

LEADERS IN EDUCATIONAL STUDIES

Leaders in Educational Research

**Intellectual Self Portraits by Fellows of
the *International Academy of Education***

María de Ibarrola and D.C. Phillips (Eds.)

On Behalf of a Committee of the International Academy of
Education: Lorin Anderson, María de Ibarrola, Denis Phillips,
Gavriel Salomon, Ulrich Teichler



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LEADERS IN EDUCATIONAL STUDIES

Volume 7

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Scope:

The aim of the *Leaders in Educational Studies* Series is to document the rise of scholarship and university teaching in educational studies in the years after 1960. This half-century has been a period of astonishing growth and accomplishment. The volumes in the series document this development of educational studies as seen through the eyes of its leading practitioners.

A few words about the build up to this period are in order. Before the mid-twentieth century school teaching, especially at the primary level, was as much a trade as a profession. Schoolteachers were trained primarily in normal schools or teachers colleges, only rarely in universities. But in the 1940s American normal schools were converted into teachers colleges, and in the 1960s these were converted into state universities. At the same time school teaching was being transformed into an all-graduate profession in both the United Kingdom and Canada. For the first time, school teachers required a proper university education.

Something had to be done, then, about what was widely regarded as the deplorable state of educational scholarship. James Conant, in his final years as president at Harvard in the early 1950s, envisioned a new kind of university-based school of education, drawing scholars from mainstream academic disciplines such as history, sociology psychology and philosophy, to teach prospective teachers, conduct educational research, and train future educational scholars. One of the first two professors hired to fulfil this vision was Israel Scheffler, a young philosopher of science and language who had earned a Ph.D. in philosophy at the University of Pennsylvania. Scheffler joined Harvard's education faculty in 1952. The other was Bernard Bailyn, who joined the Harvard faculty in 1953 after earning his Ph.D. there, and who re-energized the study of American educational history with the publication of *Education in the Forming of American Society: Needs and Opportunities for Study* (University of North Carolina Press, 1960). The series has been exceptionally fortunate that Scheffler provided a foreword to the volume on philosophy of education, and that Bernard Bailyn provided one a foreword for the volume on the history of American education. It is equally fortunate that subsequent volumes have also contained forewords by similarly eminent scholars, including James Banks of the University of Washington, who has been a creative force in social education for decades and the prime mover in the field of multi-cultural education.

The *Leaders in Educational Studies* Series continues to document the growing and changing literature in educational studies. Studies conducted within the established academic disciplines of history, philosophy, and sociology comprised the dominant trend throughout the 1960s and 1970s. By the 1980s educational studies diversified considerably, in terms of both new sub-disciplines within these established disciplines and new interdisciplinary and trans-disciplinary fields.

Curriculum studies, both in general and in the particular school subject matter fields, drew extensively from work in philosophy, history and sociology of education. Work in these disciplines, and also in anthropology and cultural studies among others, also stimulated new perspectives on race, class and gender.

This volume, like previous volumes in the series, brings together personal essays by established leaders in a major field of educational studies. Subsequent volumes in the series will continue to document other established and emerging disciplines, sub-disciplines and inter-disciplines in educational scholarship.

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International Academy of Education*

Edited by

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INTRODUCTION

This volume contains intellectual self-portraits, or autobiographical sketches focussing upon major factors influencing their professional development, of fourteen fellows of the International Academy of Education. All these contributors have international reputations, based on their respective research careers; they come from many different countries and many different social and cultural backgrounds; the paths that led them to their present professional positions were often tortuous and sometimes extremely challenging; and they now do their research from bases in a variety of disciplines. In many cases early family influences were of major importance; for some contributors wars, social unrest, or social injustice was decisive; and in many cases an unexpected invitation to give a lecture or attend a conference, or accidental contact with a particular individual (a teacher, or perhaps a senior researcher) developed into an unexpected and major mentoring relationship that was crucial in their personal development. It is hoped that these personal stories will be of broad interest – and may even be a source of comfort or even of inspiration to younger colleagues starting their careers in the international educational research community.

Before introducing the authors more specifically, however, it is relevant to provide the reader with some background information about the *International Academy of Education* (IAE). It was established in 1986, as a result of the efforts of a small international group of researchers who happened in most cases to be personal friends: Torsten Husen, Gilbert de Landsheere, Benjamin Bloom, Neville Postlethwaite, Hellmut Becker, John Keeves, Herbert Walberg, among others. The official seat of the Academy is at the Royal Academy of Science, Literature and the Arts, in Brussels, Belgium, but its administrative centre has been with Dr. Barry Fraser at the Curtin University of Technology in Perth, Western Australia. The current president of the Academy is Dr. María de Ibarrola of Mexico, and the two immediate past-presidents are Drs. Monique Boekaerts (Belgium, The Netherlands) and Erik De Corte (Belgium).

The IAE is dedicated to strengthening the contributions of research to solving critical educational problems throughout the world, and providing better communication among policy-makers, researchers, and practitioners. This mission has led the Academy to undertake the editorship of journals, and the publication from time to time of book-length reports. In 2000 it launched – in a joint venture with the International Bureau of Education (IBE) in Geneva – the “Educational Practices

Series”. The 24 booklets that have appeared so far in the Series, are written (in English) by internationally well-known experts, and are disseminated by IBE in all its member countries. The pocket-format booklets each provide timely syntheses of research on educational practices that can improve student learning, and are designed for a broad international audience of educational professionals. The booklets can be freely reproduced (many have been copied tens of thousands of times), and some of them have been translated into as many as eight other languages (see <http://www.ibe.unesco.org/en/services/online-materials/publications/educational-practices>). A parallel IAE “Educational Policy Series” was launched in 2005, published and disseminated by the International Institute for Educational Planning in Paris. To date thirteen booklets have appeared (see <http://www.iiep.unesco.org/information-services/publications/education-policy-booklets.html>).

