

THE
INTERNATIONAL ENCYCLOPEDIA
OF
EDUCATION

Research and Studies

Volume 1

Preface

A-B

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PERGAMON PRESS

OXFORD · NEW YORK · TORONTO · SYDNEY · PARIS · FRANKFURT

U.K.	Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 0BW, England
U.S.A.	Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, New York 10523, U.S.A.
CANADA	Pergamon Press Canada Ltd., Suite 104, 150 Consumers Rd., Willowdale, Ontario M2J 1P9, Canada
AUSTRALIA	Pergamon Press (Aust.) Pty. Ltd., P.O. Box 544, Potts Point, N.S.W. 2011, Australia
FRANCE	Pergamon Press SARL, 24 rue des Ecoles, 75240 Paris, Cedex 05, France
FEDERAL REPUBLIC OF GERMANY	Pergamon Press GmbH, Hammerweg 6, D-6242 Kronberg-Taunus, Federal Republic of Germany

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First edition 1985

Library of Congress Cataloging in Publication Data

Main entry under title:

The International encyclopedia of education

Includes bibliographies.

Index: v. 10.

1. Education—Dictionaries. 2. Education—Research—
Dictionaries. I. Husén, Torsten, 1916—

II. Postlethwaite, T. Neville.

LB15.I569 1985 370'.3'21 84-20750

British Library Cataloguing in Publication Data

The International encyclopedia of education

1. Education—Dictionaries

I. Husén, Torsten. II. Postlethwaite, T. Neville
370'.3'21 LB15

ISBN 0-08-028119-2

*Computer data file designed and computer typeset by Page Bros
(Norwich) Ltd.*

Printed in Great Britain by A. Wheaton & Co. Ltd., Exeter

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PREFACE

The International Encyclopedia of Education: Research and Studies is the first major attempt to present an up-to-date overview of scholarship brought to bear on educational problems, practices, and institutions all over the world. The purpose of this Preface is to answer five questions in order to explain the principles which have guided the endeavor. (1) Why is there a need for an international encyclopedia focusing on education? (2) What is meant by the key terms in the Encyclopedia's title? (3) Through what stages did the work of compiling the Encyclopedia progress? (4) How have the contents of the volumes been organized? (5) How should the various sources of information embodied in the Encyclopedia best be used?

Before turning to these five questions, something should be said about the short history of research in education. By the turn of the century psychologists on both sides of the Atlantic began to undertake empirical studies in child development, individual differences, and the learning process with an eye to the implications of these studies for education. Such studies were conducted in universities, mostly in psychology and teacher-training departments. At that time there were few policy-oriented studies in education aimed at helping the planning and implementation of educational reforms. Before 1950 governments were usually not involved in commissioning and supporting policy-oriented educational research. But the situation changed rapidly in the 1950s when educational research with a clear policy orientation began on a broad scale. The research community received resources which enabled it to develop a broader knowledge base for educational change and improvement. Cases in point are the United States, Sweden, the United Kingdom, the Netherlands, and the Federal Republic of Germany. In the United States, for example, Research and Development Centers were established in the 1960s at leading universities. In each of them a concerted research effort was made to study a particular problem area, such as curriculum evaluation or the teaching-learning process. The number of research positions increased dramatically within a short period. It has been estimated that by 1982 there were some 25,000 full-time researchers in education throughout the world.

There was a similar expansion in information storage and retrieval systems. Examples include the Educational Resources Information Center (ERIC), though this is limited to research literature in English with a high priority given to American research, the International Bureau of Education (IBE) in Geneva, and the Council of Europe EUDISED system in Strasbourg. International cooperation in educational research has also been facilitated by such bodies as UNESCO, the Organisation for Economic Co-operation and Development (OECD), and the Council of Europe.

Until the early 1980s most graduate students from developing countries had taken their degrees at overseas universities. But a build-up of research competency is under way in the less developed countries and strong attempts are being made to create the indigenous capabilities needed in such countries to achieve ambitious educational goals and to bring about improvement in the quality of their education.

The time has come to take stock of the dynamic developments in the field of scholarly studies in education that have taken place all over the world since 1960. *The International Encyclopedia of Education* embodies such efforts by attempting to provide answers to three basic questions. What is the state of the art in the various fields of education? What scientifically sound and valid information is available? What further research is needed in various aspects of education?

