

# **EDUCATIONAL PSYCHOLOGY**

## **The Development of Teaching Skills**

**DAVID R. STONE  
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## **EDUCATIONAL PSYCHOLOGY: The Development of Teaching Skills**

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# PREFACE

Psychologists, acting as catalysts, often serve educators and educators-to-be by analyzing and interpreting research that contributes to more effective teaching. In this way, psychologists can aid practical educators to use meaningfully a variety of concepts and principles that clarify and improve educational practices. It is the hope of both educator and psychologist that educational activities can thus be made more specific and useful. It is the premise of this book that the complex and sometimes diverse interests and needs of both educators and cooperating psychologists can best be met when focused on *skills* which teachers use to meet the needs of school learners. These *instructional* process skills join with *learning* process variables in a common denominator, the student.

In years past the authors have had comments from teachers and from education students that educational psychology was not as applicable as it should be to the classroom situation. Such comments motivated this text with its focus on skills. The skills treated are comprehensive in that all skills dealt with in major texts in this field are included; at the same time, no single major text available in this field covers all the skills which are included here.

The skills are described principally in terms of relevant topics, each of which can serve as a guide to skill development. The text is designed to provide an organized inventory of topics, principles, and suggested skills which might be used both to define and to extend professional training. The skills referred to are not discussed in an abstract way; rather, the reader is engaged in specific inquiries regarding each of them, and activities are provided in which students who are training to be teachers, or teachers who are seeking self-improvement, can begin significant work in a variety of skill areas.

This text proposes that five major clusters of factors or variables influencing learner behavior need to be considered by a skilled teacher. *First* is a cluster of behavioral factors related to the context of learning,

that is, to the learning *situation* or environment in which the learning is taking place. *Second* are those characteristics and behaviors involving the sensory-motor, intellectual (cognitive), and personality (affective) *readiness* of the learner. *Third* are learner behaviors and characteristics concerned with the internal *ideational* processes of perceiving and thinking. *Fourth* are those behaviors involving the learner's activities as seen in both the tentative and the confident *trials* made by the learner to actualize instructions and goals. Finally, *fifth* are those learner behaviors which are rewarded and corrected in a process called *feedback*.

Related to each of these clusters are specific kinds of teacher skills which can be developed to enhance the learning behaviors of each student in our schools. In each cluster are skill areas which include specific skills needed by teachers or teachers-to-be who are seeking to become more competent as professionals.

The discussion of the specific skills in each skill area constitutes the major portion of the chapters in the text. Since each skill area is designed to describe how school learners may be helped to get the most out of their school experience, consider these aims which a competent teacher might have in helping in each cluster and related skill areas:

#### I. Situational Cluster

1. Helping students to interact socially with fellow students in constructive work and study groups.
2. Helping students to use time wisely and to care for and enhance the physical aspects of both personal space and the space devoted to learning.
3. Helping students to adapt to cultural values which support learning.
4. Helping students to respond to school with attention and concentration to stimuli which begin and maintain learning activities.

#### II. Readiness Cluster

5. Helping students to become physically healthy and coordinated.
6. Helping students to enhance their intellectual potential.
7. Helping students to develop a mentally healthy and mature personality.

#### III. Ideational (Thinking) Cluster

8. Helping students to perceive needed details and patterns.
9. Helping students to develop basic concepts (vocabulary) and the cognitive facility needed to comprehend educational experiences.

#### IV. Trial Cluster (Student Responses to Learning Activity)

10. Helping students to remember better, so that past experience can make present activity more effective.

11. Helping students to make products, whether mental or physical, which are well defined and well executed.
- V. Feedback Cluster
  12. Helping students to respond to rewards which are reasonable, workable, and fair.
  13. Helping students to use correction of errors to improve performance.
  14. Helping students to be able to make better decisions, based on creative flexibility and problem solving.

Teaching skills which help learners in the above ways may be developed by using the entry level applications given in the text. It is not possible to become fully skilled by reading a book, or by teaching for a few years. But it is possible to make a beginning. The quality of the skills used depends in part on the scope of the learner's needs which are taken into account and, in part, on the behaviors which the teacher or teacher-to-be is able and willing to develop in order to meet them.

## ACKNOWLEDGMENTS

It is a pleasure to acknowledge a variety of sources of personal support and enhancement rendered over an extended period of time, especially from family members.