Turning to the present volume, it is important to bear a number of things in mind: First, the authors were given quite a free hand – their backgrounds and career trajectories were so diverse that the editors did not regard it as appropriate (or even possible) to specify the kinds of issues that should be discussed – and so the authors were merely asked to reflect on the factors that had influenced their development as scholars and researchers in education. Furthermore, only five of the fourteen fellows who wrote autobiographies were native speakers of English, but all wrote clear prose that conveyed their individual “voices”.

In alphabetical order, the authors are:

Lorin Anderson, University of South Carolina, USA; his expertise lies in the domains of educational measurement and research design.

Erik De Corte, University of Leuven, Belgium; his research is chiefly in mathematics learning and teaching, but he also has considerable experience in program development.

Andreas Demetriou, University of Cyprus, Cyprus; an educational psychologist whose work has focussed upon cognitive development, has also served as his country’s Minister of Education and Culture.

Kadriye Ercikan, University of British Columbia, Canada; a Turkish Cypriot by birth, she has expertise in mathematical methods of analysis of research data.

Patrick Griffin, University of Melbourne, Australia; his expertise is in psychometrics and research design.

Eric Hanushek, Hoover Institution, Stanford University, California; his field is economics of education, and he has considerable experience in policy analysis.

María de Ibarrola, Center for Research and Advanced Studies, Mexico; she is a sociologist of education, whose main research interest is in the relation between education and work.

D. C. Phillips, Stanford University, California; an Australian by birth, he is a philosopher of education and of social science, with special interest in research methods.

Gavriel Salomon, University of Haifa, Israel; an educational psychologist, he has worked on technology and learning, and also researches issues related to peace education.

William Schubert, University of Illinois, Chicago; his main interest has been in curriculum history and theory.

Crain Soudien, University of Cape Town, South Africa; he is a sociologist by training, but has done work in the policy field, and for some years has been Associate Vice-Chancellor at his university.

Ulrich Teichler, University of Kassel, Germany; by training a sociologist, he is an expert in the field of higher education worldwide.

Servaas van der Berg, University of Stellenbosch, South Africa; he is an economist of education, and has had considerable policy experience.

Stella Vosniadou, University of Athens, Greece; an educational psychologist, she has special interest in theories of conceptual change.

Finally, the two editors of this volume wish to stress that the book is a product of a sub-committee of the IAE consisting of Lorin Anderson, María de Ibarrola, Denis Phillips, Gavriel Salomon, and Ulrich Teichler. This group initially came together to work on a different project; and the present work came about as a pleasant offshoot. Over the course of several years and at least half-a-dozen multi-day meetings – three in Mexico – we became more than colleagues; our bonding while working on the two projects was initiated and later facilitated by generous support and funding from the Programa de Apoyo al Desarrollo de la Educación Superior (PADES), Subsecretaría de Educación Superior, Secretaría de Educación Pública (Development Support Program of University Education (PADES) and the Undersecretary of Higher Education, Ministry of Education, Mexico).

LORIN W. ANDERSON

IT'S A BIT HARD TO BELIEVE: REFLECTIONS ON AN UNFORSEEN CAREER TRAJECTORY

THE EARLY YEARS

I was born in May, 1945, and spent my formative years in Keewatin, Minnesota, a small mining town located on the Mesabi Iron Range, about 100 miles south of the Canadian border. My father was a welder; his father and his father's father were blacksmiths. For as long as I can remember, my mother worked in a local grocery store as a cashier. For the first seven years of my life, I was an only child. Two days after my seventh birthday my brother, Jack, was born.

There was a single elementary school in our town that was located about three blocks from my house. When I was five years old, I attended half-day Kindergarten, morning session. There were 12 children in my class and about the same number in the afternoon session. There were two sections of first grade, each with about 12 children. There was only one section of second grade, so the class size doubled. When I entered second grade, I was allowed to walk to and from school on my own. After school I would walk to my maternal grandmother's house and wait until my mother came from work and walked me home. It was a short walk because there were only two houses separating my house from my grandmother's. As might be expected, then, my Czech grandmother (and Finnish step-grandfather) played a significant role in my upbringing.

I have fond memories of my elementary school years and can recall the name of every teacher, Kindergarten through sixth grade: Miss Rolle, Miss Carlson, Mrs. Golden, Miss Talus, Miss Mackenzie, Miss Herrella, and Miss Carlson (again). Reading came easy to me and I enjoyed writing. [In third grade Miss Talus encouraged my writing and I had several poems published in the elementary school version of the high school newspaper.] But I was especially good in arithmetic. Mrs. Golden was the first one to notice how quickly I caught on in arithmetic class and she gave me a workbook containing advanced problem sets that I could attempt to solve when I had completed my assigned work. Part of what I remember about elementary school is that each teacher had an interest – perhaps, a passion – that defined her classroom and her approach to teaching. Miss Rolle loved drama and we acted out everything we read. Miss Carlson loved art and we had an art exhibit open to the public at the end of each semester. Mrs. Golden lost her husband in World War II and their only son was studying for the priesthood. So themes of family, love, loss, and faith permeated what we read and discussed in class. Miss Talus loved writing, Miss Mackenzie loved

literature, and Miss Herrella loved history. Their individual passions made learning interesting and as a group they offered a remarkably balanced curriculum.

When seventh grade rolled around I attended R. L. Downing High School, which was adjacent to the elementary school. There was an underground tunnel connecting the two schools so that students in both schools could share the library, swimming pool, gymnasium, and lunch room. It also made it easy to move from school to school when the temperature dropped to 20 or 30 degrees below zero Fahrenheit. The high school was divided into a south end (senior high, grades 10 – 12) and a north end (junior high, grades 7 – 9). For some reason, my junior high years are a blur. I have very few memories, good or bad. I do not remember the courses in which I was enrolled or the name of a single teacher. When I think of my high school years, on the other hand, the memories flood in. I remember that I had very good teachers. Because the mining companies paid a large proportion of the taxes that supported the schools, the salary schedules for teachers on “the Range” were higher than those for any other school district in the state, including Minneapolis-St Paul and the suburbs. Consequently, our little town was able to attract some of the best teachers the state’s colleges and universities produced. I also remember that because of our small enrollment, approximately 70 students in grades 10 through 12, we were taught by the same teachers every year, with few exceptions. Miss Hecomovich taught history and geography, Mr. Heggie taught English, Mr. Herzog taught mathematics, and Mr. Mestnick taught science. In today’s vernacular that practice would be called “looping.” Finally, I remember that, again because of the small number of students, almost all students participated in some school-sponsored activity – athletics, band, choir, drama, and special-interest clubs. Many years later I learned that our school was an example of what Roger Barker and Paul Gump in their classic work, *Big School, Small School*, referred to as an “undermanned setting.”