1. *The Need for an International Encyclopedia*

Since the Second World War there has been an unprecedented expansion in the number of people engaged in education, in expenditures on schooling and on nonformal programs in education, and in efforts to make learning a lifelong pursuit. The number and complexity of problems to be solved have also increased. This expansion has been paralleled by what has been commonly called "the knowledge explosion"—the vast and rapid increase in books, journals, microfilms, and electronically stored information—far out-reaching educators' abilities to remain well-informed on a broader scale about educational matters. Recent decades have also witnessed increased global interdependence which has prompted education to become far more internationalized. The exchange of research results and experiences among scholars and practitioners has become much more frequent, making comparative education an important field of scholarship in education.

In view of these conditions, it is convenient for educators, social scientists, and the inquiring public to find, in one set of volumes, summaries of the state of all major aspects of education, gathered from worldwide sources. The present Encyclopedia has been designed to perform such a service. The 1,448 articles that comprise the contents not only review current knowledge about a great array of educational topics, but bibliographies at the end of each article direct readers to more detailed information about the topics. A total of 160 of these entries describe key characteristics of the educational systems in the nations of the world.

Earlier comments about this Encyclopedia being the first of its kind were not intended to suggest that no others focusing on education exist. Indeed, others are available. However, those issued in the past have either centered on educational affairs in a single country or group of countries, or else they have focused their attention on specific stages or levels of education. In contrast, the present volumes address education as a lifelong process, involving both formal and nonformal efforts at all levels of education, and they draw on sources from as many areas of the globe as possible.

In summary, the Encyclopedia is an attempt to present a well-documented, international overview of the major aspects of the education enterprise by taking into account the various practices and research paradigms in different socioeconomic, cultural, and political contexts.

2. *What We Mean by the Terms "Encyclopedia," "International," "Education," and "Research and Studies"*

The word "encyclopedia" derives from the medieval "encyclopaedia" which comes from the Greek expression *enkuklios paideia*, referring to a complete or "rounded off" body of knowledge. As mentioned earlier, the present work consists of brief descriptions of the state-of-knowledge resulting from scholarly inquiry into a wide range of topics of concern to a variety of people throughout the world. To assist readers in locating topics suited to their interests, entries are listed alphabetically. A separate volume contains a comprehensive, multilevel Subject Index containing over 45,000 entries, an Author Index, and a Classified List of Entries providing a useful schematic overview of the major areas covered.

"International" means that the entries carry significance for many nations. The research and studies reported have been conducted by scholars from various parts of the world, and the authors of entries come from over 100 countries. Furthermore, the Honorary Editorial Advisory Board which guided the selection and helped to achieve a good balance of contents is composed of members from every part of the globe. A particular effort has been made to include research in areas of special concern to the Third World, such as

planning and policy making, development education, comparative education, vocational education, and the economics of education. Attention has also been given to the role played by such international bodies as UNESCO and others in promoting education, educational research, and the international dissemination of research findings.

In spite of efforts to create a work that is unquestionably international, it was necessary to operate under the influence of four restrictions. The first was the limitations of the editors' own horizons. Even with efforts to conduct the broadest possible consultation to ensure that a complete spectrum of entries would be included in the Encyclopedia, they have been limited to approaching those colleagues around the world with whom they had had previous contact. Contacts made through the networks of UNESCO, the International Association for the Evaluation of Educational Achievement (IEA), and the International Institute for Educational Planning (IIEP) were especially valuable.

The second constraint has been that the Encyclopedia is published in English. Although this makes the work available to a wide audience, it is restrictive in that most authors were required to write in English.

A third constraint was that it is virtually impossible for any one editor or author to be familiar with all the research on a particular theme as conducted in all parts of the world.

A fourth condition influencing the balance of studies included was that the great bulk of empirical research in education has been carried out in the Anglo-Saxon areas of the world, in particular in the United States, and the Encyclopedia reflects this condition.

The next key term "education," refers to education as a continuing process throughout life. Its meaning here includes mainly formal experiences designed to provide the young with the knowledge, skills, attitudes, and values for competence in future roles as individuals, citizens, and workers. It is also concerned, however, with the educational needs of adults in all their roles—as workers, spouses, parents, citizens, in social and working life, in retirement, and as individuals who seek personal development.

