

THE INTERNATIONAL ENCYCLOPEDIA
OF
TEACHING AND TEACHER
EDUCATION

Edited by

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PREFACE

Developments in the study of teaching and teacher education have reached a stage where this Encyclopedia is warranted. In 1985 the growth towards maturity in these two crucial areas of educational knowledge was evidenced by three particularly significant occurrences. One was the creation of a special Division of Teaching and Teacher Education within the American Educational Research Association, the largest such organization in the world. Another was the formation of the European Association for Research on Learning and Instruction, the first such association on that continent. A third was the appearance of an *avowedly* international journal in the field, *Teaching and Teacher Education: An International Journal of Research and Studies*. Evidence of the interest in studying these processes and of the productivity of the research is also to be found in the large number of articles about them published in nonspecialist national or regional education journals and in the number of books of readings that appear year after year through attempts to bring the best of the research efforts before students of the teaching process.

Access to the major concepts that have occupied the minds of students of teaching and teacher education has not been easy. Textbooks there are aplenty in the more general areas of educational psychology, educational philosophy, and educational sociology, to mention but a few, but these are quite limited resources for anyone wishing to pursue concepts involving teaching and teacher education in some depth. Apart from occasional articles in the few review journals and in the even fewer encyclopedias of education in general, there have, of course, been the admirable *Handbooks of Research on Teaching* sponsored by the American Educational Research Association. The latter, however, have been national rather than international, and have been organized differently from the present work.

This Encyclopedia is designed to enable readers to learn about key concepts from scholarly, comprehensive, and systematic expositions brought together within an organizing framework that facilitates integration and permits easy cross-referencing. Its entries were written by leading scholars from many countries. The authors were invited initially to contribute to *The International Encyclopedia of Education: Research and Studies* whose entries in the areas of teaching and teacher education have been brought together in this volume. The authors were selected on the basis of their demonstrated expertise in relation to particular topics. The topics themselves were identified partly on the basis of the amount and quality of scholarship invested in exploration of them and the knowledge thus yielded. Just as importantly, however, the topics were delineated according to a conceptual framework mapping the major developments of thought and research about teaching and teacher education. An initial list of topics and potential authors was discussed by members of the Editorial Board of the parent Encyclopedia at a meeting in March 1981. In the light of that discussion a final list was prepared and soon after the process of inviting authors commenced. For this present volume, authors were invited to update the bibliographies included in their original articles.

Some limitations had to be placed on the size, and therefore the scope, of this volume. For example, there are no articles on the teaching of specific curriculum areas, such as Mathematics or Music, here. Readers are advised, therefore, to consult the parent Encyclopedia for information of that kind.

Preface

This Encyclopedia is also organized differently from the parent Encyclopedia. The latter presented its entries in strict alphabetical order. Thus, an entry drawn from the realm of economics of education might follow an entry from research methods in education and precede one from teaching and teacher education. Here, however, the entries are grouped together on the basis of broad themes rather than alphabetical order. The rationale for the grouping of the articles is outlined below.

1. Conceptual Framework of the Encyclopedia

This Encyclopedia is an expression of a view of knowledge about teaching and teacher education in the 1980s. In its contents and organization it contains assumptions and beliefs about the nature of knowledge in the area of teaching and teacher education at that time. An attempt is made here to make explicit the main assumptions that have guided the development of the Encyclopedia.

It is assumed that there are two main levels of knowledge about teaching and teacher education. For want of better terms, these levels are labelled "meta-knowledge" and "substantive knowledge". "Meta-knowledge" refers to attempts to classify and analyse conceptual and theoretical positions about the nature and proper functioning of, and methods of obtaining empirical evidence about, teaching and teacher education. Knowledge that there are humanistic, behavioural, and information-processing models of teaching is an example of meta-knowledge about theory. Knowledge of issues raised in debates about different methods of observing in classrooms, and of statistically manipulating data thus obtained, are examples of meta-knowledge about methodology.

