" was

indexed, much less defined. There are two possible explanations for the omission. One is that the dimensions of educational theory had not been defined carefully enough for the topics to be discussed in an orderly fashion. A second is that there was not sufficient research on the subject to warrant its treatment in an encyclopedia devoted exclusively to research. In discussing the status of educational theory as of 1959, Bayles claimed that educational theory in the United States seemed to be in "a state of suspended animation." In his opinion, assumptions about the social context of education need to be clarified before a sound theoretical structure can be built.[1] A decade later Travers labeled the theories used in educational research as generalizations, but generalizations without the certainty, usefulness, or status of law.[2] On a more general level, Sizer registered frustration over "the persistent unwillingness of many professional educators to respect and use theory."[3] These comments illustrate the failure of scholars in education to introduce the rigors of sound theory building to the sets of events attributable to the field of education.

Despite these apparent shortcomings, theory in education has been a topic of serious discussion for a number of years, and in recent ones, the procedures of the natural and social scientist applied to the description and explanation of educational phenomena have opened up new vistas. A reasonable prediction is that educational theory will grow, but it will grow first from the sub-theories now being developed within the broad field of education.

Quite obviously, it is beyond the scope of this writing to review the entire history of the use of the concept "theory" in education or to review the nature of all so-called educational theories. It is possible, however, to relate the meaning and use of theory in related disciplines to its meaning and use in education. In this chapter, we will discuss the global aspects of educational theory and follow that with a review of exemplar sub-theory developments in school administration and instruction. Curriculum theory as a

[1] Ernest Bayles, "Present Status of Educational Theory in the U.S." *School and Society*, 87:5-7, January, 1959.

[2] Robert M.W. Travers, *An Introduction to Educational Research* (3rd ed.; New York: The Macmillan Company, 1969), p. 21.

[3] Theodore Sizer, "Commentary: Three Major Frustrations: Ruminations of a Retiring Dean," *National Elementary Principal*, 52:74, January, 1973.

third sub-theory of education will then be our concern for the remainder of the book.

APPROACHES TO EDUCATIONAL THEORY

Even a casual review of literature discussing theory in education indicates great disparity among the approaches made. For the most part, each approach is a direct function of the frame of reference of the author. For example, the hard-nosed practitioner may pose the world of theory in education as a hindrance to progress in the practice of running schools. A philosopher may equate philosophy with theory. A person who is seriously attempting to develop the field of educational theory utilizing the techniques of philosophy and science will assume a more global posture.

Theory and Practice

The notion that theoretical work in education is antithetical to the world of practice is frequently stipulated. Educational literature contains abundant discourse on the subject of the relationships between theory and practice. Unfortunately, most of it takes a negative instead of a positive approach. The point of view is that theory is something to be tolerated in small quantities at the college or university level, but it is to be forgotten or downgraded by school administrators and classroom teachers, who are expected to be "practical" people. Such comments are not based upon a careful consideration of the relationships that need to exist between theory and practice if either is to be consistent and constructive.

To some extent, confusion is multiplied by failure of commentators to discriminate between research that contributes to the formation of laws pertaining to explanation and prediction, and research applied to field situations which are not necessarily related to any larger series of events. Theory by its very nature is impractical. The world of practicality is built around clusters of specific events. The world of theory derives from generalizations, laws, axioms, and theorems explaining specific events and the relationships among them.

The fact that the worlds of theory and practice are different

does not minimize the known interrelationships that exist between them. The operational vistas opened up and explained by theories increase the possible choices of behaving for the practitioner; the theories, however, do not tell him how to act. A theory may clarify relationships among any given set of events, but it does not and cannot direct the execution of that set of events. Newsome made this distinction clear when he noted that theory is not what is practiced.[4] A person cannot practice a set of logically related statements; he performs an activity. Theories of instruction, for example, might account for classroom discipline, grouping practices, lesson planning, and instructional materials as components of instruction, but the theories cannot tell teachers how to behave with respect to those functions. Conversely, empirical information may be accumulated as a result of practices in schooling, but the accumulated data will not in itself explain or predict similar events elsewhere. Nevertheless, as Gowin put it, ". . . it is the job of educational theory to guide educational practices."[5] In turn, theory is modified by practice and research that emanates from it. We will have more to say about the relationship between theory and practices in education in the subsequent discussion of the more global developments in educational theory.