Contrary to the possible stereotype of mining communities, education was highly valued. There seemed to be two reasons for this. First, many of the fathers, including mine, had served in the military during World War II. Returning to the United States in their early to mid 20s, they were more interested in getting a job and starting a family than attending college. As might be expected, then, they wanted their children, particularly their sons, to have the college experience they missed. Second, it was clear to everyone that iron ore was a nonrenewable natural resource. From 1900 to 1970, about 60% of country’s total iron ore output came from the Mesabi Iron Range. Iron ore production peaked during World War II, then gradually declined until the supply of high grade iron ore was essentially depleted by the time I graduated from high school in 1963. Working in the mines was no longer a viable career option for high school graduates.

COLLEGE EDUCATION

I cannot remember when I was NOT going to college. That is, attending (and graduating from!) college was not an option; it was a requirement. Whenever I came

home with a less-than-acceptable grade on my report card, one of my parents – typically my mother – would remind me quite emphatically that “You need good grades to get into college!” One of our neighbors, a self-proclaimed historian of the neighborhood, kept records of all of the children in the neighborhood who were his children’s ages – that is, born between 1943 and 1952. When I visited him in the early 1990s, he proudly displayed a hand-drawn chart that summarized his “findings.” There were a total of 24 names on the chart. Twenty had attended college and seventeen had earned at least a baccalaureate degree.

The traditional route to a college degree for graduates of R. L. Downing High was to attend Hibbing Junior College for two years while living at home, since the campus was only a 10-minute drive. You then completed your college education at either the University of Minnesota-Duluth or the “main U” (that is, the University of Minnesota, Minneapolis). This was the route that I was destined follow until I attended a winter conference of Presbyterian Youth on the campus of Macalester College in St. Paul, Minnesota during early January of my senior year in high school. At one of the early sessions, William Gramenz, the Dean of Admissions, spoke to the assembly, providing an overview of the college and inviting anyone who was interested in receiving more information to meet with him during lunch. I, along with two or three others, accepted his invitation. Each of us met with him for about ten minutes. He asked about the courses I was taking, where I ranked in the graduating class, and how well I had scored on the Scholastic Aptitude Tests. After hearing my answers, he asked whether I had applied for admission to the college. I told him I had not because my parents could not afford to send me to a private college. He told me that there was a new financial aid program for students from low income homes. He believed I would qualify, but that I would need to submit an application before he could be sure. I brought an application packet home, completed it, and sent it back to him. In late March, I received my acceptance letter and a financial aid package that covered tuition, room, board, and books. In early September, my parents drove me from “the Range” to “the Twin Cities” and a new chapter of my life began.

The transition from a rural high school to a private liberal arts college was not an easy one. Fortunately, I roomed with a guy whose father was a Presbyterian minister and whose sister had graduated from Macalester four years earlier. Whenever I felt confused or lost, Paul would help me regain my footing and direction. All Macalester students enrolled in four courses per semester, with a total of 32 courses required for graduation. Eight courses were needed for a major and four for a minor. All Macalester freshmen had to complete the following four courses each semester: one course in your intended major, one Western civilization course, one English (primarily writing course), and one foreign language course. Because I had done well in mathematics in high school and wanted to stay away from so-called “reading courses” (that is, courses that required a great deal of reading), I chose to major in mathematics and minor in education (so I could get a job after I graduated).

After a challenging freshman year, one riddled with numerous self-doubts, I settled into a routine. Over the next two years, my study habits improved as did

my grades. I found myself paying closer attention in class and “knowing” what to listen for. Any doubts that I would be able to “make it” vanished. As I was planning the course schedule for my senior year, I was approached by a friend, a psychology major, who told me that her advisor, Jack Rossman, had received a grant from the federal government to train about a dozen undergraduates in the philosophy, design, conduct, and interpretation of educational research. She knew that there were two or three openings in the year-long seminar and suggested that I meet with Dr. Rossman. I did so and the following fall semester I found myself knee deep in a field I did even know existed before I signed up for the course. Each member of the seminar was expected to design and conduct an original research study, write up the study and its results, and make an oral presentation at the end of the spring semester. Because my major was mathematics and because I was doing my student teaching at the time, I chose to investigate the relationship between attitude toward mathematics and mathematics achievement among high school sophomores. Although the study was modest (almost as modest as the correlation between attitude and achievement), its impact on me was profound. I found something exciting about research and the seeds of a budding educational researcher had been planted.

TEACHING, AND GRADUATE SCHOOL

In June, 1967, I received my B. A. in mathematics from Macalester, the first of my extended family to earn a college degree, and accepted a position as a mathematics teacher in a rural high school not far from Duluth, Minnesota, and about 75 miles from my hometown. During the summer following my first year of teaching, I began work on a Master’s Degree in Educational Psychology at the University of Minnesota, Duluth, and completed the degree in three summers. During the second year of teaching at that rural high school, I accepted a position as a junior high mathematics teacher in a suburban school system south of St. Paul for the following year. Midway through my fourth year of teaching – my second year of teaching at the junior high school – I came to the realization that I really did not like teaching and I was not particularly good at it anyway. I was in a bit of a quandary so on a snowy December day I drove from Minneapolis to Duluth to seek advice from my Master’s advisor, Moy F. Gum.

