EDUCATIONAL
PSYCHOLOGY
A COGNITIVE VIEW
SECOND EDITION

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Educational Psychology

A COGNITIVE VIEW

Second Edition

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Dedicated—

To my wife, Pearl (D.P.A.)

To my wife, Joan (J.D.N.)

To my parents, Vahan and Anna (H.H.)

If I had to reduce all of educational psychology to just one principle, I would say this: The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.

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PREFACE TO THE SECOND EDITION

The second edition of this book is generally congruous with the senior author's conception (expressed in the first edition) of educational psychology as an independent applied discipline dealing with the nature, outcomes, and evaluation of school (subject-matter) learning, and with the various variables of cognitive structure, development, intellectual ability, practice, motivation, personality, instructional material, society, and teachers that influence it. Like the first edition, it is almost exclusively concerned with *meaningful* learning, particularly *meaningful* reception learning. However, learning by discovery, problem solving, concept formation, and creativity are fully discussed. We do not by any means discount the importance of discovery learning. Rather we believe that students acquire large bodies of subject matter primarily through meaningful reception learning that is facilitated by appropriately designed expository teaching and instructional materials. We make a clear distinction between the rote ↔ meaningful dimension of learning and the reception ↔ discovery dimension.

The major change in the organization of the book was to place the chapter on concept formation immediately after the chapter on meaning and meaningful learning, instead of considering it in the latter portion of the book devoted to discovery learning. The rationale for this change is that even though concept *formation* is a form of discovery learning, the major type of concept acquisition in school settings is concept *assimilation* (which is one type of meaningful reception learning).

The theory of cognitive learning first developed in *The Psychology of Meaningful Verbal Learning* (1963), and expanded in the earlier edition of this book (1968), has been modified somewhat in the present edition on the basis of research and feedback from students and colleagues. We have chosen to label this theory of learning as *assimilation* theory to emphasize a major characteristic; the important interactive role that existing cognitive structures play in the process of new learning. We have explicitly described the elements of assimilation theory, including an emphasis on the concepts of subsumption, progressive differentiation, and integrative reconciliation.

In revising the first edition, therefore, we paid selective attention to new developments in educational psychology that were relevant to our non-eclectic view of the nature of educational psychology as a whole, as well as to our patricular theoretical view of the nature of subject-matter learning. Because of the virtual demise of the curriculum reform movements, we have chiefly emphasized in Chapter 10 the various ways of presenting instructional materials, and the advantages and disadvantages of each, in accordance with assimilation theory. Similarly, since the mediational theory of meaning is now a dead issue, it is not discussed in the present edition.

The chapter on individual differences in intellectual ability has been expanded to include both the retarded child and the child with learning disabilities. The discussion of the nature–nurture problem in the growth of intellectual abilities also reflects recent controversial developments regarding the relative influence of each factor, particularly in the determination of "racial" and social-class differences in intellectual ability, as well as differences attributable to cultural disadvantage. In the sociocultural area, numerous changes in the attitudes and self-concepts of black children and of students' attitudes toward the school have been explored. The relatively recent emergence of performance/competency-based teaching has been included in the chapters on teacher characteristics and principles of measurement and evaluation.

The ways in which this book is different from more traditional eclectic text books in educational psychology, and the rationale for excluding much of the material customarily found in these books, are fully discussed in the Preface to the First Edition (following this preface) and need not be repeated here. In the interest of clarifying many complex ideas, however, we have made use of schematic diagrams. The organization of the book, however, is still deliberately consistent with the principles of progressive differentiation and integrative reconciliation, which, we believe, are of great importance in promoting meaningful learning of subject matter.

The many changes in the second edition that enhances its readability—a glossary of terms used in assimilation theory; the use of organizer-like introductions* to each of the chapters (which provide ideational scaffolding for the material that follows and integrate the chapter with preceding and succeeding chapters); the use of schematic diagrams; a livelier (if less precise) prose style; and the wider use of examples illustrating assimilation theory that are applicable to the classroom—all make this edition suitable for undergraduate as well as graduate students in educational psychology.