Theory and Philosophy in Education

It is to be expected that educational literature reveals a very close relationship between philosophy of education and educational theory. This relationship highlights the conflict in some educational circles between a scientific approach to the development of theory and a more prescriptive approach. It is convenient to say that there are two basic kinds of theory — prescriptive theory and descriptive theory. It is also a convenience to relate descriptive theory development with the scientific approach and prescriptive theory development with the techniques of philosophy. As indicated in Chapter 2, descriptive theories normally consist of a set of propositions that are logically interrelated from which relationships may be demonstrated and

[4]George L. Newsome, Jr. "In What Sense is Theory a Guide to Practice in Education?" *Educational Theory*, 14:36, January, 1964.

[5]D.B. Gowin, "Can Educational Theory Guide Practice?" *Educational Theory*, 13:8, January, 1963.

new information derived by deductive processes. Prescriptive theories, on the other hand, consist of a set of proposals for action or a set of propositions about a body of related problems. It is in the realm of prescriptive theory that philosophy exerts its influence.

The closeness of the provinces of philosophy and theory was illustrated by Dewey in the statement:

> If we are willing to conceive education as the process of forming fundamental dispositions, intellectual and emotional, toward nature and fellow men, philosophy may even be defined *as the general theory of education*.[6]

If one accepts the above conclusion, it becomes obvious that many theories must be developed within the general area of philosophy to account for the many dimensions of education and for differing basic philosophies. For example, a good philosophy must encompass a theory of knowledge. Comparably, a philosophy of education should lead to the formulation of a theory of method. Values and ethics, both in the purview of philosophy, play a significant role in education. Because of these reciprocal concerns, philosophy has a close relationship to theory development in education.

Various philosophies of education have been posed as theories of education. In an issue of *School and Society* devoted to educational theories, several different theories based upon philosophical positions were analyzed. Broudy espoused the cause of realism.[7] Butler defended modern idealism.[8] McMurray identified and elaborated the status of pragmatism in education.[9] Brameld, as would be expected, went to the defense of reconstructionism.[10] Pratte similarly associated philosophical positions with educational theories when he identified as contemporary theories of education: Progressive Education I (natural selection), Progressive Education II (experimentalism), essentialism, perennialism, reconstructionism, and existentialism.[11] Each of these positions is

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[6]John Dewey, *Democracy and Education* (New York: The Macmillan Company, 1916), p. 383.

[7]Harry S. Broudy, "Realism in American Education," *School and Society*, 87:11-14, January 17, 1959.

[8]J. Donald Butler, "Idealism in Education Today," *School and Society*, 87:8-10, January 17, 1959.

[9]Foster McMurray, "The Present Status of Pragmatism in Education," *School and Society*, 87:14-18, January 17, 1959.

[10]Theodore Brameld, "Imperatives for a Reconstructed Philosophy of Education," *School and Society*, 87:18-20, January 17, 1959.

[11]Richard Pratte, *Contemporary Theories of Education* (Scranton, Pa.: Intext Educational Publishers, 1971).

dictated by philosophical attitudes toward the role of the school, the nature of knowledge, the nature and derivation of values, and the nature of man. All of these latter impinge on the education function.

In analyzing confusion and conflict in educational theory, Black labeled four theories: Traditionalist, Progressive, the Learning-Product Theory, and the Learning-Process Theory. The Traditionalist adherents were identified with the transmission of the cultural heritage as the role of the school in the manner of the pre-Rousseau period. The Progressive adherents looked to such persons as Johann Herbart, Charles Judd, H.C. Morrison, and F.W. Parker for a point of view. The emphasis was on transmission of the social heritage which took the individual into account. The Learning-Process adherents were associated with such persons as Rousseau, Pestalozzi, Froebel, William James, G. Stanley Hall, John Dewey, William Kilpatrick, John Childs, Boyd Bode, and Harold Rugg. They emphasized the individual but recognized the school's role in the transmission of cultural heritage.[12] In 1966, Black restated his viewpoints on the same subject. Again he placed in polar positions Extreme Progressivism and Extreme Traditionalism with Learning-Process Theory and the Learning-Product Theory interposed between them. He stated:

> This four-fold classificatory scheme thus recognizes four aspects of education and distinguishes the four classes of educational theories according to differences in emphasis. Four concepts — education as transmission of the social heritage, education as individual development, education as a product, and education as a process — are the differentiating factors.[13]

Black concluded by averring that present-day philosophers lean toward the positions they espouse because of their commitment to specific philosophies such as Idealism, Realism, or Pragmatism.