In summary, meta-knowledge is the result of studying attempts to answer the central questions: what is the most valuable knowledge to have, and what are the best ways of obtaining it? The first two sections of this Encyclopedia are presented as belonging to the meta-knowledge of teaching and teacher education. The first section reflects assumptions about the meta-knowledge of concepts and theoretical models. The second section is based upon assumptions about the meta-knowledge of research methods and paradigms. These two, the theoretical and the methodological, are assumed to interact so that theory determines method and method affects the quality of evidence required to validate theory.

"Substantive knowledge" as used here refers to information about teaching and teacher education obtained as a result of attempts to test hypotheses and answer questions about those two processes, their relationships with each other, and with other phenomena. Knowledge about teaching methods and other classroom occurrences is the core of this Encyclopedia. From it arises other knowledge emerging from the realization that teaching occurs in contexts which vary according to physical and social psychological environments, characteristics of students and teachers, and features of the occupation of teaching. These contextual factors impinge upon classrooms and have the potential to influence events occurring in them, if only by setting boundaries. In the longer term, however, and sometimes indirectly, teaching has the potential to affect the contextual factors.

Teacher education exists for the purpose of influencing teaching. In turn, it also is affected by conditions in schools and classrooms which it serves and which serve it. Like the teaching it seeks to enhance, teacher education is subject to the potential effects of contextual factors and has itself the capacity to exert reciprocal effects upon them.

Substantive knowledge about teaching and teacher education is presented in four sections of the Encyclopedia. One is devoted to Teaching Methods and Techniques (Sect. 3), the second is concerned with Classroom Processes (Sect. 4), the next contains articles on Contextual Factors (Sect. 5), and the last is on Teacher Education (Sect. 6).

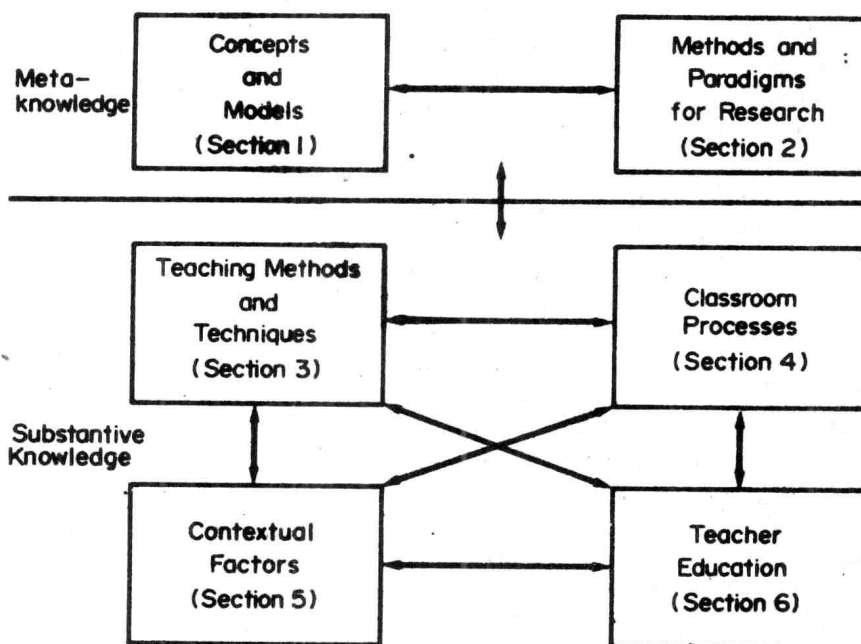


Figure 1
Schematic representation of the Encyclopedia

This conceptual framework for the Encyclopedia is represented in Fig. 1. It is a two-level, six-block framework as outlined above. The two levels are portrayed as interacting, so that as knowledge about teaching is synthesized and accommodated within conceptual and theoretical structures, it thereby changes them. Similarly, new knowledge is generated through the application of research paradigms and methods, but the quality of knowledge thus yielded leads to refinement and sometimes wholesale change in those very paradigms and methods. The contents of the Encyclopedia, as outlined in the following section, consist of articles on topics belonging to the six blocks contained in Fig. 1. Each is portrayed as interacting with the others, with Teaching Methods and Techniques and Classroom Processes occupying the central panel. Thus, teaching processes are seen to be the subject of concepts and theoretical models of teaching and of research on teaching. Teaching processes are also seen to be influenced by and to influence their contexts and the process of teacher education.