Being trained in counseling psychology, Moy listened patiently to my story, the bottom line of which was that I did not want to continue teaching, but I did not know what I wanted to do. Operating in the tradition of Carl Rogers, he would ask periodically, “And how does that make you feel?” At one point I remember replying, “Like I’ve wasted the last four years of my life.” After about thirty minutes, he asked “What do you really enjoy doing? What are you passionate about?” In response I recounted my experience in the educational research seminar. After I finished, he said, “You know, I was a doctoral student of Benjamin Bloom at the University of Chicago. I just received a letter from Ben, a letter I assume he sent to all of his former doctoral students, asking if I could recommend someone who would enroll in the

doctoral program in Measurement, Evaluation, and Statistical Analysis (MESA) and serve as his graduate assistant. Would you be interested?" I think I simply nodded. I got up from my chair, thanked him for his time, and began to leave his office. "OK, then," he said. "I'll get in touch with Ben."

During the Christmas holidays, I talked with my wife and my parents about my state of mind. My mother thought I was insane to consider "leaving a good job." My father said that I should have "something in hand" before I give something up. My wife of four years, knowing how unhappy I had become, urged me to "do something" because I was not the easiest person with whom to live.

When the Christmas holidays ended, I was back teaching for my final semester. In late January, 1971, I was getting ready to leave for school when the telephone rang. It was just before 7 AM. I answered the phone and the voice on the other end said, "Hello. Is this Lorin Anderson?" "Yes," I said. "This is Benjamin Bloom. I'm calling to see whether you would be interested in a graduate assistantship here at the University of Chicago." "Yes, very much so," I muttered. "Good. I'll send you some material. You'll need to complete the application form and attend an orientation session in March. Can you do that?" "Yes, I can," I said, not knowing if I could or not. I attended the orientation session and shortly after that tendered my resignation as a junior high mathematics teacher. In August, 1971, I moved to Chicago and began my doctoral studies.

In retrospect I could not have arrived at the University of Chicago at a better time. Phil Jackson's *Life in Classrooms* and Bob Dreeben's *On What is Learned in Schools* had been published quite recently. Dan Lortie was working on *Schoolteacher*, Ben Wright was beginning his work on the Rasch model, and Ben Bloom was pulling together the research that provided the basis for *Human Characteristics and School Learning*. The stipend associated with my graduate assistantship permitted me to be a full-time student. As Bloom's assistant, I was assigned to a small office in Judd Hall. Having an office in the Department of Education allowed me to spend hours in informal conversations with Jackson, Dreeben, Jake Getzels, Herb Thelen, and, of course, Bloom himself.

My primary responsibility as Bloom's graduate assistant was to locate research studies that were relevant to (and generally supportive of) his theory of school learning. Briefly, Bloom believed that variation in student achievement could be explained by three factors: cognitive entry behaviors, affective entry characteristics, and quality of instruction. I sought out correlational studies, experimental studies, and quasi-experimental studies that examined the relationship of these three factors, individually and collectively, with student achievement. Studies that incorporated all three factors were highly prized indeed. As might be expected, I spent countless hours in Regenstein Library. If I returned to his office "empty," he suggested that I needed to double my efforts since he was convinced that certain studies must exist. "Someone surely has studied that," he would say, and off I would go.

The summer before I began my studies at Chicago, Bloom had been involved in a week-long curriculum development seminar in Gränna, Sweden. The seminar was

attended by teams of six subject specialists from each of twenty-three countries. One outcome of the seminar was the establishment of Curriculum Research Centers in several of the participating countries. As a result of the seminar and also because of Ben's involvement in studies conducted under the auspices of the International Evaluation of Educational Achievement (IEA), one or more international scholars seemed to be visiting him all the time. Fortunately for me, Ben invited me to attend many of these informal meetings. As a result, I got to know Torsten Husen (Sweden), Arieh Lewy (Israel), Gilbert de Landsheere (Belgium), John Keeves (Australia), and Neville Postlethwaite (England, Germany). These meetings stimulated an interest in international and comparative education and allowed access to a vast network of international educators. For these contacts alone, I shall always be grateful to Ben.

It was under Ben's tutelage that I became aware of the writings of John (Jack) Carroll. I found his model of school learning to be a masterpiece. It was simple, elegant, and based, at least in part, on empirical evidence that he had gathered during studies of the predictive validity of a foreign language aptitude test that he had designed. When I met Jack for the first time at a conference on time and learning held at Northwestern University in 1981, I was awestruck and tongue-tied. Somehow I found my wits long enough to ask him if I could edit a book of his writings. He looked puzzled for a moment, but after I spent a half hour or more recounting everything I could remember about his work, he agreed. The book was published by Lawrence Erlbaum Associates in 1985. But, I'm getting ahead of myself!

MY LATER CAREER

With doctoral degree in hand, I accepted an appointment as an Assistant Professor at the University of South Carolina. I chose South Carolina over several other offers for two reasons. First, the faculty was just beginning to design graduate degree programs in educational research. I had always enjoyed building things and a new graduate degree program was no exception. Second, I was able to choose the courses that I wanted to teach, rather than be assigned courses to teach (as I would have at the other universities). In any case, in August, 1973, I moved to Columbia and began teaching my first university course that September.

In addition to planning and teaching my courses, I began to contemplate how best to negotiate the tenure and promotion system with its emphasis on research and scholarship. My doctoral thesis was entitled "Time and School Learning" and it was an empirical investigation of Bloom's belief in the modifiability of human characteristics within the context of the Carroll model of school learning. Specifically, I investigated the extent to which a week-long instructional program could *increase* the percent of instructional time that students spent engaged in learning thereby *decreasing* the total amount of time they would need to achieve some pre-set standard of mastery. Because the results were quite positive, I was reasonably certain that some publications could result from that study. In fact, over my career, five journal

articles, two book chapters, and two edited books were published, all derived from my doctoral research and additional data that I collected from studies on the topic that I had conducted during my first five years at the University.