In this kind of classification of positions, more is taken into account than philosophy. Some of the associations are dependent upon acceptance of findings in psychology, particularly learning and child development. Nevertheless, there is a great deal of reciprocal conversation about educational philosophy and

[12]Hugh C. Black, "Confusion and Conflict in Educational Theory: an Analysis," *Peabody Journal of Education*, 30:153-160, November, 1952.

[13]Hugh C. Black, "A Four-fold Classification of Educational Theories," *Educational Theory*, 16:289, July, 1966.

educational theory even to the extent of using the two terms as synonyms.

We should not leave this discussion of philosophy and theory in education without noting the existence of two points of view about the role of the philosopher in theoretical work in education. There has been a recent thrust toward the use of language analysis as the primary tool for educational theorizing. Advocates of this technique claim that the main function of the philosopher is to clarify the language used to talk about problems. Central to this position is the gaining of skill in correct use of language and the building of more adequate logic. Opposed to the extreme posture of the linguistic analysts are the advocates of more substantive philosophy who make use of metaphysics, epistemology, and ethics in arriving at prescriptive propositions about education. In my judgment, we should not leave this as an either-or option. Educational theorizing will demand the skills of both the substantive and the analytic philosopher.[14] Too many decisions in education rest upon value orientation.

Other Approaches to Educational Theory

The problem for educational theory, like that posed for any theory, is to explain all dimensions of education and the interrelationships among its constructs and propositions. To explain all aspects of education, or even schooling as a more limited sphere of education, by prescriptive theory alone is inadequate in modern times. Descriptive theory development is also needed. Many aspects of curriculum, instruction, administration, and other components of education can be subjected to the rigors of scientific theory-building procedures. The need for educational theory is so great and the field is so broad and complicated that there is plenty of room for all who may wish to work at it regardless of the kind of theory they may wish to develop.

An appeal for such needed development in educational theory was well voiced by Broudy when he called for unifying principles to be used in the resolution of conflict associated with innovations in

[14]Support for this posture is given by Broudy and Mays respectively in: Harry S. Broudy, "The Philosophical Foundations of Educational Objectives," *Educational Theory*, 20:3-21, Winter, 1970, and Wolfe Mays, "Linguistic Analysis and the Philosophy of Education," *Educational Theory*, 20:269-285, Summer, 1970.

school practices. For Broudy, a unified theory of education would take into account the following factors:

a. The present and projected kinds of knowledge and personality traits required for citizenship, vocation, and self-development.

b. A unified theory of education must be clear about the uses of schooling.

c. A unified theory must be judicious about the latest developments in learning theory and teaching technology.

d. A unified theory has to provide for general and special education, for differences in ability and bent.[15]

For Broudy, a unified theory of education would rationally organize cultural objectives, life outcomes, teacher and other specialist training, and facilities and resources necessary to make the enterprise go.

A much different approach to educational theory was taken by Brauner.[16] Brauner analyzed six major traditions that have influenced American educational thought throughout the nation's history. The traditions and characteristics associated with them are presented in Figure 3. In the figure, it can be noted that method, view of the child, and a controlling theme are regarded by Brauner as the principal theoretical characteristics associated with the six traditions listed.

In addressing himself to the issue of education as a subject of analytical study, Brauner was critical of the present state of affairs. He said: "With but rare exceptions, the bulk of what is written about education fails in substance, form, and vocabulary. It fails as scholarship, as interpretation, as communication, and as guidance for instruction."[17] If Brauner's assessment is correct, educational theory rests on an unstable base. Yet educational theory is no less needed for that reason.

A growing theme in educational theorizing is the conception of education as a discipline. In the accompanying dialogue, the subject of education as a field of study, and/or as a field susceptible to theorizing, is germane. Two definitive works will be cited as examples.

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[15]Harry S. Broudy, "Needed: A Unifying Theory of Education," *Curriculum Change: Direction and Process* (Washington: Association for Supervision and Curriculum Development, NEA, 1960), p. 24.

[16]Charles Brauner, *American Educational Theory* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964).

[17]*Ibid.*, p. 302.