2. Contents

The contents of the Encyclopedia are organized on the basis of the conceptual framework described above. The first section is *Concepts and Models*. In it are found entries dealing with the major conceptual orientations that have appeared in relation to the study of, first, teaching and, second, teacher education. The section begins with a consideration of definitional issues surrounding the concept of teaching itself, such as whether learning must eventuate for an activity to be regarded as teaching. Subtle ways in which biases can be built into definitions of teaching are important here as are distinctions among types of interpersonal influence associated with teaching, such as indoctrination and brainwashing. Teaching is a coat of many colours and so it is not surprising that there

are several different orientations in thought and investigation about it. To some, teaching is best characterized as a predominantly linguistic activity whose central process is communication. To others, teaching is seen to rely for its effectiveness principally on the ways in which stimulus, response, and reinforcement are scheduled.

Teaching is undeniably an occasion for the processing of ideas and information. Its intellectual challenges are to many its foremost properties, while to others teaching needs to be more concerned with its potential to encourage inquiry and discovery in learners rather than the mere passing on of information already possessed by someone else. Finally, in this section, the crucial elements of teaching are the opportunities it provides to learn through the management of time and learners' attention. The nature and organization of learning tasks and individualization in terms of learner characteristics and other contextual features, including levels of mastery, become critical in these approaches to the practice and study of teaching.

All of the above orientations have been applied to that particular aspect of teaching that involves the teaching of teachers. While there is a wide range of conceptual stances adopted with respect to teacher education, two stand out so far. One emphasizes humanistic imperatives in the development of teacher sensitivities and attitudes to learners. The other is more oriented to the acquisition of pedagogical skills and competencies through the careful analysis and synthesis of observable teaching behaviours and through repeated practice in real and simulated teaching situations.

The second section of this Encyclopedia is devoted to *Methods and Paradigms for Research*. The ways in which teaching is researched necessarily reflect the ways in which teaching is conceptualized. With few exceptions, research on teaching up until the 1950s was appropriately described as following a "black box" paradigm in which the data gathered concerned inputs and outputs with only second-hand information, if any, about actual classroom processes and events. Much of the latter was evaluative rather than descriptive and so its contribution to the knowledge and understanding of teaching itself was severely limited. The study of the development of approaches and techniques of research in classrooms is illuminating and essential for a proper realization of how much progress was made in subsequent decades. This is not to say that solutions were always there for the seeking or that progress was achieved without controversy. Indeed, immersion in the literature of debate about paradigms, measurement, criteria of evaluation, research roles, units of analysis, and ways in which research results might be synthesized to arrive at "state-of-the-art" conclusions, leads sometimes to frustration but always to an awareness that this is a fully alive research enterprise. No one can now be excused for naive expectations of success in discovering laws connecting teaching and learning. Simple causal connections simply do not exist, so that progress often takes the form of identifying even more difficult problems to solve and more vexing issues to resolve. Probably the most prominent set of problems and issues to emerge during the 1970s and 1980s concerned deep-seated assumptions constituting epistemologies of teaching. Thus, to some the very notion of cause and effect in human affairs, the idea of analysing and quantifying small categories of classroom behaviour, of nonparticipant observation, and noninvolvement of teachers in the research other than as subjects have been anathema. In reaction, paradigms have been expanded, methodologies have been broadened, and teacher participation has increased.