The literature of learning provides a solid basis for the description of skilled teacher behavior. The debt of a text writer to the cumulative development of principles and data in the professional literature is enormous. Without a perceptual frame of reference, however, the valuable wealth of detail could be overwhelming. By organizing the literature into clusters and skill areas it becomes relatively more manageable. In such a framework it is quite apparent that all skill areas are definable with an in-depth array of literature, both applied and theoretical. Two major dimensions of teacher competence are *not* addressed by the skill model used in this text to structure the selection and collection of relevant literature. They are, (1) the literature related to the development of personality qualities in teachers, and (2) the development of subject matter expertise, i.e., knowledge and understanding in reading, language arts, science, math, etc.

Within such constraints, the structure of the model is dependent upon suggestions from many colleagues over a period of several years with particular help in the early stages from Roger Mouritsen, Carolyn Steel, Malcom Allred, and Caseel Burke. A blue-ribbon group selected to develop the Skills Model has been significantly involved in refining the specifics of a wide array of concepts related to teaching competency. Par-

ticipants in this group have been Malcom Allred, James Baird, Caseel Burke, Phillip Carter, Jefferson Eastmond, Luan Ferrin, Arthur Jackson, and Blair Low.

Closely associated with this project as writers and/or reviewers and/or users of varied skill areas have been: Bryce Adkins, Ross Allen, Whorton Allen, Lamar Allred, Oral Ballam, Jim Blair, Lloyd Bartholomew, Clyde Bartlett, Joan Bowden, Varnell Bench, Michael Bertoch, Ron Bingham, Mary Carigan, Gary Carlston, Bill Cowan, Don Daus, Bryce Draper, Jim Dunn, Bernie Hayes, Jay Hicken, Mona Higbee, Ted Ivarie, Burdette Johnson, Gail Johnson, Dick Knight, Ken Small, Austin Loveless, Izar Martinez, Glen Maw, Kent Meyers, Vere McHenry, Jim Miller, Judy Minier, Jay Monson, Rick Moody, Jean Pugmire, Wes Roberts, Ben Rosner, John Ryan, Jim Shaver, Tom Stephenson, Steve Soulier, Marvin Tolman, Vern Wade, Mark Webster, Evelyn Wiggins, and Blaine Worthen. Many skillguide users and students have also made significant contributions.

A pivotal concept, *needs*, became the focus of group attention because Art Jackson sustained the concept of learner needs. Emphasis on needs has resolved numerous problems, broadened the scope of applications, and made possible a more empirical analysis of behavioral outcomes.

All of those acknowledged here have made significant editorial contributions; we also wish to acknowledge the special expertise of reviewers C. H. Patterson, Emeritus, University of Illinois, and T. A. Chandler, Kent State University. Each made very valuable suggestions which favorably reinforced text themes and structure, as did a gracious editor, George Middendorf, and efficient project editors, Jon Dash and Jo-Ann Goldfarb.

We also wish to thank several class generations of students, both undergraduate and graduate, who have used and responded to the use and evaluation of a skills approach to teacher-competence.

# TO THE INSTRUCTOR

This section briefly covers, from the perspective of an instructor, the major clusters of skill areas to be discussed in the text. It is comprehensive because the list of skills within each area which teachers use to help learners is comprehensive. It is simple because basic important entry skills provide beginnings in each area. It is complex in that the potential for a teacher to improve in each skill area is unlimited.

## A LEARNING SYSTEM

A simple, but comprehensive, learning-process system or model is used in this text as an instructional device to clarify the task of the reader by organizing into meaningful clusters a great variety of relevant research and practice which describe teaching skills. The system used here is not elaborate, nor is it pretentious; it is simply a clustering of five major kinds of learning factors or variables which can be found as independent or dependent variables both in learning experiments and in classroom behavior. The text reflects the substantial body of topics which have developed in the discipline of educational psychology supported by carefully selected items from clinical, general, social, and industrial psychology into a viable source of instructional principles.

The system includes five clusters of learning-process variables which subsume a variety of skills for use in instructional intervention to enhance learning. There is no *necessary* sequence in the use of these skills since the needs of a learner may require the use of any one or more skilled teacher intervention or another kind at a given time.

Learning theorists are sometimes spoken of as being stimulus oriented or response oriented, depending upon their emphasis. The S-O-R system includes both *stimulus* characteristics and *response* characteristics with regard to an *organism* (learner). The clusters used to describe learning behavior in this text were derived from this system by adding *ide-*



*action* and *feedback* to the S-O-R sequence in the following way: "S" (the stimulus) arises in the learning environment, "O" is transformed to include the internal mediational processes of *readiness* (R) and *ideation* (I), which reflects both developmental psychology and the current cognitive emphasis. These are followed by *trial* (T), used in place of *response* as a more active descriptor. Then, adding *feedback* (F), following Thorndike's (1931) work on "knowledge of results," completes the learning cycle. Thus, a better rendition of the formula is:  $S \times R \times I \times T \times F$ . A highly abstract and sophisticated version has been developed by Petrino-vich, (1979) who stresses stimulus and response variables, and includes the required feedback loop.