The Tradition	Method	View of Child	Controlling Theme
Monitorial Method	Drill and Memorization	Trainable beast	Obedience
Object-Teaching	Handling Things	Flower to be cultivated	Discovery
Herbartianism	Five Steps	Social Embryo to be molded	Will power
Child Study	Self-Expression	Potential Artist	Sensitivity
Experimentalism	Problem-Solving by Scientific Method	Responsible Rebel	Involvement
Current Academic Emphasis	New Technology	Greatest Natural Resource	Mastery

Figure 3. *Six major traditions in American Education.* Adapted by permission from Charles J. Brauner, *American Education Theory* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964), p. 279.

A series of papers and responses to them was given at a symposium at John Hopkins University in May, 1961.[18] They were addressed to the question of whether education should be regarded as a discipline. Scholars representing various disciplines gave the papers and made comments upon the papers. Frequently, when an original paper posed education as a discipline, the comment took the opposite side. The arguments were conditioned by the ways individuals defined disciplines and related concepts. For example, a proponent of education as a discipline was opposed by a proponent of education as a profession. A discipline adds to its own knowledge; a profession is characterized by the services it renders. Education is the application of many disciplines; a discipline develops its own way of study and behaving. Obviously, the symposium was much more successful in identifying the issues involved than resolving them.

[18] John Walton and James L. Kuethe (eds.), *The Discipline of Education* (Madison, Wis.: The University of Wisconsin Press, 1963).

In the volume edited by Walton and Keuthe, a number of individuals with biases in their own fields of study debated and analyzed the disciplinary status of education. In yet another volume, a single author spelled out a detailed rationale for education as a discipline.[19] In the latter, Belth revived many of the arguments about why education should or should not be a discipline. He rejected the notion that education is solely the application of other disciplines, holding instead that education is a field of study (a discipline) in its own right. Education as a set of "know how to do" technical skills was rejected in deference to education conceived as the development of powers of explanation. Belth stated:

> The study of education is the study of the way in which models for inquiry are constructed, used, altered, and reconstructed. It is, further, a study of the types of models available to us at any given moment, and the conditions which make the model either employable or in need of rebuilding.[20]

The following list of what the study of education would include helps visualize Belth's point of view:

> 1. A history of the theories and models of education. Their development and their careers.
> 2. Principles and procedures for analysis of educational models.
> 3. The exploration of the functions of the prevailing models for the tool skills of reading and writing.
> 4. The study of prevailing models, revealing the modes of thinking in social, psychological, economic, and political facets of our developed culture which have given that culture its characteristic patterns of operation. An intensive study of the relationship between ways of thinking and the developed culture patterns would set forth the determining force of thought and the characteristics of the elements which enter into the act of thinking.
> 5. Detailed study into the variety of models by means of which a particular subject discipline is undertaken or performed (a history and analysis of the models of a discipline, or of several disciplines). In this one area especially, the theoretically grounded teacher of social studies, for example, is able, if competent in analysis, to analyze the level of education which a child has reached.
> 6. A period which is like the widely prevailing student teaching practice, but which is a research program and an analytical seminar in

[19] Marc Belth, *Education as a Discipline* (Boston: Allyn and Bacon, Inc., 1965).
[20] *Ibid.*, p. 103.

> which there is opportunity for diagnosis of the efforts of the prospective teacher examining his own educational experiments in his classes.[21]

Although one may argue with the details of Belth's position, he nonetheless stimulates thought in regard to the disciplinary status of education.

It is not the purpose of this book to pursue the argument of whether education is a discipline or not. The belief that education is an organized field of study about which theories may be built, however, is another matter. There is an increasing demand for rigorous research and theory building in education. Pioneer steps in this direction were taken by individuals such as G. Stanley Hall and Edward L. Thorndike, who employed the techniques of science in solving educational problems. Most of what is done in schools, however, either is done on a trial-and-error basis or because successful practice has made it respectable. What is now needed is for clear-headed thinkers to stretch for more rational explanations of what education does and should do. Individuals who are convinced that the only worthwhile activities for students of professional education are intensive study of the organized disciplines and extensive practical experience in schools tend to lead education away from badly needed systematic self-study. It really does not matter much whether education is called a discipline, a profession, or something else. Irrespective of label, evidence mounts that education is sufficiently mature to become an organized field of study.

A third kind of evidence for the advance of thinking about educational theory is reflected in the writing and research on the use of models in educational theorizing. The most extensive work over an extended period of time in this area was done by George and Elizabeth Maccia. The final report of their project brings together the essence of many previous reports.[22] Educational theory models were reproduced from models from such areas as set theory, information theory, graph theory, and general systems theory. Ways of deducing educational research hypotheses were described by use of models and symbols borrowed from theoretical formulations external to education.