During my time at Chicago, I communicated frequently with James Block, who was my predecessor as Bloom's graduate assistant. Jim had worked closely with Ben as Ben developed his ideas about mastery learning and Jim's doctoral thesis was a study of the impact of setting different mastery performance standards (e.g., 75%, 85%, 95%) on students' subsequent achievement and attitudes. Sometime in 1974, Jim invited me to co-author a relatively short monograph on mastery learning written for teachers and administrators. I gladly accepted and *Mastery Learning in Classroom Instruction* was published in 1975. Jim and I also collaborated on a book chapter which was published in 1976 in which we explored the psychological underpinnings of mastery learning. Publications based on my doctoral thesis coupled with the publishing opportunities offered by Jim Block facilitated my promotion to the rank of Associated Professor with tenure after my third year on the faculty.

I had been teaching a course in affective assessment (e.g., attitude scales, interest inventories, self-concept measures) for five or six five years when I became frustrated by the absence of a coherent treatment of the field. I contacted an editor from Allyn and Bacon whom I had met at several conferences and asked whether he would be interested in a book on affective assessment in education. He was open to the idea and I sent him a prospectus and a draft of the first chapter. Soon thereafter I received a contract and in 1981, *Assessing Affective Characteristics in the Schools*, was published. A second edition, co-authored by Sid Bourke of the University of Newcastle (Australia), was published by Lawrence Erlbaum Associations in 2000.

In April, 1980, while attending the Annual Meeting of the American Educational Research Association, I attended a breakfast hosted by the University of Chicago faculty. When I arrived, Dick Wolf of Teachers College, Columbia University, was already seated and invited me to sit with him. He introduced me to Doris Ryan of the Ontario Institute for the Study of Education. During breakfast Doris began to discuss the IEA Classroom Environment Study. She had been appointed as the International Research Coordinator and was greatly concerned about a rift among members of the planning committee in terms of whether the focus should be on teachers, students, or both. In addition, there was disagreement as to whether to observe and code specific behaviors (e.g., asking questions, providing feedback) or larger activity segments (e.g., discourse, seatwork). I briefly described some of my research, which she saw as a middle-of-the-road position, and she invited me to the next planning meeting. I attended that meeting and numerous other meetings in several countries over an eight-year period. Finally, nine years after my initial involvement, *The IEA Classroom Environment Study* was published.

In 1984, I received a telephone call from Brian Rowan, who at the time was at the Far West Laboratory for Educational Research and Development in San Francisco. Brian was working on a proposal to submit to the U. S. Department of Education for the purpose of conducting an evaluation of the federal education program referred to

as Title I or, at the time, Chapter I. Title I/Chapter I programs are intended to improve the quality of education for low-income students. The proposal called for the basic design to be replicated in six states, with each state having a state coordinator. He wondered if I would be interested in being the state coordinator for South Carolina. I expressed my interest and forwarded him a copy of a letter of support along with my CV. The study was funded and for the next year, I spent most of my non-teaching time working on the study. The final report was submitted to the federal government in 1986. Largely because of my research on Title I/Chapter I programs in South Carolina, I received a multi-year grant jointly funded by the South Carolina Department of Education and the Southeastern Regional Vision for Education (SERVE) consortium to conduct research on the state-funded compensatory and remedial programs. The results of this set of research studies were published in a series of journal articles and book chapters published from 1990 through 1994.

In December, 1988, I packed up my wife, Jo Anne, and our two sons, ages 9 and 11, and headed to Sydney, Australia, where I was to spend a semester in residence at the University of Sydney (or Sydney Uni, as they say “Down Under”). We traveled via Europe and stayed in a house outside of London for about two weeks, a house owned by Neville Postlethwaite. After stops in Paris and Bangkok, we arrived in Sydney in early January, 1989, and were met by our host, Michael (Mick) Dunkin. Although I had never met Mick, I had communicated with him on a regular basis for several years. I had read his book, *The Study of Teaching* from cover to cover and found it to be comprehensive, yet concise, largely because of its organizing framework. Mick was a gracious host, as was his wife, Iris. One day, not long after I had arrived, Mick showed me a letter he received from Torstein Husen and Neville Postlethwaite asking if he would serve as the section editor for the “Teaching and Teacher Education” entries in the second edition of the *International Encyclopedia of Education*. He had served as the editor of the “Teaching and Teacher Education” entries in the first edition of the *Encyclopedia*. As we talked he came to the realization that he really did not want to be involved in the second edition. He turned to me and asked if I would be interested in the job. I thought about it for a few days and told him that I would. He conveyed my interest and willingness to Neville Postlethwaite who sent me a formal letter of invitation, which I accepted.

In February, 1991, I attended a meeting attended by all section editors held in Malaga, Spain. It was an intensive three-day meeting, but with lots of time to hobnob with the other section editors. It was during this meeting that I renewed friendship with colleagues in the international community and made new ones. The tasks of developing an organizing framework for the “Teaching and Teacher Education” section, identifying appropriate entries within the framework, contacting writers for the entries, and reading, revising, and editing manuscripts were daunting. In May, 1994, slightly more than three years after the initial meeting, the *International Encyclopedia of Education, Second Edition* was published. By my count, the entries in my section totaled just over two million words. Following the publication of the *Encyclopedia*, each section editor was responsible for the publication of a “spin

off,” stand-alone volume. The *International Encyclopedia of Teaching and Teacher Education, Second Edition* was published in January, 1996.

Somewhat ironically, January, 1996, was also the month in which I suffered my first heart attack. I had been awarded a sabbatical leave for the Spring semester, so following the angioplasty, I began to work on my sabbatical project. Despite having the cardiac procedure, I was a bit sluggish and was slow to accomplish much of anything. I had difficulty concentrating and lacked the stamina to work a full day. So, it should have come as no surprise, that in June, 1996, I had a second heart attack, one far more serious than the first. Apparently, the scar tissue from the angioplasty had closed one of the coronary arteries almost completely. This time three coronary artery bypass grafts (CABG, pronounced “cabbage” – medical humor) were required. During my 23 years at the University of South Carolina I had accumulated 180 days of sick leave. Consequently, I was on extended medical leave until June, 1997.