Important historical developments are to be found in each of the following clusters:

### **First, the Learning Situation**

The historical Gestalt-based (Morris, 1946) awareness of the influence of "significant others" as stimuli suggests that stimuli for learners exist in a "field" of forces which affect behavior. Thus, each learner exists in a social world of "others." Also, each learner exists in both physical and cultural environments. All of these "field" elements are primarily external to the learner; nevertheless, they enhance or inhibit learning. This is particularly seen as a teacher selects and effectively presents instructional stimuli which direct the learner's interest and attention toward valued lessons from these "worlds." In doing this, principles of contiguity and stimulus association can enrich the communication.

### **Second, the Readiness of Learners**

This historical work of measurement specialists has made it clear that mental aptitude level can profitably be considered in educational planning. Using both psychometric and informal techniques, the learner's readiness can be estimated with considerable validity and consistency; further, the descriptions of cognitive development by Bruner (1973) and Piaget (1976) have shown that when teachers adapt both style and age-related materials and activities to the learner's readiness level, learning behavior is enhanced. The theme of intellectual readiness is also carefully described in the text by referring to the work of Binet, Wechsler, and Guilford (see Skill Area 6 for references). The description and practical use of the structure of the intellect has been paralleled by similar efforts to describe both the sensory-motor domain and the affective domains of personality. Also, the consistent use of both formal and informal readiness measures in these three domains of readiness (sensory-motor, cognitive, and affective) reflects the universal concern with readiness as an instructional process-variable.

### Third, Thinking or Ideation

A persistent historical theme is the traditional and continuing aim of education to promote cognition or *reasoning*. But this theme has had its ups and downs, from attempts to define "pure reason" through periods of "antiintellectualism." Fortunately, a great deal of excellent research, such as that reported from Bruner's (1957) work on perception to Bourne's (1974) on concept learning has kept this part of the instructional process area alive, well, and fruitful. Professional educators can learn to help learners to perceive needed details and to form concepts and use them with increased comprehension. The literature of the past five years has shown a great deal of renewed interest in this area associated with the term *cognition*.

### Fourth, Trial

Learning theorists (e.g., Bruner) have emphasized the importance of activity on the part of the learner, but it is perhaps from industrial and business education as well as psychology that the most useful suggestions for improving a learner's chances for making trials leading to successful work outcomes have come. The stress on task analysis and stating objectives in behavioral terms has been productive in the sense of developing explicit immediate *work* goals. Of course, the great aims of education have been stated historically as general life-goal curricular objectives, but recent emphasis has been much more specific, such as in mastery and competency-based learning which involves the specification of particular tasks. In this regard, the traditional topics of memory and repetition are not neglected, and some kinds of learning may be accomplished in discovery fashion!

### Fifth, Feedback

The learning process is verified when, as Thorndike stressed, the learner is given knowledge of results. Without internal and/or external confirmation, learning cannot take place. This use of essential informational feedback to diagnostically pinpoint errors is a necessary, but not a sufficient guide for learning. A parallel process, affective feedback, that is, providing reinforcement through the use of appropriate reward and logical negative consequences is also used in motivating trials. The work of operant behaviorists has in recent years stressed the power of reward. Through the punctual use of both testing to measure performance and of rewarding to motivate performance, skilled teachers make use of two major theories of learning, cognitive and operant, both of which suggest skills which can be used to significantly change a learner's behavior.

Instructional techniques linked to these major learner-centered processes can now be stated more and more clearly (Burke and Stone,