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[21] *Ibid.*, p. 304.

[22] Elizabeth Steiner Maccia and George S. Maccia, *Development of Educational Theory Derived from Three Educational Theory Models* (Columbus, Ohio: The Ohio State University Research Foundation, 1966).

In educational theory, attention is being increasingly paid to rules for theory building as prescribed by both philosophers and behavioral scientists. These are real signs of mature development in a field of inquiry. But for sophisticated theory development in education to be realized, more has to happen. One mark of a sophisticated theory in a complex field such as education is for the theory to be undergirded by sub-theories of its components. Thus, we may say that the development of theories of administration, instruction, and curriculum would contribute to more sophisticated developments in educational theory since they are among the legitimate components of the educational enterprise. In the remainder of this chapter, we will discuss some of the theory building efforts in administration and instruction as sub-theories of educational theory even though it will not be possible to show one-to-one relationships between the developments in the sub-theories and developments in parent educational theories. We are a long way from that stage.

THEORY IN SCHOOL ADMINISTRATION

One special interest group in education, professors of school administration, has been giving serious attention to the problem of theorizing. What they have actually been doing is building a sub-theory of educational theory, namely the theory of administration. Much of their effort was sponsored by the University Council for Educational Administration, the National Conference for Professors of Educational Administration, and the Cooperative Program in Educational Administration. Individuals working on these projects have been concerned primarily with the improvement of the administration of the nation's schools and the teaching of school administration in colleges and universities, but they have used theory development as their route to improvement.

A characteristic feature of these attempts has been the insistence that education utilize the theoretical contributions of disciplines related to education, particularly those of the social sciences, for purposes of theory building in administration. Theorists in school administration have been following the same kinds of rules for theoretical work that were indicated in Chapter 2. Their efforts, for the most part, are of quite recent vintage. An

early written expression of their organized effort was the signal monograph by Coladarci and Getzels in 1955.[23] A later one is the book by Halpin in 1966.[24] It is not necessary for us to review the details of these efforts here. We make note, however, of some of the uses made of fundamental theorizing procedures.

For one, the theorists in administration have employed the meanings of theory and theorizing in the accepted traditions of the other behavioral sciences. Most writers on administrative theory make use of Feigl's definition of theory, or they create a derivative from it. For example, Coladarci and Getzels recognized the predictive functions of theory when they pointed out that:

> The term "theory" is often used to mean general principles which seem to predict or account for events with an accuracy so much better than chance that we may say that the principles are "true".[25]

In discussing the construction of theories, Halpin identified the basic elements of a theory as follows:

> Theories cannot be produced on demand: they evolve, and they evolve in many shapes and in many different degrees of precision. The building blocks of which they are composed — the constructs, the postulates, the assumptions — may be molar or molecular.[26]

Griffiths listed the following steps in theory development:

1. A *description* of administrative behaviors in one situation.
2. A *definition* of certain basic concepts.
3. A more *general statement* which is descriptive of average behavior in a limited number of situations.
4. A statement of one or more *hypotheses.*
5. An *evaluation* and *reconstruction* of the hypotheses in accordance with later observations.
6. The statement of principles.[27]

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[23]Arthur P. Coladarci and Jacob Getzels, *The Use of Theory in Educational Administration* (Stanford: School of Education, 1955).

[24]Andrew W. Halpin, *Theory and Research in Administration* (New York: The Macmillan Company, 1966).

[25]*Op. cit.*, p. 4.

[26]Andrew W. Halpin, "The Development of Theory in Educational Administration," *Administrative Theory in Education*, edited by Andrew W. Halpin (Chicago: Midwest Administration Center, University of Chicago, 1958), p. 5.

[27]Roald F. Campbell and Russell T. Gregg (eds.), *Administrative Behavior in Education* (New York: Harper and Row, 1957), pp. 563-564.

In a later writing, Griffiths presented the paradigm for theory development shown in Figure 4.