It is an integral part of our theoretical view of school learning that a body of subject matter is much easier to understand and remember if it is relatable (anchorable) to organizing and explanatory ideas derived from a

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* See footnote on p. 171 for a discussion of why these introductions are not true organizers as we define the term. Hence, they should not be used as models of genuine advance organizers (see Glossary).

single theoretical stance with face plausibility than if it is a mere compendium of discrete, unintegrated and unexplained facts related at best to a wide variety of contradictory and often irreconcilable theoretical views. This has been the case particularly with the typical eclectic textbooks in educational psychology. Such books still adhere primarily to a psychology of learning that is more applicable to rats in a maze than to pupils in a classroom. Sometimes it is combined with an information theory or a cybernetic model (without any attempt to bridge the gap between these theories) that is only 15 years out of date in contrast to the 25 years in the case of rote (behavioristic) learning theory.

We are indebted to Pearl Ausubel for critical reading of the manuscript and for many helpful suggestions in the organization and presentation of ideas.

We gratefully acknowledge permission to use illustrations and materials from Chapters 5 and 6 of *A Theory of Education* (J. D. N.), published by Cornell University Press.

One of us (H. H.) wishes to express her thanks to Ruth Birnbaum for her valuable assistance in the preparation of the manuscript.

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PREFACE TO THE FIRST EDITION

THE BASIC PREMISE UNDERLYING THIS BOOK is that educational psychology is primarily concerned with the nature, conditions, outcomes, and evaluation of classroom learning. Unlike most of its predecessors in the field, it does not conceive of educational psychology as an amalgam of learning theory, developmental psychology, mental hygiene, and educational and psychological measurement. More specifically this text differs from these other works in the following six respects:

First, it does not consider such topics as child development, adolescent psychology, the psychology of adjustment, mental hygiene, personality, and group dynamics as ends in themselves. It considers them only insofar as they bear on and are *directly* relevant to classroom learning. This criterion of relevance has, of course, also been adopted by other textbooks in the field, but more in theory than in actuality. I have endeavored to include in this volume only psychological theory, evidence, problems, and issues that are of direct concern either to the serious student of education or to the future teacher in his role as facilitator of school learning.

Second, it eliminates *entirely* many normally covered topics drawn from general and developmental psychology which bear little or no relation to classroom learning. Examples include the nature and development of needs, general determinants of behavior, reactions to frustration, developmental tasks, mechanisms of adjustment, parent-child relationships, noncognitive development during infancy and the preschool years, and physical development. It is true, for example, that physical development during childhood affects motor coordination, writing, and popularity in the peer group, and that physical changes in adolescence affect the self-concept, emotional stability, peer relations, and athletic skills. But an educational psychology textbook cannot cover everything. Prospective primary-school teachers will presumably have a course in child development, and prospective secondaryschool teachers will presumably have a course in adolescent psychology. Similarly, certain aspects of motivation *are* obviously relevant for classroom learning, but a general discussion of needs, their nature, function, development, and classification, such as would be appropriate in a course in general psychology, hardly seems necessary.

Third, this text is principally concerned with the kinds of learning that take place in the classroom; that is, meaningful symbolic learning—both reception and discovery. Some kinds of learning, such as rote learning and motor learning, are considered so inconsequential a part of school learning as to warrant no systematic treatment in a textbook on educational psychology. Other kinds of learning, for example, the learning of values and attitudes, are not considered indigenous to the primary or distinctive function of the school, and are treated only insofar as they affect or are part of the learning of subject matter. Their more general aspects are left to such courses as general and social psychology. And still other kinds of learning, for example, animal learning, conditioning, instrumental learning, and simple discrimination learning, are considered irrelevant for most learning tasks in school, despite the fact that wildly extrapolated findings in these areas quite commonly pad the learning chapters of many educational psychology textbooks.

