

# research in CLASS ROOMS

THE STUDY OF TEACHERS,  
TEACHING, AND  
INSTRUCTION

Lorin W. Anderson  
and Robert B. Burns

PERGAMON PRESS

# Research in Classrooms

## *The Study of Teachers, Teaching and Instruction*

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**PERGAMON PRESS**

Member of Maxwell Macmillan Pergamon Publishing Corporation

OXFORD · NEW YORK · BEIJING · FRANKFURT  
SÃO PAULO · SYDNEY · TOKYO · TORONTO

U.K.	Pergamon Press plc, Headington Hill Hall, Oxford OX3 0BW, England
U.S.A.	Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, New York 10523, U.S.A.
PEOPLE'S REPUBLIC OF CHINA	Pergamon Press, Room 4037, Qianmen Hotel, Beijing, People's Republic of China
FEDERAL REPUBLIC OF GERMANY	Pergamon Press GmbH, Hammerweg 6, D-6242 Kronberg, Federal Republic of Germany
BRAZIL	Pergamon Editora Ltda, Rua Eça de Queiros, 346, CEP 04011, Paraiso, São Paulo, Brazil
AUSTRALIA	Pergamon Press Australia Pty Ltd., P.O. Box 544, Potts Point, N.S.W. 2011, Australia
JAPAN	Pergamon Press, 5th Floor, Matsuoaka Central Building, 1-7-1 Nishishinjuku, Shinjuku-ku, Tokyo 160, Japan
CANADA	Pergamon Press Canada Ltd., Suite No. 271, 253 College Street, Toronto, Ontario, Canada M5T 1R5

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First edition 1989

# **Library of Congress Cataloging-in-Publication Data**

Anderson, Lorin W.

Research in classrooms: the study of teachers, teaching, and instruction/Lorin W. Anderson and Robert B. Burns.

p. cm.

Bibliography: p.

1. Education—Research. I. Burns, Robert B. (Robert Bounds).

1951— II. Title.

LB1028. A475 1989 370' 7'8—dc20 89-16156

# **British Library Cataloguing in Publication Data**

Anderson, Lorin W.

Research in classrooms: the study of teachers, teaching and instruction.

1. Schools. teaching. Research

I. Title II. Burns, Robert B.

371.1'02'072

ISBN 0-08-034060-1 Hard cover

ISBN 0-08-034059-8 Flexi cover

*Printed in Great Britain by BPCC Wheatons Ltd, Exeter*

**Other titles of related interest**

DUNKIN The International Encyclopedia of Teaching and Teacher Education

REYNOLDS Knowledge Base for the Beginning Teacher

ANDERSON, RYAN The IEA Classroom Environment Study  
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# Foreword

MANY who have reviewed research on teaching and learning over the decades have apparently felt obliged to criticize the efforts of those who could only have been either pioneers or early consolidators in the field. The reviews have usually concluded with discussions of implications for practice and for research. There has been a negative correlation between the lengths of those two discussions because lack of guidance for practice tended to be blamed on flaws in the research. The research was said to be either methodologically unsound, epistemologically misguided, or both. It was positivistic and quantitative when it should have been hermeneutic and qualitative, cried some. It did not use observations of classroom events by independent observers when it should have, or it used such observation when it should have relied on the phenomenological perceptions of the participants, shouted others. The debates have shown signs of abating recently with some polarization rather loosely depicted as between the “quantifiers” and the “qualitatives.” Between the two has been a large group unpersuaded by either camp, seeing value in both and wanting to get on with the exploration with all the tools and ideas at their disposal.

Unfortunately, this unpersuaded group has had great trouble identifying the tools, obtaining their specifications, realizing their strengths and limitations, and learning how to use them. This is because the present volume has not existed until now, some decades after the need for it came to exist.

This book is not yet another substantive review of the findings of classroom research. It makes no attempt to portray the current state of knowledge of such topics as teacher praise, student initiations, teacher interactive decision making, student deviance, homework, student engagement, and the like. This is more a book about classroom research for those who want to know how to think about and conduct such research. It is not for those who want to learn how to teach by digesting the products of research, and it does not justify its existence in the deficiencies of the past. Indeed, it sees strengths and shortcomings in many different approaches.