But enough of my health issues! To continue with the story, we have to go back in time to the Annual Meeting of the American Educational Research Association, which was held in Atlanta, Georgia, in April, 1993. Once again the setting was the breakfast hosted by the University of Chicago faculty. Shortly after I arrived I was approached by Ken Rehage, a professor at the University who also served as the Editor of the National Society for the Study of Education (NSSE) yearbooks. He told me that he was interested in producing a yearbook on Bloom’s Taxonomy of Educational Objectives that would coincide with the 40th anniversary of its publication. He asked if I would be interested in editing a yearbook on the topic. I told him that I would be interested, but there was one problem. I had never read the book. “Surely you must have read it,” Ken replied. “You’re Ben’s student!” I confessed that like many educators I could recite the six levels of the Taxonomy, but that is as far as my knowledge went. Interestingly, several years later Ben told me that the Taxonomy was “one of the most cited, least read books in American education.” Ken insisted that I was the one for the job and that I should begin by reading the book. Before breakfast had ended, I had agreed to accept his invitation.

My first task, after reading the book, of course, was to find a co-editor. I asked Lauren Sosniak, also a student of Bloom, to serve in that capacity and, fortunately for me, she accepted. The next task was to establish an organizing framework. We decided to open with a chapter written by Bloom, follow that with excerpts from the original text (for those, like us, who hadn’t read it), and end with a chapter written by David Krathwohl, one of the five contributing authors of the cognitive taxonomy and the senior author of the affective taxonomy. In between there would be three chapters examining the psychological basis for the Taxonomy, the philosophical assumptions made by the authors of the Taxonomy, and the empirical evidence supporting the hypothesized structure of the Taxonomy. Then, there would be five chapters discussing the impact of the Taxonomy on testing and evaluation, curriculum, teaching and teacher education, and international curriculum development and research. Once the framework had been determined, the third and

final task was to find people who would be willing to write the chapters. Ultimately, *Bloom's Taxonomy: A Forty-Year Retrospective* was published in 1994.

Because of my heart attacks, 1996 was pretty much a lost year. Early that year, I accepted a three-year appointment as the Chairman of the Editorial Board of the *International Journal of Educational Research*. In April I attended my first Editorial Board meeting at the Annual Meeting of the American Educational Research Association in New York City. Neville Postlethwaite, the previous Chairman, stayed on as a member of the Editorial Board. In Neville's status report he indicated that there was enough material for the current volume, but the Board had to start identifying themes and contributors for the next volume. I returned home and soon experienced my second heart attack. During my convalescence Neville served as "acting Chairman." I resumed the Chairmanship of the Editorial Board at the AERA meeting in April, 1997. I finished out my three-year term and accepted a second three-year term, which ended April, 2002. My role as Chairman of the Board of an international journal provided additional opportunities to work with educators throughout the world.

Sometime late in 1996, David Krathwohl telephoned me. He congratulated me on the quality of the 1994 NSSE Yearbook and then asked if I wanted to work with him on a revision of Bloom's Taxonomy. He had contacted the Education Editor at Longman, Virginia "Ginny" Blanford, and she was keen to support a revision. I told him of my health issues and said that I was interested but I would have to wait until I felt a bit stronger before I could get involved in the project. In the meantime, I suggested that he assemble a group of psychologists, curriculum specialists, teacher educators, and testing and evaluation experts that would be willing to work on a multi-year project. I gave him some suggestions and he set out to pull together a team. By early Spring I was feeling much better and I called Dave, informed him of my health status and suggested that he schedule an initial meeting of the team he had assembled. We met for the first time in March, 1997, and twice a year thereafter until the final draft of the book was completed in 2000. Between meetings, we each had our writing assignments. In 2001, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy* was published.

Most of what I had published as an academic had had little impact on the educational world. As one of my colleagues replied when as a young faculty member I told her with pride that I had had an article published in the *Journal of Educational Psychology*, "That's where good research goes to die. It's a refereed journal, but no one reads it. They skim through the table of contents and pick out one or two articles that seem interesting to them or are relevant to their work." Therefore, I was quite surprised with the reception of what came to be known as the "revised Bloom's Taxonomy" or RBT. Suddenly, invitations to speak came via telephone, e-mail, and even text messages. I accepted some of the invitations and declined others. In 2004 I was asked by several curriculum consultants in the South Carolina Department of Education to conduct a year-long series of workshops for administrators and teachers as to how the RBT could be used in the revision of the state's academic standards.

In 2006 I began to work with the North Carolina Department of Public Instruction as a consultant to their Career Technology Education division to help them develop standards and assessments based on the RBT. My work with them ended in 2012. In 2009 I met with curriculum consultants on the academic side of the aisle in North Carolina to show them how to use the RBT to design what they termed “essential standards.” We met in subject area groups every month for 18 months. I have given presentations about the RBT in Albania, Canada, Chile, Serbia, and South Africa.

I retired from the University of South Carolina in May, 2006, partly so I could take advantage of the increasing number of consulting and travel opportunities and partly because I had become tired of the academic life. The tremendous excitement I had experienced early in my career had simply vanished. With respect to my personal development, I had moved into Erik Erickson’s generativity stage. Simply put, it was time to give back and my current work has enabled me to do just that.

What lessons can be taken from this tour through my personal history? What factors have contributed to whatever success I have experienced? I would suggest there are three. First, there were numerous what might be termed “chance occurrences.” If I had not attended the Presbyterian Youth conference and met with William Gramenz, I would have never attended Macalester College. If I had not chatted with my college friend about my senior year class schedule, I never would have met Jack Rossman and been introduced to educational research. If I had not discussed my unhappiness with teaching with Moy Gum and if Moy had not been Ben Bloom’s student, I would have never attended the University of Chicago. If I had not attended the University of Chicago breakfasts at AERA I never would have met Doris Ryan and become involved in the IEA Classroom Environment Study, nor would I have been approached by Ken Rehage and “encouraged” to edit the retrospective and prospective book on Bloom’s Taxonomy. And, if the book had not been published and had I not invited Dave Krathwohl to contribute to it, I never would have worked on the revision of the Taxonomy.