From this perspective, it is clear that education as a field of scholarly endeavor is located at the crossroads of several academic disciplines. Education, as such, is not a scientific discipline of well-structured concepts, theories, and facts in the same sense as are physics and mathematics. Thus, many of the entries in the Encyclopedia reflect the multidisciplinary nature of education. There is often a gap between the theory and methods of a social science and the practice of education. It is interesting to remind ourselves of what the philosopher William James said in his "Talks to Teachers on Psychology" at Harvard University in the 1890s.

I say . . . that you make a great, a very great mistake, if you think that psychology, being the science of mind's laws, is something from which you can deduce definite programs and schemes and methods of instruction for immediate schoolroom use. Psychology is a science, and teaching is an art; and sciences never generate arts directly out of themselves. An intermediary inventive mind must make the application, by using its originality.

In establishing the major focus of the content of the Encyclopedia, emphasis was placed on including work emanating from research and studies in the major fields of educational endeavor. The subtitle "Research and Studies" was therefore given in the guidelines to editors and authors. These terms were used to denote scholarly empirical and nonempirical work involving theoretical, quantitative, qualitative, and systematic descriptive work, as well as analytical, integrative, and evaluative writing. In addition, these volumes include scholarly and professional work on education in a broad sense, hence the attention given to entries on national systems of education, sources of documentation, information on international and national institutions, on various paradigms in research, and on modes of disseminating research results. Where appropriate, research studies form the infor-

mation base that authors used in describing the state-of-the-art in the educational realms they surveyed.

Until well into the mid-twentieth century many Continental European university professors of education had their background in the history and/or philosophy of education. In the United Kingdom they were often experienced school pedagogues who were appointed to their positions in order to prepare prospective secondary-school teachers in the didactics of school subjects. In the United States and in the Scandinavian countries many had backgrounds in psychology. University studies in education—particularly in Germany—were conducted within the humanistic paradigmatic framework, largely in the tradition of the philosopher Wilhelm Dilthey (1833–1911) who made a distinction in psychology between *Verstehen* and *Erklären*, understanding and explaining. Education was considered to deal with unique, goal-seeking individuals. The concept of causality developed by experimentalists in the physical sciences was considered not to apply in human affairs.

Outside the institutes of education, however, there was another Continental research tradition of an experimental nature following the paradigm of the natural sciences. Out of studies in physiology in Germany and France emerged experimental psychology, with the first institute founded by Wilhelm Wundt in 1879. His student Ernst Meumann started empirical studies in education which were reported in his famous *Vorlesungen zur Einführung in die experimentelle Pädagogik*.

In the Anglo-Saxon countries a pragmatic and empirical tradition in educational research was established by studies in child development and learning as well as by attempts to measure human intelligence. The logical positivism, articulated, for instance, by the so-called Vienna Circle of philosophers in the 1930s, began to have a strong impact on the social and behavioral sciences on both sides of the Atlantic after the Second World War.

After 1945 a new generation of social scientists trained under Anglo-Saxon influence entered education and often reacted against the humanistic tradition which some tended to identify as conservative. They eagerly subscribed to new research paradigms with experimental design as the ideal and survey design next to ideal. Quantitative methods and sophisticated methods of statistical analysis constituted the core of what was considered fruitful methodology. Thus, the pendulum began to swing to the other extreme, and studies in education often tended to become ahistorical, aphiosophical, and out of cultural context.

More recently there has been a reaction against the prevailing positivist research paradigm, a movement which in many places is related to the wave of critical philosophy and neo-Marxism that swept social science departments at many universities in the wake of *les événements* of the late 1960s. The humanistic approach has begun to re-emerge, and some university scholars have stated programmatically that they want to get away from the positivist paradigm by conceiving of educational scholarship in the Continental European tradition and within the philosophical framework of phenomenological and hermeneutical paradigms. They want to stress understanding, that is to say, “empathetic” closeness to concrete phenomena under study instead of “positivist abstractions” removed from tangible reality.

What has been said about Europe and North America, in part, also relates to Third World countries, where there are those who feel that certain research approaches developed in highly complex, technical societies badly fit their cultures.