This book is the only one to date which takes up epistemological issues concerning classroom research and pursues them in relation to design and methodological matters with depth and balance. It deals with all of the perennial issues that have divided scholars in the field and contributes more to achieving points of reconciliation than has been available to date. A good example of the balance contained in it is to be seen in the three main

sections or "units" into which it is organized: "Conceptualizing Classroom Research;" "Designing Classroom Research;" and "Illustrative Classroom Research." The connectedness of these three is such that it is possible to pursue conceptual issues raised in the first through to discussion of implications for research design and methodology in the second and on to examples of applications in the third. This gives the book tremendous potential for students to capitalize on the experience and accumulated wisdom of decades of scholars so as to emerge from it with high level understanding and knowledge of the field.

I know of no other writing in the area of paradigms for research on classrooms that penetrates so deeply and intelligibly into the philosophical fundamentals involved. The coverage of insights provided by scholars of the status of Kuhn makes this section of the book challenging as well as enlightening, and certainly should equip students well to engage in discussion and debate over contending views. Kant and hypocrisy contained in the so-called quantitative/qualitative debate are exposed and dealt with objectively, while the deeper and more genuine issues are presented faithfully.

Although it need not have been, the book is also very useful for the historical material it contains. In other words, it has avoided the common mistake of assuming that nothing of value was achieved in the early decades of this research enterprise. Instead, it provides a good record of developments over time and contains many fully described examples of earlier achievements. Moreover, the book is not wholly American like so many others written by American authors in this field. The contributions of scholars in Europe, the UK, Australia, Canada and New Zealand are represented.

One of the most helpful features of the book is the distinction among research on teachers, research on teaching, and research on instruction. I found it a useful way of organizing the research and of highlighting important issues.

I think the authors are to be congratulated heartily for this excellent book. It will become the standard text and reference in the field for those seeking guidance on such questions as "What is classroom research about?," "What are the different approaches of this type of research?," "What methods and techniques are most suitable?," "What directions should this research take in the future?"

M J DUNKIN

*Sydney, Australia*  
April 1989

# Preface

OUR purpose in writing this book was to help students of education develop sufficient knowledge and understanding of classroom research to be able to conceptualize, plan, and conduct sound, defensible studies of classrooms and to properly interpret the results of those studies. In order to accomplish this purpose, we have chosen to rely heavily on studies of classrooms that have been conducted over the past half-century or more. Our belief is that students are more likely to develop an understanding of classroom research by reading about how the research *has been* conducted, than by reading about how it *should be* conducted. At the same time, however, we must admit to sprinkling a few “shoulds” throughout the book.

Given our approach, it would have been impossible to include all of the studies of classroom research that have been conducted over the years. We have chosen to include those studies that we believe best illustrate the major concepts and principles of classroom research. In other words, the set of studies we have chosen to highlight are intended to be instructive, not exhaustive.

As all authors do, we bring to this book a particular point of view. Stated simply, we believe that the primary purpose of classroom research is to help educators improve the conditions of learning and the quality of learning of increasingly large numbers of students. As a consequence, we believe that four conditions must be met if defensible, meaningful, and useful classroom research is to be designed and conducted.

First, classroom research must be guided by an explicit conceptual framework which includes clearly and precisely defined concepts and a set of hypothesized relationships among the concepts. As we shall see in later chapters, this framework guides not only the planning and conduct of the study, but the interpretation of the results as well. At present, we believe that the statement made some 35 years ago by Barr and his colleagues still applies:

... research too often proceeds without explicit theoretical framework, in intellectual disarray, too often to the testing of myriads of arbitrary, unrationalized hypotheses. The studies too often interact little with each other, do not fall into place within any scheme, and hence add little to the understanding of the teaching process (Barr et al., 1953, p. 651).

Second, a clear statement of purpose for which the study is being conducted is needed. Some studies are intended to provide complete,

accurate descriptions of classrooms—the participants, the events that occur within them, and/or the consequences of the participants being in the classrooms and engaging in the various events over some period of time. What is the typical class size in public schools and how does class size change across grade levels? This question is about the description of participants (students). How frequently do teachers work with individual students in their classrooms (as opposed to groups of students)? This question is about the description of a classroom event (teachers working with individual students).