Regardless of results of research on teaching, the most common concept of what teachers do in classrooms is the concept of *Teaching Methods* which are the subject of the third section. It has been said that the wheel has been rediscovered in education more often than in any other domain of human activity, but whether or not this claim is

validated when the history of teaching methods is systematically pursued remains to be seen. The third section of the Encyclopedia contains a large selection of entries on teaching methods. In the past, students of teaching methods experienced frustration by virtue of two main problems. First, teaching methods tended to be quite vaguely defined, so that it was very often difficult to discern the essential ingredients of each and to distinguish one from another. Second, teaching methods were almost always prescriptive, often to the extent that teachers should feel guilty if they were not using them, and yet rarely was even remotely scientific evidence in their support available. In some cases where methods were researched, it seemed doubtful that anything homogeneous enough to be called a method existed, or if it did that there was any reason for using it instead of an alternative. Fortunately, things are different nowadays and there are teaching methods, such as the Keller Plan, for which there are large research bases that can inform decisions to adopt or reject. The concept of teaching method itself remains a difficult one, however. Sometimes what is advocated seems more a philosophy of education than a mere teaching method. In other cases, the method seems to involve the cessation of teaching rather than an alternative way of practising it. Many methods have central notions involving the teacher's withdrawal from centre stage, but those grand examples of teacher dominance, such as lecturing, remain. One important lesson which has emerged from research on teaching methods is that it is often inappropriate to pit one against another in a competition to find *the best method* and that it might be more fruitful to detect and evaluate within-method variations. For example, it is probably better to learn how to lecture well than to discard lecturing as a method altogether.

The fourth section of this Encyclopedia is about more specific *Classroom Processes* than teaching methods. Within any one teaching method there are likely to appear many different types of classroom processes. This section is concerned with them. Some of the classroom processes that have been defined and researched are associated with more prescriptive approaches to the study of teaching. On the other hand, many of them have been derived from objective attempts to describe what actually happens. The more observable classroom processes are the overt behaviours of teachers and students. Several facets of these have attracted researchers in the twentieth century. First, there is what has been named the *socioemotional facet* involving such behaviours as praising, criticizing, accepting, encouraging, rejecting, and reprimanding. From these more specific instances have been constructed larger notions of warmth, nurturance, autocracy, democracy, and the like. Constructs of classroom climate, teacher flexibility in influence patterns, competition, cooperation, and reinforcement appear in relation to the socioemotional facet in this section.

Traditionally, classroom teaching and learning occur most explicitly in relation to subject matter thought to be important to learn. It is not surprising, therefore, that one facet to have been explored in research on classroom processes is the *substantive facet*, together with the type of *logical* processes carried on in association with it. Substantively and logically, behaviour in classrooms varies according to its level of abstraction, the complexity of the intellectual operations performed, the vagueness or clarity of communications, the types and amounts of content covered, the extent to which students are engaged, and the ways in which time is allocated and used.

Looked at in another way, classrooms are milieux in which pedagogical roles are performed. Most simply, it seems, the roles enacted by teachers and students may be compared in terms of the sharing of four predominantly verbal activities: structuring, soliciting, responding, and reacting. The teaching role in more formal classroom environments is one that relies heavily upon structuring, soliciting, and reacting. The student

role is the reciprocal of the teaching role in that, while students enjoy a smaller slice of structuring, soliciting, and reacting, they emit a very large proportion of the responding that occurs. Furthermore, sequential patterns that are discernible over time in the occurrence of these activities are stable, predictable, and seemingly consistent from one culture to another. This so-called *pedagogical facet* of classroom behaviour has provided a rewarding and insightful body of research on teaching and learning.