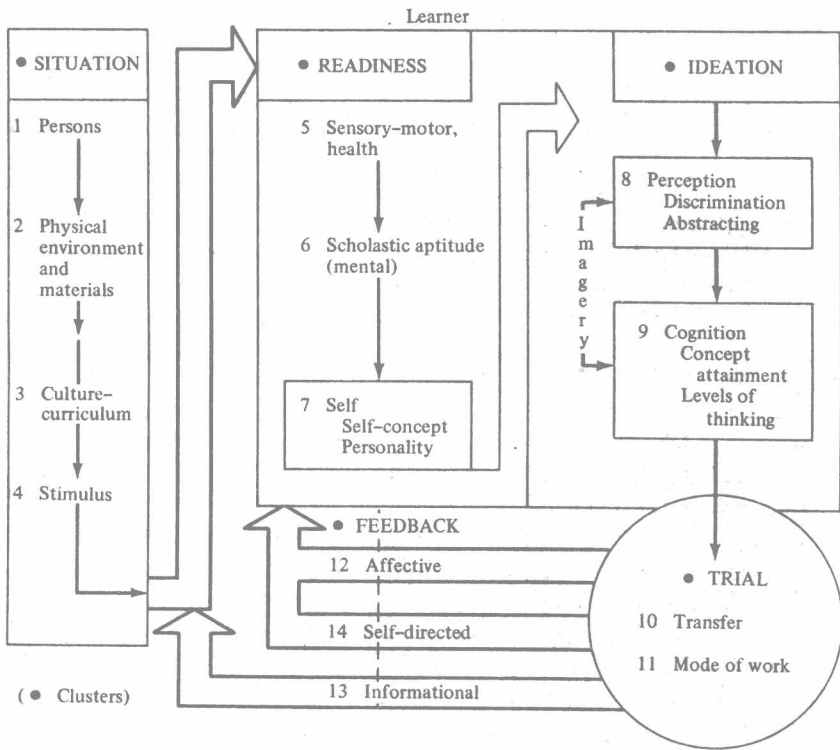
1975). As research and development generate data for analysis and evaluation, a wider variety of skills and skill combinations can be examined.

## TEXT LANGUAGE AND STYLE

In the past, the most common approach used in major educational psychology texts to display the vast amount of material available to the psychology-education partnership has resulted in the encyclopedic style text. These texts have covered a great deal of ground; but we feel they have lacked the focus of a five-part process model, implying use. The proposed system for this text is focused on *teacher skills* which can improve the school learner's performance by satisfying his or her needs. This becomes a way of synthesizing a wide range of relevant topics into the five major parts of the text. Focusing on a learner's needs is a useful way of planning to manage learning skillfully. The learner's behavior in this context is a function of his or her *learning situation, readiness, ideation, trial, and feedback*. This process may be represented by the formula  $L = f(S \times R \times I \times T \times F)$ . All learner variables are thus assumed to be indispensable to describing or promoting learning behavior. There is no intent to imply any quantified or mechanistic quality. It does mean that independent variables in each cluster can be identified both in the experimental literature of learning and in real-life classroom behavior. From these can be derived related teaching skills.

We have chosen a writing style that is also in contrast to that often found in encyclopedic reference-style texts. The style of this text is conversational, sometimes even to the degree of using "you" and "we." We have presented enough material to make a point, but have not tried to evaluate critically a particular subject in depth. We hope this style will stimulate interest in further reading. For this reason, academically oriented readers may be critical of the level of detail. If so, we can only say—try to read from a student's point of view. Extensive classroom use of the material has shown it to be rather closely gauged to the interest and reading level of college students who have chosen this field of study. Within each cluster, each skill area includes a glossary of terms, some "Inquiries," which suggest topics for study or discussion, and two personal, experience-oriented "Application Projects." We have enjoyed grading our students' performance on these projects rather than using a traditional subject-content test. Figure 1 displays the major clusters referred to here, and includes references to specific areas of skilled behaviors exhibited by trained teachers.

It has been a challenging task to try to give relatively equal emphasis to each of the major areas of application and research which have been important to both educators and psychologists who have been seeking to improve skilled teacher behavior over many decades. We acknowl-



**FIGURE 1** A Skills Model Showing Clusters and Skill Areas

edge the contribution of the many students who have class-tested the text, and of the many reviewers who have read all or part of it. To us, a very interesting general result developed: there was little or no criticism of the relevance of any topic, but also each topic had its own strong advocates. We many times commented on and enjoyed the enthusiasm which these separate topic advocates manifested. This strengthened our resolve to do as well for EACH topic as we could, in the hope that these enthusiasms could cross-fertilize each other, that the shared expertise would result in both the instructor's considering a comprehensive approach, and that the teacher or teacher-to-be would benefit by a careful look at major areas of potential skill improvement.

We received many format suggestions which countered each other, with regard to such items as a glossary, kind of bibliography, elementary or secondary level, use of chapter objectives, and so forth, so we have tried to make those decisions on the basis of what *our students* at both elementary and secondary levels have mostly favored. Because of the conversational student-centered style, we have not been overly concerned with some seeming inconsistencies such as (once in a while) adding a new

thought in a summary section, introducing a new word out of the blue in order to promote the use of the glossary, and even including some inquiries and projects which require the student to do a little independent synthesizing, as opposed to presenting it step-by-step in the text, and then having the reader follow step-by-step in a project. But, while this approach is more flexible and more like the communication which might occur between two interested friends, we have not made such flexibility the rule; rather, most of the time, the discussions and assignments are specific and show traditional orderliness!