Other studies are planned so that the relationships among participants, events, and consequences can be examined. Do teachers talk more in classrooms than do students? This question is about the relationship between participants (teachers, students) and events (talking). Do teachers who ask more questions requiring students to think about the answer or express and defend their opinion produce students who have higher levels of achievement? This question is about the relationship between events (teacher questioning) and consequences (student achievement).

Still other studies are planned so that cause-effect relationships among participants, events, and consequences can be established. In raising the previous question about the relationship between teacher questioning and student achievement, the researcher may be seeking to establish a causal relationship. If so, this fact has great implications for the type of study that is planned and conducted.

Knowing the purpose for which a study is conducted is important if the study is to be properly planned and the results are to be properly interpreted. Since cause-effect relationships are relationships or associations by definition, we will emphasize two general purposes of classroom research in this volume: descriptive and associational.

Third, defensible and reasonable plans for conducting the research are needed. These plans would include procedures for carrying out the study, means of obtaining the needed evidence, and methods for analyzing and otherwise examining the evidence once collected. For these plans to be defensible, they must be consistent with both the purpose of the study and the conceptual framework which guides it.

Fourth, knowledgeable and wise people who are able to interpret the results of the studies and examine implications of those results for thinking about classrooms and doing something about classrooms are needed. Contrary to some people's opinions, evidence does not speak for itself. The translation of evidence into thought and action requires people who understand both the research *and* the classroom.

This book is organized around these four conditions of sound, defensible classroom research. In the first three chapters, the emphasis is on conceptual frameworks and research plans. In Chapters 4 through 7, the methodological details that must be attended to in order to design and conduct



classroom research of high quality are described. In Chapters 8 through 10 we examine a variety of studies of teachers, teaching, and instruction that have been conducted over the past 60 years. The intent of this examination is that students of classroom research should learn from those who have designed and conducted such research in the past. Finally, in Chapter 11 our emphasis shifts to an understanding and application of our current knowledge of research on teachers, teaching, and instruction.

As we reflect on our work on this volume, we are very grateful to many people. Our thinking has been greatly stimulated by the work and writings of many of the pioneers of classroom research: A. S. Barr, A. A. Bellack, N. A. Flanders, N. L. Gage, P. V. Gump, D. M. Medley, D. G. Ryans, and B. O. Smith chief among them. We have benefitted tremendously from our associations over time with a number of contemporary classroom researchers: Rebecca Barr, David Berliner, Jere Brophy, Robert Dreeben, Walter Doyle, Carolyn Evertson, Charles Fisher, Thomas Good, Judith Green, Greta Morine-Dershimer, Barak Rosenshine, and Susan Stodolsky.

Three colleagues deserve our special thanks. Neville Postlethwaite suggested to several people at Pergamon Press that we write the book. Throughout the entire process he has been a source of strength and inspiration. Bruce Biddle reviewed the initial outline for the book, and provided us with encouragement to proceed when we needed it most. Michael Dunkin has "stuck with us" through it all. His comments, suggestions, and insights have provided us with a vast storehouse of "food for thought."

We are extremely grateful to Barbara Barrett of Pergamon Press. Despite several missed deadlines, she remained patient, confident, and supportive. We also are grateful to Michèle Norton of Pergamon who successfully "shepherded" this project from initial draft to publication. We would like to thank our secretaries, Cathy Schachner and Ann Wallgren, for keeping our professional lives in order. We also wish to thank Mabel Henderson for her excellent work in drawing figures and preparing camera-ready copies.

Finally, we are indebted to Jo Anne Anderson, who put up with our long distance telephone conversations, meetings at the house, and long hours at the word processor. Now that the book has been completed, we are pleased that she has chosen to remain married to one of us and a good friend of the other.

LWA  
Columbia, SC

*March, 1989*

RBB  
San Francisco, CA

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# Unit I—Introduction

## Conceptualizing Classroom Research

THE THREE chapters in this unit are intended to provide the reader with the “big picture.” While specific research techniques and the application of these techniques to particular research questions are the emphases of Units II and III, respectively, the chapters in this first unit deal with the larger issues surrounding the design and conduct of classroom research. Basic concepts will be defined and discussed, and essential differences between and among the concepts will be made.