Schools and the classrooms within them are complex social environments that depend for a considerable measure of their viability and success upon the maintenance of order. This is not meant to imply that teachers should be sergeant majors or police but simply that whatever the preferred social-psychological environment, desired learning is minimized by chaos. It just so happens that teachers are especially responsible for the establishment and maintenance of order in classrooms and that the study of strategies adopted to secure it will focus upon the teacher as manager. Some of the research into classroom management has concentrated on the types of deviant behaviour that occur and the ways in which teachers react to it. Others take the view that the establishment of a favourable atmosphere is a preventive measure which obviates disruption and deviance. In either case, the *management facet* of teaching is a rewarding subject of study.

The most difficult types of classroom processes to research are obviously those that are most difficult to observe. Even the most sophisticated observational procedures have been incapable of finding direct access to the thoughts of the participants as they occur. In research on teaching, as in any other field of empirical inquiry, one must make do with the data that can be obtained. In some of the research that has been referred to above, observational data about overt classroom behaviour was used as a basis for inference about covert intellectual processes. However, research identified with teachers' thinking is more commonly research that has relied on the subjective reporting by teachers of what was exercising their minds at particular times during lessons. The classroom processes section of the Encyclopedia concludes with a series of entries on the major areas of research on *cognition in classrooms*. These include articles on teachers' thinking, teachers' epistemologies, the theories they entertain about teaching and learning, the number and types of decisions they make during face-to-face teaching, as well as the occasions for such decision making, and their thinking in the course of planning for teaching. Finally, and perhaps most importantly, there is an article on students' thought processes.

The fifth section of the Encyclopedia is devoted to *Contextual Factors*. In the traditional school of box-like classrooms it might seem that teachers and students interact in splendid isolation from the rest of the world. The environment does intrude, however, and there is a growing literature of research on the contexts within which teaching is practised. There are, indeed, architectural variations, largely associated with the development of "open plan" schools. There are variations in the types and amounts of materials and equipment that teachers and students have at their disposal, in the size of the class, and in the seating arrangements for the students within it. Indeed, the investment of money, time, and energy in the building and maintenance of these physical features of school and classroom environments leads to the expectation that their influence upon what happens in classrooms is great and that they are important determinants of success at school. Physical influences are accompanied by psychological factors such that being a participant in a class where the general atmosphere is one of nurturance and challenge is bound to be very different from membership of a class surrounded by threat and boredom. Not all of these conditions depend upon the class teacher, for the climate of

the institution as a whole no doubt permeates its parts. Similarly, curricula and syllabi are often determined by a central authority and can, along with other systemic features, frame what goes on in classrooms with such strong effect as to coerce and inhibit.

The characteristics that students bring with them into the teaching-learning situation are surely among the most important determinants of what occurs there. These have been thoroughly researched over many decades as influences upon learning in the sense of products of classrooms. It has only been in quite recent decades, however, that they have been investigated systematically in relation to teaching methods and other classroom processes. The literature of education is replete with value statements and prescriptions concerning fitting learning tasks, curricula, and materials to the student. Whole programmes of schooling have been tailored to accommodate the handicapped, the disadvantaged, and the talented, but just how individual and group differences in these regards make a difference to life in classrooms needs much more documentation. This Encyclopedia includes entries on five main types of student characteristics. They are affective and cognitive attributes, ethnicity, sex, and social background.

Teachers' characteristics occupy an important place in the history of research on teacher effectiveness but have been much less commonly represented in research on teaching behaviour. Presumably, the ways in which teachers relate to students are associated to some degree with teachers' expectations of student behaviour and learning, and other educational activities. Teachers' attitudes, values, and beliefs, not to mention their physical traits, have sometimes been used as criteria for admission to the profession of teaching on the assumption that they are vital influences upon their behaviour and upon students' reactions. There is also evidence of systematic processes resulting in greater representation of teachers from certain levels of socioeconomic background than others within the teaching profession. Do these differences really affect the ways in which teachers and students behave in classrooms?

Questions concerning teacher supply and demand, selection, and recruitment become especially important in the light of the above. So too do issues involving the ways in which new members become socialized into the profession. These topics are treated in a series of entries which conclude the fifth section of the Encyclopedia.