The task of bridging traditional and modern literature and practice is not an easy one. Many topics have roots in the work of early pioneers whose insights are crisp and fresh, even today; and we have not hesitated to refer to these. We have found that all 14 of the skill areas discussed as major topics in this text have been the concern of responsible educators and psychologists both before and after William James. Changes, rather than representing radical departures from the tradition of effective teaching, seem more to us to be refinements, qualifications, and elaborations of generally recognized practices. Roots are everywhere! This broadening has led historically from simpler explanations of learning, such as stimulus-response, to more complex ones involving cognition, that is, inner-directed learning activity. What we are saying is that all of the teaching skill areas have been recognized as important topics for an extended period, but that our understanding and utilization of them has been made more substantial and effective with the passing decades. At the same time, we have shown at least some current application and rationale for each and every skill area to the degree that the student can at least appreciate the value of skill training in that area and begin to develop it.

Please do not assume that you will be fostering extended skill training. We are first concerned with defining each skill area and then with providing some beginning intellectual and practical activity for each reader, so that one or more ENTRY skills may be begun in each area. Our major concern is to allow the reader to become aware of the comprehensive nature of competent teaching and, then, to get started. We are well aware that teachers often learn important new things about skilled teaching behavior every year for at least the first five years on the job.

### **IN-CLASSROOM IMPLICATIONS OF INSTRUCTIONAL AIMS**

This book is intended as a student-centered, applied orientation to the field of educational psychology. Since most of the outcomes are student centered, our notion is that the instructor is to serve more as a manager and consultant than in the traditional role. We assume that the instructor

will manage activities and applied learning projects, supervise teachers and prospective teachers in groups, and coach or model various successful teaching techniques.

Since the field of educational psychology is so vast, a basic decision for any one text must be made with its regard to its coverage. Rather than an encyclopedic-reference approach, we have chosen to use a clustered-topic approach, done in conversational style. In-depth study is encouraged by additional self-directed reading and project work. The fact that the topics found in the research literature of learning may be categorized into related topics is the first step in developing a claim for content-validity. Each skill is thus a portion of content evidence of the validity of its categorical area. This is an interactive process because the clusters then serve as a basis for decisions as to the inclusiveness of other major topics. We have found no significant research or practice to justify a sixth cluster. Our experience was that over 90 percent of all the learning literature could be included reasonably in the five clusters described in the conceptual framework or (system) of this text. In addition to the extensive breadth and scope of the overall description of the teaching-learning process the representative bibliography will attest to the importance of the skill topics in each chapter.

Following the literature review, the major support for this kind of an approach to defining and developing teaching skills has come from the classrooms we have observed for the past several years. In every case where a major independent variable affecting learning behavior appeared in the literature, a real-life parallel was found in the work of individual teachers in classrooms who were meeting learner needs. We seldom found all the skilled behaviors in the repertoire of a given teacher, but in a representative staff in a given school we always did. Of course, some skills were expressed at higher levels of proficiency than others. But, we found no positive skills in any group of teachers which could not be meaningfully categorized into this five-cluster system.

When these five major content areas are provided as simplified advanced organizers, they can serve to indicate needed scope and sequence to students of learning. General orientation sessions can be based on these five major clusters, and then can come group seminars and individual study of skill areas which suit the style of any individual instructor.

We owe a great debt to the scholars and researchers who have done so much to clarify the skill areas. We have synthesized large numbers of articles and books into our own observations of current trends and suggestions and are, of course, responsible for misinterpretations if they occur. Only a relatively few have been referred to *specifically*. This is the style we have found students respond to best. We are not writing to "say it all" about a topic, nor to impress our academic colleagues. We are

writing to give students a sense of the scope of what is available but, at the same time, to demonstrate that important skill areas can be defined, discussed, and set up for use.

The parsimonious description of an event or process is the simplest adequate one, but we have discovered that learning theory *per se* is too simple or restrictive to adequately describe learning in the classroom. Also, teachers' *individual* behaviors are too numerous to easily be counted. The alternative is to study the learning process in terms of well-defined skill areas, where the specific behavior becomes an example of a class of behaviors.

We are grateful to the many readers of both chapters and larger segments of the text. The general trend has been to support what several called a "challenging" new way to broaden the usefulness of educational psychology. The focus on the needs of school learners seemed to resolve one of the major public-image problems of educational psychologists who have often been perceived as too "soft" by experimental psychologists, and too "tough" by educators.

It has also been a great pleasure to see how students can and do begin to use principles of learning both in educational design and in educational practice.

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