In the first chapter, distinctions are drawn among three concepts: teachers, teaching, and instruction. Each of these concepts is associated with a long, distinguished research tradition (as we shall see in the third unit). At the same time, however, failure to differentiate among these concepts has led, we believe, to some of the apparently conflicting results of classroom research studies. Chapter 1 ends with a discussion of the role of the researcher’s values in the design, conduct, and interpretation of classroom research.

In the second chapter our attention shifts to various ways in which classrooms and the events and objects in those classrooms have been conceptualized. Paradigms and research programs, theories, and models are central to these conceptualizations. Each of these “conceptual systems” is described in some detail in the chapter. Since models of classrooms are more common than theories, a large portion of the chapter is spent discussing the nature and function of these models. Furthermore, since many of these models assume but do not explicate student learning, a brief postscript entitled “What about student learning?” concludes the chapter.

The focus of the third chapter is on research methodology. Four studies are summarized as examples of the variety of methodologies currently used to study classrooms. Several key distinctions are made in this chapter; distinctions between knowing and knowledge, and confirmatory and interpretive inquiry chief among them. Classroom research is seen as disciplined inquiry, and the importance of this conception of research is described.

Some readers may view the chapters in this unit as too “philosophical.” Others may suggest that some of our distinctions are “semantic.” We would disagree on both counts. We believe that all research rests on philosophical underpinnings. Thus, it behooves classroom researchers to understand the variety of philosophical orientations that currently underlie much of classroom research and to confront their own philosophical predispositions. We further believe that the language system currently used to describe and discuss classroom research lacks the necessary precision to move us forward in our understanding of classrooms. Our distinctions among concepts are intended to provide some of this needed precision.

# 1

## Teachers, Teaching, and Instruction

THIS is a book about research on teachers, teaching, and instruction. To the uninitiated, the title of both the book and this chapter may seem somewhat redundant. After all, in most countries throughout the world, teachers teach or provide instruction to students in classrooms. Consistent with this view, teachers are those who teach, while instruction and teaching are synonymous. We wish it could be so simple and straightforward.

Consider the following realities, however. Four definitions of the word “teacher” appear in the *Dictionary of Education* (Good, 1973). A teacher is:

(1) a person employed in an official capacity for the purposes of guiding and directing the learning experiences of pupils or students in an educational institution, whether public or private; (2) a person who because of rich or unusual experience or education or both in a given field is able to contribute to the growth and development of other persons who come in contact with him; (3) a person who has completed a professional curriculum in a teacher education institution and whose training has been recognized by the award of an appropriate teaching certificate; and (4) a person who instructs others (p. 586).

Thus, there are people who are teachers because of their status (i.e., they are certified as teachers), *not* because of their behavior or the impact of that behavior on others (definition 3). There are those who are teachers solely because of their behavior, with no apparent status at all (definition 4). Finally, there are those who are teachers because of their status *and* their behavior or skill. Furthermore, this status may be formally granted (definition 1) or informally earned (definition 2).

To complicate matters further, teachers are expected to fulfill a variety of roles.

It is customary to think of the teacher as: a. a director of learning, b. as a friend or counselor of pupils, c. as a member of a group of professional workers, and d. as a citizen participating in various community activities—local, state, national, and international (Barr, 1952, p. 1446).

Only one of these roles, the first one, is typically associated with teaching or instruction (although to confuse matters even more Amidon and Hunter (1967) include counseling as a teaching activity).

As in the case of the term “teacher,” there are several definitions of “teaching” (Smith, 1987). Historically, teaching has been defined as the imparting of knowledge or skill. This apparently simple definition has given rise to several questions, each leading to a definition with a somewhat different emphasis.

For example, when a person is clearly intending to impart knowledge, but does not do so, is that person teaching? Some definitions of teaching emphasize the *intentional* nature of the act.