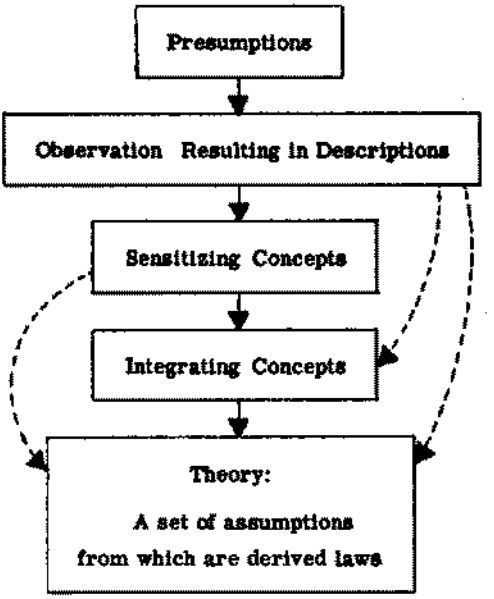

Figure 4. *Paradigm for theory development.* Adapted by permission from Daniel E. Griffiths," The Nature and Meaning of Theory," *Behavioral Science and Educational Administration,* Sixth-third Yearbook of the National Society for the Study of Education (Chicago: The University of Chicago Press, 1964), p. 104.

The foregoing illustrates the care and precision with which theorists in administration have been adhering to the kinds of rules for theorizing utilized in the behavioral sciences. The status of theory in administration is incomplete but promising. Much work has been done, but as one would expect, efforts on occasion have been at cross purposes with one another, oversimplified, or not sufficiently and carefully defined. Halpin described this condition well:

> In our efforts to develop theory in educational administration, we have been impeded by three substantive problems: (1) We have not

> been clear about the meaning of theory. (2) We have tended to be preoccupied with taxonomies and have confused these with theories. (3) We have not been sure of the precise domain of the theory we are seeking to devise.[28]

Despite these negative comments, Halpin demonstrated confidence that progress would continue to be made in theory development, and he included an elaborate paradigm for research on administrator behavior.

During recent years, there has been a change in theoretical work in administration from the directions previously described. Attention has shifted to management, organizational theory, and systems development. In this sense, less attention is being paid to metatheory as a base for developing theory in administration than to theories developed from analysis of operational settings. Theoretical models are being developed that may apply to the solution of administrative problems with respect to organization and functions in various environments. These are theory-building practices but in the language of organization functions, systems analysis, role delineation, and so forth.

It also can be said that administrators are very practical people, and there is some indication that conflicts arose between the theoreticians and the practitioners in educational administration. That a gap was generated between knowledge development and knowledge utilization in administration was evidenced, for example, by the publication edited by Eidell and Kitchel.[29] In spite of some rough waters, those who have toiled so arduously at theory-building efforts in educational administration have made very real and substantial contributions to the development of administrative theory as a sub-theory of educational theory. Hopefully, their theoretical and research efforts will continue because they have truly been leaders in this activity.

INSTRUCTIONAL THEORY

A more recent development in the area of sub-theories to educational theory is the rapid growth of thinking and research pertaining to instruction. Articles on pedagogy and reports of

[28] *Theory and Research in Administration*, *op. cit.*, p. 6.

[29] Terry L. Eidell and Joanne M. Kitchel (eds.), *Knowledge, Production and Utilization* (Eugene, Ore.: The Center for the Advanced Study of Educational Administration, *1968*).

research on teaching have been with us for a long time, but few, until recently, claimed to lead toward theories of instruction.

Jerome S. Bruner's book *The Process of Education*, touched off a great deal of dialogue about fundamental educational operations and conditions. The nature of instructional processes became a part of that dialogue. Then, in 1963, Bruner addressed the national conference of the Association for Supervision and Curriculum Development on the subject of theory of instruction. An adaptation of this address was published in the official journal of the association. In that article, Bruner proposed four aspects of a theory of instruction:

1. First, a theory of instruction should concern itself with the factors that predispose a child to learn effectively.
2. It should concern itself with optimal structuring of knowledge.
3. A third aspect of a theory of instruction deals with the optimal sequence that is required for learning.
4. Finally, a fourth aspect of a theory of instruction should concern itself with the nature and pacing of rewards and punishments and the successes and failures.[30]

Whether Bruner was causal or not, a flurry of activity under the general category of theories of instruction followed his presentation. Most of the activity was an inherent part of the ongoing program of the Association for Supervision and Curriculum Development. A sample of such activity merits attention here. Macdonald argued for a clarification of terms associated with instruction. As a beginning point, he suggested that a valid distinction be made among curriculum, instruction, and teaching. Having singled out instruction as an unique concept among the three terms, he then discussed as needs in research and theoretical work adequate models of instruction, empirical analysis and theory sifting from other areas, and the identification and description of criterion variables.[31]

Toward the end of 1963 and the beginning of 1964, the Association for Supervision and Curriculum Development sponsored its ninth Curriculum Research Institute. Papers from that institute were published in a pamphlet entitled *Theories of*

[30]Jerome S. Bruner, "A Theory of Instruction," *Educational Leadership*, 20:523-532, May, 1963.
[31]James B. Macdonald, "The Nature of Instruction: Needed Theory and Research," *Educational Leadership*, 21:5-7, October, 1963.