It is incumbent upon an international encyclopedia to take a broad view in presenting theoretical conceptions and methodological approaches in educational research. Those who turn to social science research in order to arrive at *the* “best” pedagogy or *the* most “efficient” methods of teaching are beset by the *naïveté* that education takes place in a

social vacuum. Researchers have begun to realize that educational practices are not independent of the cultural and social context in which they operate. Nor are they neutral to educational policies. Thus, pluralism in views and approaches has to be achieved, and dogmatic exposition of particular philosophies or "scientific" ideologies has to be avoided.

3. Stages in Developing the Encyclopedia

The preparation of the Encyclopedia began in 1980 with discussions between the publisher and a group of leading scholars in education and related fields. The Encyclopedia's aims, audience, and possible subject areas were discussed and it was concluded that the publication could suitably be organized around 18 areas of scholarly specialization related to education. For each area, the Editors-in-Chief located an eminent scholar to serve as the Section Editor. At the same time, the Honorary Editorial Advisory Board, comprising educational statesmen and scholars from various parts of the world, was established to help maintain a proper international orientation in selecting entries which would reflect educational problems and studies in various parts of the world.

Section Editors then prepared lists of recommended entry topics and potential authors. After these lists were reviewed by Section Editors at a meeting with the Editors-in-Chief and representatives of the publisher in March 1981, authors were invited by the Section Editors to prepare articles. A booklet of Guidelines to Authors on format and style was prepared by Pergamon Press and sent to all contributors. Authors were given the opportunity to use either British or American spelling according to their own practice. In addition, all contributors were requested to avoid sex bias in their use of language. When submitted, the articles were reviewed by both the Section Editors and Editors-in-Chief; often the author was consulted for possible revision. Finally, the articles were forwarded to Pergamon Press for final editing, including verification of bibliographic references, and printing. At any stage during this process, an additional expert in the area of an article was often asked to appraise the piece for content accuracy and balance. Thus, every article was inspected at several points in the editorial process for both content and clarity of presentation.

The compilers were fortunate in having advanced computer technology available for processing the articles through the various stages of production. Such technology enabled the publisher to issue the Encyclopedia with far greater speed and accuracy than has been possible with traditional editorial and printing techniques. For example, in the past it was necessary to complete pagination of the text before indexing could commence. In contrast, with computer database publishing techniques it is possible to key in the index terms at the same time as the article. The appropriate page numbers are then automatically generated for printing in the index volume. Furthermore, it is not necessary to keyboard the articles in strict alphabetical order. These time-saving techniques, along with others, reduced the time period between an author's completing an article and the final printing of the volumes.

A further advantage of storing the entire contents of the Encyclopedia on computer discs is that selected articles can be retrieved to meet the needs of specialist groups. In addition, articles held in the database can readily be updated to incorporate the latest developments in the field of education.

4. The Encyclopedia's Structure

To structure the body of knowledge known as education is no easy matter as it emanates from diverse scholarly disciplines. The basic choice was between presenting the knowledge by discipline with articles organized in comprehensive clusters or by presenting relatively

short articles in alphabetical order. Neither form is ideal. The advantage of the comprehensive chapter approach is that all information in a field, for example curriculum, is presented as a totality. The disadvantage is that specific aspects would not be dealt with as a topic in their own right. Furthermore, as some topics relate to more than one cluster, the assignment of topics to each cluster would be to a certain degree arbitrary. After much debate, it was decided to have easily identifiable discrete topic entries presented alphabetically with cross-references between relevant articles. In this way there is quick easy access to themes and topics typically referred to in education.

However, in order to identify and delineate topics, a different rationale was followed. Six major clusters of educational themes were identified. (1) Entries treating the social and psychological backgrounds of the learners in education derive from the section entitled *human development*. (2) Articles about the politics, economics, and planning of education are from the sections on *educational policy and planning* and the *economics of education*. (3) The big cluster focusing on the conduct of education draws its topics from the sections on *curriculum, teaching and teacher education, vocational and industrial education, special education, early childhood education, adult education, higher education, counseling and guidance, educational technology, and administration*. (4) The evaluation and systematic study of education are treated by entries in the sections on *evaluation and assessment* and *research methodology*. (5) The nature of the world's national school systems and comparisons among systems are found in articles from the sections entitled *comparative education* and *systems of education*. (6) Lengthy articles analyzing *social science and humanities disciplines* that bear on education form a final group of entries. For each principle area within these six clusters a Section Editor was selected. The nature of these sections and the names of the editors in charge of them are described below.