When a person acts in a way that is consistent with practices generally known (through research) or suspected (by professional educators) to lead to the acquisition of knowledge, but none of the students in that particular classroom learn the knowledge or acquire the skill, is that person teaching? Some definitions emphasize the *scientific* nature of teaching (Smith, 1987). Soar, Medley, and Coker (1983), for example, argue in favor of this “best practice” definition of teaching.

Finally, when a person actually does impart knowledge or skill to another or others, is that person teaching? Although few would respond negatively to this question, such a *success* (Smith, 1987) or *effectiveness* definition of teaching often leads to circularity. Such a definition, for example, prohibits the differentiation of one who is simply teaching from one who is teaching well.

Like the terms “teacher” and “teaching,” the term “instruction” also has several definitions. At the most general level, instruction is synonymous with teaching (Good, 1973). That is, saying that teachers teach or that teachers instruct is saying the same thing. Other, more precise, definitions of instruction do exist, however.

Some educators have suggested that instruction is a subset or one component of the act of teaching. Stiles (1960), for example, defines the relationship between instruction and teaching in this manner:

If we regard teaching as a purposeful activity of man, then this activity has identifiable aspects of purpose or plan, of means or operations, and of results or effects. The term curriculum may be used to emphasize the first aspect of the activity, the term instruction to emphasize the second, and the term evaluation to emphasize the third (p. 710).

A similar relationship between instruction and teaching can be found in Good (1973).

Other educators define teaching as a subset of instruction. Weil and Murphy (1982), for example, define instruction as a

broad term that may encompass most of the activities taking place in the classroom and the school as well as many activities taking place in the home. [It includes] duration, source, group size, nature of the instructional activities, and specific teacher or student behaviors (p. 890).

Similarly, Barr and Dreeben’s (1983) definition of instruction includes “patterns of interaction, aspects of class organization, curriculum content,

and the intellectual and social demands made by the nature of the schoolwork itself" (p. 69).

As should be evident to the reader, then, multiple definitions of teachers, teaching, and instruction currently exist. It should be equally clear that these multiple definitions of these related terms make it very difficult to understand much of what we read and hear as we seek to improve the quality of school learning of students in classrooms throughout the world.

### **Defining Teachers, Teaching, and Instruction**

As we shall see throughout this volume, the precise definition of key educational concepts is a necessary precondition for planning and carrying out sound research studies. Furthermore, studies that focus on either teachers, teaching, or instruction have their unique advantages and disadvantages. In this section, we shall offer our definitions of these terms and speculate on the primary advantages and disadvantages of studies of teachers, teaching, and instruction, respectively.

#### ***Teachers***

We limit our view of teachers to Good's (1973) first definition. That is, our study of teachers is limited to those persons who are employed in schools in an official capacity for the expressed purpose of "guiding and directing the learning experiences" of children. Once we have limited our study to this group of people, our job is not over; rather, it has just begun. One fundamental question remains, namely, "What characteristics or qualities of teachers should we study?"

The answer to this question depends on the purpose for which the question is asked (Ryan and Phillips, 1982). If the purpose is to describe the characteristics and qualities of the current teaching force, then certain characteristics or qualities are likely to be included. Sex of teachers, race or ethnicity of teachers, years of teaching experience, level of education, and type or level of certification are characteristics and qualities frequently used to describe teachers. Opinions and attitudes on a variety of issues are often solicited for the purpose of describing the teachers in the current teaching force.

If, on the other hand, the purpose of asking about teacher characteristics and qualities is to identify those characteristics or qualities that set excellent or effective teachers apart from other teachers, a different set of characteristics and qualities may be necessary. This latter purpose, which is consistent with the overall purpose of this book as described in the preface, has been the focus of studies for almost a century (see Kratz, 1896, for one of the earliest studies). Over time, in our attempts to identify those characteristics and qualities, we have asked different people (e.g., students,

“experts,” the teachers themselves), asked different questions (e.g., asked them to recall qualities of excellent teachers that made them excellent, asked them to rate teachers on various scales), and focused on different types of characteristics and qualities (e.g., personality traits, attitudes and beliefs, subject matter and pedagogical knowledge).