Instruction.[32] It is not necessary for us to review all of the elements of this publication. Most of the papers were written from the particular research bias of the authors. Individual research programs were related to theory of instruction in all cases. A major point to note here is the emphasis on carefully controlled research as a basis for reaching generalizations about teaching, or instruction, whichever term is used. These papers are an excellent illustration of the kinds of steps that need to be taken to build different theories in a given field, in this case, instruction.

A similar publication followed in 1966. This publication was an outgrowth of a joint seminar on teaching sponsored by the Association for Supervision and Curriculum Development and the Center for the Study of Instruction of the National Education Association. Here again, the emphasis was upon research in the classroom, and the authors of the included papers assumed diversified postures toward the character of research done.[33]

Also in 1966 Bruner published *Toward a Theory of Instruction*.[34] In it, Bruner expanded his previously announced, or inferred, theory of instruction. His point of departure was the same four major features of a theory of instruction previously mentioned. The foregoing publications are very illustrative of initial efforts of individuals to define and to theorize about instruction.

The position paper of the Commission on Instructional Theory of the Association for Supervision and Curriculum Development might well provide a launching platform for even more intensified effort in the development of theories of instruction.[35] The position paper was a composite of the thoughts and ideas of the various commission members. The commission, conceiving instructional theory to be a very complex phenomenon, concluded that sub-theories should be built as supports for it. This position is very much in line with the one assumed in Chapter 2, namely, that complex theories are characterized by supporting sub-theories. After debating the pros and cons of philosophical

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[32]James B. Macdonald and Robert R. Leeper (eds.), *Theories of Instruction* (Washington: Association for Supervision and Curriculum Development, NEA, 1965).

[33]*The Way Teaching Is* (Washington: Association for Supervision and Curriculum Development and the Center for the Study of Instruction, NEA, 1966).

[34]Jerome S. Bruner, *Toward a Theory of Instruction* (Cambridge: Harvard University Press, 1966).

[35]Ira J. Gordon (ed.), *Criteria for Theories of Instruction* (Washington, D.C.: Association for Supervision and Curriculum Development, NEA, 1968).

and scientific theory, the commission took the position that it would concern itself primarily with scientific theory. The commission defined theory as follows:

> In this document the term is used in the sense in which it is used in the natural sciences to represent a set of interrelated generalizations, derived from data, which permit some degree of prediction or control over the phenomena to which they pertain. Thus a *theory of instruction* would be represented by a set of statements, based on sound replicable research, which would permit one to predict how particular changes in the educational environment would affect pupil learning.[36]

From this definition, it may be noted that research and the development of instructional theory need to be tied together. In this way theorists are encouraged to develop theories inductively from generalizations based on experimental data.

The position paper included a series of criteria which may apply to the analysis of any scientific theory, but in this case, they are focused upon the development of instructional theory. The criteria were:

1. A statement of an instructional theory should include a set of postulates and definitions of terms involved in these postulates.
2. The statement of an instructional theory or sub-theory should make explicit the boundaries of its concern and the limitations under which it is proposed.
3. A theoretical construction must have internal consistency — a logical set of interrelationships.
4. An instructional theory should be congruent with empirical data.
5. An instructional theory must be capable of generating hypotheses.
6. An instructional theory must contain generalizations which go beyond the data.
7. An instructional theory must be verifiable.
8. An instructional theory must be stated in such a way that it is possible to collect data to disprove it.
9. An instructional theory must not only explain past events but also must be capable of predicting future events.
10. At the present time, instructional theories may be expected to represent qualitative synthesis.[37]

Such statements as those above are very generalized statements that could be applied to any theory. The very difficult problem for those who would develop instructional theories is to

[36] *Ibid.*, p. 3.
[37] *Ibid.*, pp. 16-23.

box in the set of events subsumed under the concept "instruction." For example, do teaching and instruction have the same meanings? Is curriculum subsumed under teaching or instruction? What behaviors are associated with teaching? These questions have to be answered if one is to be serious in his intent to describe or to build anything resembling a theory of instruction.