Second, I took advantage of the many opportunities presented me. Sometimes I made my choice based on curiosity and/or interest (e.g., enrolling in the research seminar in college). At other times, my choice was made primarily as a result of a sense of duty (e.g., agreeing to edit the NSSE yearbook). “Chance occurrences” happen often and they happen to most people. The problem we face when confronted with these “chance occurrences” is to decide which opportunities to embrace and which to ignore. Choosing to embrace an opportunity typically means making a commitment to spend a great deal of time and expend a great effort. Most of the projects associated with the opportunities that I chose were multi-year projects, ranging from two or three years (e.g., the research on compensatory and remedial federal and state programs) to eight or nine years (e.g., the work on Bloom’s taxonomy and my involvement with the IAE Classroom Environment Study).

Third, and related to the second, I worked hard and did my best. My father told me over and over again, “The world owes you nothing. You have to earn everything you

get.” I do believe that effort IS more important than ability. I also believe that setting high standards for yourself keeps you striving and does not allow you to become self-satisfied and complacent. At the same time, however, working long and hard to achieve high standards is not without costs (e.g., one ex-wife, two heart attacks).

In his autobiography, *Chronicles: Volume I*, Bob Dylan (who grew up about seven miles from where I did) differentiates between *influences* and *enablers*. As a musician and composer, his influences included Woody Guthrie, Hank Williams, and Robert Johnson. His enablers, on the other hand, were lesser known people who opened doors for him or provided support and encouragement when he needed it most. I find this distinction particularly useful as I examine my life as a researcher. Ben Bloom was an influence, while Moy Gum was an enabler. We need both influences AND enablers if we are to achieve success in our chosen field (or the field we happen upon).

In closing, I think it is important to note that I consider myself an educational researcher first and foremost. Many, if not most of my colleagues, consider themselves to be experts in particular academic disciplines who happen to do research. Denis Phillips, for example, is a philosopher who happens to do research in education. Gavriel Salomon is a psychologist who happens to do research in education. Rick Hanushek is an economist who happens to do research in education. My doctoral degree, however, is in research methodology. Consequently, I have spent a great deal of my career attempting to improve the quality of educational research (Anderson & Burns, 1989) and trying to make sense of research in education (Anderson, 2004). When all is said and done, I believe that how you see yourself is at least as important as who you are (or perhaps more so).

FAVORITE WORKS

Books

Assessing affective characteristics in the schools (1981).

The IEA Classroom Environment Study (1989), with D. W. Ryan and B. J. Shapiro.

Research in classrooms: The study of teachers, teaching, and instruction (1989), with R. B. Burns.

A taxonomy of learning, teaching, and assessment: A revision of Bloom's taxonomy (2001), with D. R. Krathwohl and others.

Increasing teacher effectiveness, Second edition (2004).

Inquiry, data, and understanding: A search for meaning in educational research (2004).

Essays and Articles

An empirical investigation of individual differences in time to learn (1976).

The relationships among teaching methods, student characteristics, and student involvement in learning (1978).

Time and timing (1985).

Time and school learning: An historical perspective and a conceptual framework (1999).

Benjamin S. Bloom: His life, his work, and his legacy (2003).

The educator role of educational evaluators (2007).

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ERIK DE CORTE

A GLOBALIZING, OPTIMISTIC-PESSIMISTIC EDUCATIONAL RESEARCHER

MY EARLY INTEREST IN EDUCATION

Born in June 1941, just about one year after the outbreak of World War II in Belgium, I grew up as an only child in a lower middle-class family. My parents, who were both born in the very early years of the 20th century, received little schooling. Compulsory education until the age of 14 years was introduced in Belgium only in 1914, just before the First World War started. However, the implementation was delayed by the war. After WWII when I was about 5 years old my parents started a small textile and lingerie shop. From May to September they extended their activity as market-vendors. When business slowed down my father worked in the building-industry.

However, although I was not raised in an “education family”, my interest in education developed at an early age. Indeed, already in the primary school I told my parents that I wanted to become a primary school teacher. And I even started to practice – one of my favorite games was “playing school”, and a younger friend from the neighborhood enjoyed being my docile pupil.

When I finished the 6th grade of primary school I was advised to skip the then still existing 7th grade, and started secondary school in the classical (Latin – Greek) track that lasted 6 years. However, I retained my plan to become a primary school teacher. Moreover, although I was quite good in Latin and Greek I lost the motivation for studying them. And thus against the advice of the psycho-medical-social center, I went to the teacher training college at the age of 15. My parents were quite pleased about it, because it was an entrée into a permanent and stable job in the civil service, very different from their rather uncertain livelihood. I finished my studies at the teacher training college as “primus inter pares” in June 1960, but instead of taking a teaching position (and to the disappointment of my mother) I expressed my desire to continue studying at the university. My father, although not well educated himself, supported my ambition, but he said: “If you fail at the end of the first year, it is over!” So I decided to take my chance.

FROM INTEREST IN STUDYING CHEMISTRY BACK TO EDUCATIONAL SCIENCES

At this stage in my academic studies my first choice was not to continue in pedagogy. During my teacher training years I had become very interested in chemistry. But

in those days access to the study of chemistry at the university in Belgium was restricted to people who had successfully ended the classic track in secondary education. The psycho-medical-social center advised me to study engineering – for this would have been possible assuming that I successfully undertook a preparatory year focused on mathematics, but which, however, I did not care to do. Consequently I returned to my first favored domain, namely education – which at that time was the only directly accessible field at the university for graduates of a teacher training college.