The study of teachers has several advantages. First, most of the characteristics and qualities that have been identified in past research studies possess a reasonable amount of “face validity” or credibility. Who can argue, for example, that teachers should know the subject matter they are expected to teach, exercise good judgment, or be enthusiastic or honest? Second, and by definition, characteristics such as personality traits and subject matter knowledge tend to be relatively stable over time. They are not likely to change dramatically from week to week, or month to month. As a consequence, reliable estimates of them can be obtained fairly easily. Third, once such characteristics and qualities are identified, they can be used to select individuals who are likely to be or become good teachers. Furthermore, knowledge of these characteristics and qualities may be useful in helping teachers become better teachers. Thus, the study of teachers has practical as well as theoretical value.

At the same time, however, the study of teachers has several disadvantages. First, there traditionally has been a great deal of disagreement on the characteristics and qualities possessed by excellent or effective teachers (Medley, 1972). In one of the earliest studies conducted in this area, only one teacher characteristic was mentioned by the majority of the students surveyed (Kratz, 1896). Many of the characteristics and qualities were mentioned by fewer than ten percent of the students. Furthermore, supervisors, students, and the teachers themselves have tended to disagree on the characteristics of good teachers (Charters and Waples, 1929).

Second, the characteristics and qualities identified typically are too global or vague to be useful in selecting or attempting to improve teachers. Medley (1972) has made this point succinctly.

When asked to describe a good teacher, [the typical student] produces a mixture of trivia, banality, and common sense that adds nothing to what is already generally believed. Not only are such descriptions devoid of new content, they tend also to be couched in terms too vague to be useful to a teacher who needs specific information rather than pious generalities (p. 432).

Third, and perhaps most damaging, there is very little evidence that characteristics and qualities of teachers identified in prior research are linked in any way with the excellence or effectiveness of teachers. While honesty may be an important trait for teachers to possess as employees of the school district or pillars of the community, honesty may not differentiate those teachers who are likely to be more successful in their classrooms and with their students from those teachers who are likely to be less



successful. Getzels and Jackson's (1963) conclusion made a quarter of a century ago still holds today.

Very little is known for certain . . . about the relation between teacher personality and teaching effectiveness. The regrettable fact is that many of the studies so far have not produced significant results. Many others have produced only pedestrian findings (p. 574).

## Teaching

Our definition of teaching is an amalgam of definitions offered by Gage (1963a), Amidon and Hunter (1967), Klauer (1985), and Robertson (1987). Gage (1963a) defines teaching as "any form of interpersonal influence aimed at changing the ways in which other persons can or will behave" (p. 96), while Amidon and Hunter (1967) define teaching as "an interactive process, primarily involving classroom talk, which takes place between teacher and pupils and occurs during certain definable activities" (p. 1). Klauer (1985) defines teaching as an "interpersonal activity directed toward learning by one or more persons" (p. 5). Finally, Robertson (1987) suggests that teaching "denotes action undertaken with the intention of bringing about learning in another" (p. 15). Several common critical attributes of the concept "teaching" emerge from these definitions.

First, teaching is an activity or process; in Robertson's (1987) terms, teaching is action. You can see teaching take place; you need not (and, some would argue, should not) infer it from learning. In this regard, "teaching may be effective or not as far as student learning is concerned. Thus, circularity in definition is avoided" (Klauer, 1985, p. 5).

Jackson (1986) also argues for teaching as an activity or process:

When we say "Look, there's a person teaching," what we mean is "There's a person trying to teach." The "trying to" is understood. Its omission is simply a kind of verbal shorthand (p. 81).

Second, teaching is an *interpersonal* activity or process. Interpersonal means that teaching involves interactions between a teacher and one or more students (Klauer, 1985). Most of these interactions are verbal (Amidon and Hunter, 1967). Furthermore, these interactions are bi-directional (that is, teachers talk to and influence students and students talk to and influence teachers) (Klauer, 1985).

Third, teaching is *intentional*. There is some purpose or set of purposes for which teaching occurs. Klauer (1985) suggests that teaching is "directed toward learning," while Gage (1963a) asserts that teaching is "aimed at changing the ways in which other persons can or will behave." Thus, while the use of the term "teaching" does not imply that learning has taken place, it does imply that learning is intended.

In this regard, two corollaries of the third critical attribute should be noted. The act of teaching seems to require what Jackson (1986) refers to as