Hosford addressed himself to these problems. He began with criteria statements and function statements for instructional theory similar to those of Bruner and Gordon, but the distinctive feature of his work is that he went much further. With criteria and functions as background, Hosford developed a basic rationale followed by postulates, laws, rules, and hypotheses as theory statements.[38]

The concept *teaching* appears to be used more broadly than the concept *instruction* especially in research. Greenberg carefully analyzed the research of Bellack, Flanders, Hughes, Smith, and Taba on classroom teaching.[39] These studies will be familiar to most readers so they need not be reviewed here. It is sufficient to say that the general approach in these studies was to analyze and classify behaviors (mostly verbal) of teachers and pupils in classrooms. They have been extremely useful to the profession in helping to identify teacher behaviors that had not previously been associated with teaching particularly through the classical methods books. Broudy distinguished three types of teaching. He identified *didactics* as the imparting and reinforcing of skill and knowledge, *heuristics* as efforts to promote discoveries by pupils, and *philetics* as behaviors associated with love or a teacher's concern for the emotional well-being of the pupil.[40] An interesting paradigm for research on teaching has been developed and used in Sweden by Dahllöf, Lundgren, and others. The paradigm has three components: frame factors, teaching process, and learning outcomes. Frame factors refer to (1) factors given in the curriculum (goals and content), (2) time available for instruction, and (3) class composition according to the ability of pupils to reach

[38] Philip L. Hosford, *An Instructional Theory – A Beginning* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1978).

[39] Selma B. Greenberg, *Selected Studies of Classroom Teaching: A Comparative Analysis* (Scranton, Pa.: Intext Textbook Company, 1970).

[40] Harry S. Broudy, "Didactics, Heuristics and Philetics," *Educational Theory*, 22:251-261, Summer, 1972.

goals. The object of this research has been to study the effects of the frame factors upon the teaching process and resulting learning outcomes.[41] The above examples are but a small sample compared with what may be found in the *Handbook of Research on Teaching* and the *Second Handbook of Research on Teaching*. The tables of contents of those volumes would make it appear as if the field is very broad indeed. Nonetheless, there seems to be little question that a great deal of leadership in the development of components of educational theory has been demonstrated by those working upon theory building in the area of instruction.

SUMMARY

In this chapter, we have examined examples of the kinds of theorizing done within the broad field of education. The purpose in so doing was to link the discussion of Chapter 2 with subsequent discussion of curriculum theory. We have examined approaches to educational theory and two sub-theory areas of educational theory — theory in administration and instructional theory.

Meaningful relationships may be established between the work of theorists and the work of practitioners, but theory and practice are not one and the same. Theory may direct practice, or it may explain the nature of practice. Conversely, data for theory may come from practice. Theories, in turn, are tested in the crucible of practice. The relationship is reciprocal.

Individuals frequently have used traits and names of philosophies of education and theories of education interchangeably. Dimensions of philosophy have much to contribute to educational theorizing both at the level of prescriptive and descriptive theory, but philosophy and theory are not coterminous domains.

An excellent example of educational theorizing at work is in the field of school administration. Administrative theory has been developed to its present stage as a sub-theory of educational theory. Theorists in administration have disciplined themselves to use basic rules for theorizing adopted from behavioral and social sciences.

[41] See Urban S. Dahllof, *Ability Grouping, Content Validity, and Curriculum Process Analysis* (New York: Teachers College Press, Columbia University, 1971) and Ulf. P. Lundgren, *Frame Factors and the Teaching Process* (Stockholm: Almqvist & Wiksell, 1972).

Developments in the area of instructional theory are very encouraging. A substantial effort is being made to develop instructional theory as a sub-theory to educational theory. It is significant that the domain of theories of instruction is being discriminated from other potential areas of education such as administration and curriculum. It also is significant that theory development is being related to carefully designed research.

It is true that we are still unable to associate specific educational theories with specific sub-theories in such domains as administration, instruction, and curriculum, but the demand for bringing together the theoretical work done in the sub-theories into total educational theory is increasing. Although the dimensions of educational theory are far from being clearly identified, the profession is attempting to develop more rational explanations for those it is able to identify. The impetus to sub-theory building, the use of models for directing thinking and explanation, and the thrust of theory-oriented research are evidence of healthy activity in the area of educational theory.

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