Fourth, this work is not eclectic in theoretical orientation, but proceeds from a consistent point of view based on a cognitive theory of meaningful verbal learning.

Fifth, greater stress is placed on cognitive development than in most other educational psychology texts, and the material is integrated with related aspects of cognitive functioning.

Finally, a level of discourse is employed that is appropriate for prospective teachers and mature students of education. Oversimplified explanations, language, and presentation of ideas are avoided. Educational psychology is a complex rather than a simple subject. Hence to oversimplify it is to render the beginning student a serious disservice. Clarity and incisiveness of presentation do not require reversion to a kindergarten level of writing and illustration. In fact, it is the writer's firm conviction that much of the thinly disguised contempt many prospective teachers have for courses in pedagogy and educational psychology stems from watered-down, repetitive content and an unnecessarily elementary level of vocabulary, sentence structure, illustration, and example. Illustrations, tables, and figures, therefore, are used in this text only where it is felt they could convey meanings more effectively and succinctly than could language; they are not used to provide relief, diversion, sentimental atmosphere, or an aura of scientific precision. For the same reason, and also because they are so space-consuming and so frequently accepted as evidence rather than as interesting illustrative matter, case histories and anecdotal material are not included in this volume.

In short, the aim of this book is to furnish the prospective teacher with the basic psychological sophistication he will need for classroom teaching. It should be supplemented by courses in general, developmental, and social psychology and cannot attempt to serve as a substitute for any or all of these subjects.

My decision to restrict the discussion of learning to meaningful verbal learning points up the unfortunate paucity of experimental evidence in this area. This situation is a reflection of the prevailing tendency, over the past three or more decades, for educational psychologists to extrapolate findings from animal, rote, and perceptual-motor learning experiments rather than to conduct research on meaningful verbal learning. But presenting certain significant theoretical propositions without definitive empirical support was considered preferable to leaving large gaps in theory or filling them by means of unwarranted extrapolation. In certain instances, however, where abundant confirmatory research was available, considerations of space made judicious selection necessary. Cited evidence, therefore, should be considered more illustrative than exhaustive.

To be consistent with the pedagogic principles of progressive differentiation and integrative reconciliation (see Chapter 4), the book is organized in such a way that early chapters present an overview of later chapters, and the introductory material in each chapter performs the same function in relation to the material that follows. Furthermore, when similar material is encountered again in a different context, deliberate repetition, explicitly delineating similarities and differences, is considered pedagogically superior to expecting the student to perform the necessary cross-referencing of related concepts and propositions by himself. These devices render chapter summaries superfluous. Unlike a summary, an overview orients the reader in advance. When used as an "organizer," it presents (at a higher level of abstraction, generality, and inclusiveness) an ideational scaffolding for the detailed material to follow. It is also a well-known fact that students frequently abuse summaries by using them as the *sole* basis for review.

Several other familiar textbook features are missing in this book. First, specific questions are not posed at the end of each chapter. This degree of explicit guidance in review is considered more appropriate at the elementary- and high-school levels of instruction. The use of an accompanying workbook was rejected for the same reason. Second, chapter reading lists are not offered since it is believed that most students simply ignore suggested readings selected by the author. The student who is genuinely interested in exploring original sources of particular interest to *him* can easily do so by identifying them in the text and then turning to the bibliography at the end of the book. Lastly, a file of test items is not made available to instructors using this text. Evaluation of student learning is considered to lie within the latter's responsibility.

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I am indebted to my wife, Pearl Ausubel, and to Mrs. Mary Stager for critical reading of the manuscript and for many helpful suggestions that have materially increased its clarity and readability. Mrs. Margaret Brengle and Miss Irene Pysanchyn were particularly helpful in preparing the manuscript for publication.

Finally I owe a special debt of gratitude to the publishers of my previous works, and especially to Grune & Stratton, Inc., for generously permitting me to incorporate previously published material into this volume.

D. P. A.

Toronto, Ontario
January 1968

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