Entries concerning *human development* have been compiled under the section editorship of R. Murray Thomas of the Graduate School of Education at the University of California, Santa Barbara, USA. These entries do not present educational theory or practice but rather biological, psychological, and sociological facts and concepts relevant to educational practice. Some articles are designed to help the reader gain a preliminary overview of the territory (human development theories, learning theories, personality theories), while others describe in some detail a specific segment of the overall territory (genetic epistemology, psychoanalysis, existential theory, social learning theories). Some entries treat phenomena found in all cultures, such as physical growth, intelligence, individual differences, and play, whereas others present viewpoints from particular cultures such as Buddhist and Islamic theories of human development. Articles on such topical issues as drugs and development, child abuse, and television and development are included, and in each article the implications for child rearing, education, and counseling are discussed.

The entries in the *educational policy and planning* section have been edited by Hans N. Weiler of the Stanford International Development Education Committee at Stanford University, California, USA. The entries concern key issues in the development and implementation of educational policy in a variety of settings. Special attention is given to the theoretical controversies which have influenced the field of policy analysis since the 1960s. Among the important articles are ones on work and education, participatory planning, nonformal education policies, the political economy of education, women in education, and development and education.

The section on the *economics of education* has been produced under the editorship of George Psacharopoulos of the World Bank, Washington DC, USA. The economics of education is a new and fast-growing subdiscipline in the complex field of education. Hence, the section is timely in the sense of taking stock of theoretical developments and empirical

findings in a great number of countries. Special attention has been paid to topics that, by the early 1980s, had not yet appeared in formal textbooks—such topics as tracer studies, expected returns to investment in education, measuring school quality, elasticity of substitution between different types of labor, and accounts of educational planning models.

Within the group of sections on the conduct of education, the one on *curriculum* has been prepared under the editorship of Arie Lewy of the School of Education at Tel Aviv University in Israel. The articles fall into two major categories. The first category contains entries dealing with general problems of curriculum planning, including the development of instructional materials, criteria for judging the quality of school programs, the preparation of textbooks, and the utilization of various media as tools of learning. One group of articles deals with the organization of school programs, the relationship among curriculum units, and the characteristics of innovative approaches to school programs, such as the core curriculum, nongraded curriculum, independent studies, and curriculum contracts. Other entries concern the utilization of community resources, the participation of parents in decisions related to the curriculum, the role of subject matter experts in curriculum development, and issues related to the dissemination, adaptation, adoption, and implementation of innovative programs.

The second category of entries in the curriculum section contains articles about developments in and research on various school subjects. Besides having articles on traditional subjects, such as foreign languages, literature, mathematics, and science, there are also entries on “modern” subjects, such as communication skills, drug-abuse prevention, safety education, library-users’ education, and family-life education.

Vocational and industrial education crosses the boundary between in-school and out-of-school education. This section has been edited by Gordon I. Swanson of the College of Education at the University of Minnesota, St Paul, USA. The articles cover the planning of vocational education, the range of structures in different settings, the content of prevocational and vocational courses, teacher preparation, and the financing of programs. Articles discussing particular fields of vocational education, such as agricultural, business, and home economics education, are included.

The section on *teaching and teacher education* has been prepared under the editorship of Michael J. Dunkin, of the Centre for Teaching and Learning of the University of Sydney, Australia, and Gilbert L. De Landsheere, of the Laboratory of Experimental Pedagogy at the University of Liège in Belgium. Entries are concerned with three main areas of study in education: the nature of teaching, influences on teaching, and effects of teaching. To explore the nature of teaching is to study the concept of teaching itself and the activities, methods, styles, skills, and strategies adopted by teachers. Thus, articles in this section range from ones treating such issues as “Is teaching an art or a science?” to others concerning “What types of questions do teachers ask and how often?”