The final section of the Encyclopedia focuses upon *Teacher Education*. Teaching and teacher education are not such separate processes that matters affecting the latter do not appear in the earlier sections of the Encyclopedia. Indeed, they do, and not least by implication from the great body of research on teaching that is represented in the first five sections. In this sixth section, however, the focus is decidedly upon the formal procedures that have been developed and studied concerning the acquisition of teaching competence, not just in preservice programmes but also for already practising teachers.

Included in this section are entries on the more traditional elements of teacher education programmes. These elements include laboratory schools, practice teaching, and the supervision associated with the latter. Less traditional are procedures such as the systematic analysis of protocols of lessons in the form of transcripts and audio- and video-recordings presented for the purpose of stimulating the development of concepts of teaching and to promote discussion and theorizing about classroom occurrences deemed to be significant. Closely related to the analysis of lesson protocols are attempts to identify and define specific, technical skills of teaching which might be incorporated in training programmes. One of the most influential innovations in teacher education in the 1960s and 1970s was microteaching, which employs lesson analysis and sets of technical skills of teaching in carefully designed and presented scaled-down teaching situations. Research on microteaching and its associated components of modelling and

feedback, together with evidence relating to its effectiveness in inculcating teaching skills are presented in a set of entries in this section. While microteaching was developed primarily for use in preservice teacher education, its basic principles were accepted in the development of techniques for individualized application by inservice teachers. These adaptations became known as minicourses. Inservice teacher education has involved much more than training in specific teaching skills, however. Its beginnings consist of the induction of new teachers and the continuing support of them through facilities such as teachers' centres. Associated with these developments of provision for inservice teacher education is the concept of teacher *recyclage* used in French speaking countries.

Finally the Encyclopedia contains entries on the education of teachers for educational contexts other than normal primary and secondary schooling. These are adult education, early childhood education, higher education, special education, and vocational and industrial education. All of these are areas in which there has been a great increase in activity in recent decades. While many of the practices discussed in relation to teacher education for regular school contexts are used in the education of teachers in these special contexts, their methods of recruitment and the distinctive characteristics of their student clientele warrant their being treated in special articles grouped together in the Encyclopedia.

It would be almost miraculous if there were no serious omissions from the Encyclopedia. New concepts, new orientations, new methods, and certainly, new research appear daily in the literature on teaching and teacher education. It is to be hoped that such omissions are few and that the inclusions are of such durability as to make the Encyclopedia useful for years to come before it is relegated to the status of an historical document.

3. How to Use the Encyclopedia

The Encyclopedia is designed to serve two main purposes. Its first purpose is to enable readers to obtain authoritative statements concerning specific topics in teaching and teacher education. Each entry concludes with a list of references which the reader will find useful in locating further reading on that topic.

The second purpose of the Encyclopedia is to enable readers to obtain comprehensive and systematic knowledge of the whole area of teaching and teacher education or perhaps important large areas of knowledge that form parts of the whole. For this purpose the reader might begin with the sections of this Preface concerned with the Conceptual Framework of the Encyclopedia and its Contents. Then the Table of Contents might be consulted in order to see the titles of individual articles and where they fit into the general framework. Next each section of the Encyclopedia begins with a figure illustrating which part of the conceptual framework is focused upon and an overview of the articles within it. These overviews include summaries of the articles and indicate associations between individual articles and others, both in the same section and in other sections. Again, readers will find helpful reference lists at the end of each article.

Should the reader discover that there is no special article on a particular topic, the Subject Index at the back of this volume should be consulted. Authors were asked to identify key words or phrases in their articles which constitute cornerstones in the structure of information they wished to convey. These terms formed the basis of the Subject Index. In addition, the Author Index also provides a useful entry point.

Also included is a full list of contributors and their affiliations, indicating which articles they have written.

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December 1986

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