Defining and describing the process of teaching is not the same as explaining, predicting, and controlling it. To do all of these things, one needs to understand the ways in which such influences as teacher personality, the physical environment, and student attributes affect the behavior of teachers. Many entries review the results of studies of such matters as well as techniques used in preparing teachers for their vocation.

Perhaps the most important question of all for the section on teaching is that of teacher effectiveness. Thus, entries have been prepared on such issues as effects of teaching methods, of classroom questioning techniques, of student attentiveness, and of disciplinary procedures.

The field of *special education*, including compensatory education and provisions for the gifted, is surveyed in the entries edited by A. Harry Passow of the Teachers College,

Columbia University, New York, USA. Although the size of the population designated as in need of special education varies from nation to nation, every country has a sizable group of children and adults who, because of their physical, mental, or socioemotional handicaps or because of their unusual gifts or talents, require educational experiences which differ from those normally provided. Entries in this section concern the entire range of handicapped persons, including descriptions of the characteristics of each handicapping condition, its etiology and developmental consequences, emerging issues in the field, and problems related to educational and intervention strategies.

While giftedness and talent are not usually regarded as handicaps, there has long been recognition that individuals who possess potential for outstanding achievement in socially valuable areas require nurturance in the form of differentiated educational experiences. Information is provided in this section on the nature of the gifted and talented and of educational provisions provided for them.

During the past quarter of a century, questions of equality of educational opportunity have become major concerns in both developed and developing nations. A sizable segment of the population in most educational systems has been labeled disadvantaged or deprived and in need of compensatory education if it is to realize its potential. Ethnic and language minority groups, as well as socially disadvantaged children, tend to belong in this category. Articles are thus included on the theory and practice of compensatory education along with emerging issues in the field.

The section on *early childhood education* has also been edited by Professor Passow. Although there has always been awareness of the significance of early childhood education for the development of infants and young children, the past three decades have witnessed a tremendous growth in educational opportunities for such children—day care centers, nurseries, kindergartens, and special programs. These diverse provisions for the young are described in articles treating the theories and practices of a range of programs.

Entries in the realm of *adult, recurrent, and lifelong education* have been prepared under the editorship of Roby Kidd, Ontario Institute for Studies in Education, Toronto, Canada, and Colin Titmus, Goldsmiths' College, University of London, UK. The compilation of the articles in the section was begun by Professor Kidd, then taken up by Dr Titmus following Professor Kidd's death in March 1982. Dr Elizabeth Burge, at the Ontario Institute, assisted by Lloyd Minshall and Isabel Wilson, helped in editing the articles. The development of the field of adult education, along with the use of the terms permanent, recurrent, and lifelong education, has occurred mainly in recent decades, with the pace of growth quickening since the late 1960s. Formal studies and rigorous research in the field are now being undertaken in universities and research institutions throughout the world.

Articles in this section cover not only the concepts and terms used in adult, recurrent, and lifelong educational programs, but also the psychological and philosophical developments in the field, adults' social roles and their responsibilities, and life experiences which influence their motivation and learning patterns. Other entries treat teaching methods, techniques of needs assessment, curricula, and the governance and financing of adult programs. In addition, the multiplicity of national and international organizations and their roles in research and development are reviewed.

The articles on *counseling and guidance* were produced under the editorship of R. Murray Thomas of the University of California, Santa Barbara, USA. The entries are not limited to counseling activities found in schools, but rather encompass the broad range of techniques found throughout society. For the purpose of this section, the term "education" has been interpreted to mean helping people learn to manage their lives more effectively in all types of settings. As a consequence, many of the entries extend into the region of

professional counseling regarded as therapy. Topics included in the section consist of some focusing on different counseling techniques (behavioral counseling, bibliotherapy, microcounseling) and others centering on situations or problems for which clients seek the aid of a counselor (crisis counseling, career counseling, marriage counseling). Other articles describe the training and certification of counselors and problems faced in the conduct of counseling such as sex bias in counseling and counselor ethics.

The section on *educational technology* has been edited by Michael Eraut from the Centre for Educational Technology at the University of Sussex, UK. The articles concern the design, production, distribution, management, and use of learning resources. While the early developments in this field focused on instructional design, radio, television, and other audiovisual media, current attention centers strongly on the function of micro-processors and the development of computer and communications technology which fundamentally alter people's capacity to store, organize, and retrieve information. The section combines reviews of recent research on printed materials and simple audiovisual aids with accounts of the latest technology available to educators. Furthermore, broadcasting policies are described by regions, and distinctive approaches to the design of instructional materials are described, in addition to explanations of specific graphic, photographic, sound, and television production techniques. Some entries deal with the classroom use of learning resources. Other describe organizations in the field and explain modes of distributing learning resources through publishers, libraries, educational technology centers, and various forms of distance learning. Issues relating to personnel and the organization of educational technology are discussed in some depth.

The *higher education* section, also edited by Michael Eraut, is relatively small since a comprehensive encyclopedia of higher education was published in 1977 under the editorship of Asa Knowles. Besides being more international in its coverage, the section devotes most of its space to curriculum and teaching concerns which were given relatively little attention by Knowles. Thus the main foci are on the curriculum, the impact of higher education, teaching methods, faculty training, and development and teaching support services.

The organization, forms, and functions of the *administration* of educational systems and individual schools are dealt with in the articles composing the section co-edited by Luvern L. Cunningham, of the Department of Educational Policy and Leadership at Ohio State University, USA, and by Raphael O. Nystrand, of the School of Education at the University of Louisville, Kentucky, USA. The entries cover the administration of education at all levels. Patterns of educational administration in various parts of the world are described, along with studies of organizational theory and practice. The formalized preparation of persons for administrative positions is reviewed, and the development of regional and international organizations engaged in the preparation of educational administrators is inspected. Finally, the principal legal issues confronting educational administrators are analyzed—such issues as church-state relationships, school finance, collective bargaining of employee groups, comprehensive versus selective education, and student truancy.

The articles in the section on *evaluation and assessment* were solicited and edited by Bruce H. Choppin of the Center for the Study of Evaluation at the University of California in Los Angeles, USA, while those on *research methodology* were edited by Dr John P. Keeves, Director of the Australian Council for Educational Research in Melbourne, Australia. All the articles in the evaluation section were completed and edited by Dr Choppin before his tragic accidental death in Chile in July 1983. Evaluation, as a research activity, is increasingly seen as an essential step towards ensuring that the planned changes in an educational system are bringing about the desired results. Ideas from many branches

of science have been borrowed by experts in educational evaluation, resulting in the development of a variety of major evaluation styles, each of which is found among the entries in the Encyclopedia.

The assessment of student performance is an activity carried out routinely in schools around the world, utilizing tests and other approaches. Entries on testing cover the most recent findings on new test formats, ways of scoring and analyzing data, and newer research on reporting and interpreting tests results. In the 1970s both the traditional forms of tests and the methods used for analyzing test data were criticized from a number of perspectives. A range of alternative approaches to assessment and evaluation have since been proposed and appraised in the world's educational research community. This changing scene is covered by Encyclopedia entries contributed by psychometricians who are spearheading such work.

Entries in the *research methodology* section cover major approaches in educational research, techniques used, and means of disseminating results. Research approaches include a diversity of paradigms in education: naturalistic enquiry, historical methods, experimental methods, ethnographic methods, hermeneutics, and others. Techniques are described in entries on designs (experimental, cross-sectional surveys and longitudinal research methods), scaling, observation methods, and varieties of statistical analysis, particularly exploratory data analysis and multivariate analysis. Issues of disseminating research results are considered in entries on the diffusion of knowledge in education and on educational research as it relates to policy making. In addition, separate articles focus on such specific issues as ethical practices in research activities, research needs and priorities, policy-oriented research, and the training of research workers.

In an international encyclopedia the comparative aspect of the study of educational problems assumes a particular importance, since it adds to the international dimension and broadens the reader's perspective regarding problems encountered in different nations or communities. The *comparative education* section has been edited by Torsten Husén, Emeritus Professor of International Education at the University of Stockholm, Sweden. The entries include reviews of the history, concepts, methods, and issues in comparative education, as well as information about intergovernmental and nongovernmental institutions and selected organizations working in the general area of international and comparative education.

T. Neville Postlethwaite, Professor of Comparative Education at the University of Hamburg, Federal Republic of Germany, served as the Section Editor of entries describing 160 *national systems of education*. Authors for these articles were asked to follow, as far as possible, the same structure so that, for each country, the same range of material would be covered. The goals, structure, enrollments, and financing of education are described, as well as the training of teachers, means of curriculum development, the form of educational administration, principal educational research emphases where research exists, and prospects and problems for the near future. The discussion of these facets of a country's education system, in most cases, is prefaced by a description of geographic, demographic, political, economic, and cultural factors that significantly influence schooling and nonformal programs.

The bulk of articles in this section were written by authors from the relevant ministry of education. The advantage of this is that the authors had up-to-date information and statistics at their disposal. A disadvantage is that some authors from government agencies tend to write what is officially sanctioned.

There is a difference in length in the descriptions. Ideally, each article would have had 10,000 words, but due to space restrictions this was not possible. Hence the length of

article ranges from 2,000 to 5,000 words, with the longer articles describing the educational systems of large countries or those whose educational system had a significant influence on others throughout the world, and the shorter articles covering the educational systems of smaller countries.

A particular group of entries in the organizational scheme for the Encyclopedia contains lengthy articles surveying the bearing of particular disciplines in the social sciences and humanities as they relate to education—anthropology, historiography, law, philosophy, politics, instructional psychology, and sociology. This section was edited by Professor Torsten Husén.

In conclusion, we believe that the Encyclopedia presents a reasonable overview of the main areas of education and it has been our ambition to report the state-of-the-art in each of these areas.

5. How to Use the Encyclopedia

Education is, as pointed out above, not a field of scholarly studies unified by a traditional disciplinary orientation. There are, indeed, many and diverse disciplines with bearings on problems in education. Any attempt to structure the body of knowledge relevant to those problems meets with enormous difficulties. Even though the entries are listed alphabetically the reader cannot be sure that a given entry will contain the information he or she requires. We have therefore prepared an index volume containing a Subject Index, an Author Index, and a Classified List of Entries to help to overcome these difficulties and lead the reader to the needed information.

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. The user of the Encyclopedia, who wants information on a particular area in education, for example, research pertaining to the problems of immigrant education, should begin by looking up key words in the Index and then look up the entries to which he or she is referred. The Subject Index is thus an important instrument for the information seeker. The Author Index also provides a useful entry point.

The Classified List of Entries outlines the basic structure used in commissioning articles for the Encyclopedia and lists articles on related topics under general subheadings. Some articles are listed more than once. For example, the article entitled "Administration in Higher Education" is listed under both Administration and Higher Education. In addition, some headings cut across the section boundaries used for the purpose of commissioning articles for the Encyclopedia. The reader will therefore find all the articles relating to "reading" listed together, even though they were commissioned by two separate Section Editors.

Also included in the index volume is a full list of contributors and their affiliations, indicating which articles they have written. The list of major educational research journals should also prove a handy reference tool.

To aid readers in pursuing an interest beyond the material contained in a particular article, authors have listed further related sources of information among the references at the end of their entries and have, in addition, cross-referred to other articles in the Encyclopedia that are closely allied to their own.

6. Acknowledgments

No work of this magnitude emerges without a great amount of behind-the-scenes effort on the part of a variety of people. To several of these, a special debt of gratitude is due.

First, we are grateful to Robert Maxwell who first conceived of the idea of the Encyclopedia. Second, we deeply appreciate the commitment, competence, and wisdom that the Section Editors and Authors brought to their assignments. Third, we are indebted to their colleagues who offered advice on technical issues and to their secretaries for typing the manuscripts in final form. In particular, we are grateful for the skill and patience of our own secretaries, Birgitta Horn in Stockholm and Ingrid Ruopp in Hamburg, for maintaining efficient filing systems and retyping manuscripts rendered almost illegible by our editorial changes. We would like to express our deep gratitude to Pergamon Press for assigning such an excellent editorial unit to the task of guiding the Encyclopedia through the steps of production. Barbara Barrett, the Managing Editor, combined personal sensitivity with a high level of professional skill in facilitating the publication process at all its stages. Priscilla Chambers ensured that all articles were subjected to critical detailed review. Painstaking linguistic and technical editing was undertaken by Geraldine Billingham and Jan McLachlan. To all of them, our thanks.

June 1984

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