I ended the four year training program in educational sciences at the University of Leuven in July 1964. The scope of the program was quite broad, involving for instance several courses in philosophy. But what I appreciated very much was the heavy emphasis on psychology, including developmental, differential, social, and educational psychology, but also psychological testing and the study of children with disorders. Another strength was the rather substantial introduction to research methodology and statistics. An important part of the training during the last two years was the preparation of a master's thesis; I carried out an empirical study about the attitudes toward school subjects of non-promoted and normally progressing secondary school boys. Students' attitude toward each school subject was conceived in terms of four dimensions: two subjective ones (interest and capacity) and two more objective ones (utilitarian and formative value). The 136 participating students expressed their attitudes on four corresponding rating scales. The ratings of 68 non-promoted and 68 normally progressing students were compared by means of analysis of variance, thereby allowing me to test several hypotheses. During my work on this study my interest in educational research crystallized. Rather unusual in those days for a master's thesis, the study resulted in my first two publications: a journal article in *Psychologica Belgica* in 1964 and a small monograph with a summary in English in 1965.

With my degree of licentiate (today a Master's) in educational sciences I could again easily obtain a stable job teaching pedagogy and didactics in a teacher training college. But as at this time I had caught the "research virus", I chose to pursue the uncertain road of educational research. Already several months before the end of my studies the supervisor of my master's thesis, Prof. Swinnen, encouraged me to submit a grant proposal to the National Fund for Scientific Research (NFSR). After much hesitation I agreed to do so. The proposal was approved and on October 1, 1964, I became the second scholar in the field of education funded very moderately by the NFSR. A week before I had married Rita, so that two happy mile-stones in my life coincided.

BECOMING AN EDUCATIONAL RESEARCHER

The start of my career coincided with the founding of the Center for Psycho-Pedagogical and Didactic Research at the University of Leuven. The first project of the Center during the school year 1964–1965 focused on the evaluation of

mathematics education at the end of the primary school in the Province of Limburg. In collaboration with the team of superintendents of the Province, we (the supervisor of my master's thesis, a colleague and myself) developed an achievement test, which started from an inventory of the currently valid objectives of mathematics education that were held to be achievable by the average pupil (on the condition that they had received a good quality education). The test was administered to over nine thousand sixth graders from about five hundred schools. The project initiated a long period during which a similar test for mathematics but also for the mother tongue were constructed yearly, and administered at the end of the primary school to about forty thousand pupils of the Flemish Catholic schools.

Reflection and discussion about this project resulted in the development of a theoretical model for the evaluation of educational achievement. Two major issues that received considerable attention were: 1. The need to move away in educational evaluation from what Glaser (1963) has called norm-referenced tests toward criterion-referenced tests that use an educational criterion instead of a statistical norm for judging achievement; 2. The recognition of the importance of educational objectives as a basis for the construction of such tests, and therefore the need to develop a methodology for the determination and formulation of objectives. This latter theme became the central focus of my doctoral dissertation, namely a theoretical and empirical study of the determination, formulation, classification and evaluation of the cognitive objectives of mathematics education at the primary school. With respect to the determination of objectives, an empirical study was carried out whereby a list of objectives for primary math education was judged – by about 100 educational professionals (superintendents, teachers of teacher training colleges, headmasters and teachers of elementary schools) – in terms of three aspects: 1. the degree to which they are currently considered as established and valid objectives; 2. the degree of their educational desirability, in other words should one continue to pursue them; 3. their degree of attainability by average students assuming that high quality education is provided. With regard to classification, starting from a critical analysis of the well-known Bloom taxonomy of educational objectives, an alternative classification was developed based on Guilford's structure-of-intellect model. A recent description of this classification system and a comparison with a revised version of Bloom's taxonomy is available in Anderson & Krathwohl (2001). The defense of my dissertation took place in March 1970. My father, who was very proud, died suddenly two months later, so I was very pleased that he had at least lived to see my defense.

My work on educational objectives had an impact on primary education, especially through several practice-oriented publications (e.g. De Corte & Janssens, 1974; sixth edition 1983). Probably the involvement of a large group of the superintendents in the study was instrumental in this respect. Teachers were strongly urged to reflect on and to make explicit the objectives of their lessons, but many of my fellow-students from the teacher training college who had by then a number of years of experience as teachers, were not very pleased with my impact on their daily practice. Thus

I experienced here for the first time the well-known phenomenon of resistance to change.

Nevertheless, and no doubt due to my basic training as an elementary school teacher, the choices of my research topics have always been guided by two objectives: Contributing to the advancement of our scientific knowledge about the processes and outcomes of learning and teaching, and at the same time contributing to the research-based improvement of educational practices. The tension between both objectives has continuously been a challenge for me personally, but this tension also still exists in the field of educational psychology as a whole.

Based on my PhD work I obtained a four year grant from the NFSR starting in October 1970 as a “qualified researcher” (a “postdoc” in the current terminology). But in the early 1970s, important developments in the academic world in general, and in the training program in educational sciences in Leuven in particular – developments that were in part a result of the 1968 political protest movements – interfered with my research plans and activities. Due to the increasing democratization of higher education, the number of students substantially increased. Also the training program in educational sciences was extended and differentiated: in addition to regular school education, special education and adult education were introduced as fields of study. These developments, together with the fact that Professor D’Espallier, head of the educational section of the Faculty of Psychology and Educational Sciences, became seriously ill and died, resulted in my having to leave the position of NFSR qualified researcher, and instead I was nominated in 1971 as lecturer and in 1972 as associate professor charged with teaching tasks. This certainly slowed down my development as a researcher. Moreover, in the 1970s educational research in Belgium was not strong, so I had few interlocutors in my own country; therefore I followed more carefully the situation abroad, initially in The Netherlands and thereafter in the USA, two countries where educational research was much more highly developed.

A collaboration of my Leuven colleague Roland Vandenberghe and myself with three colleagues from the University of Groningen resulted in 1972 in a textbook for students in educational sciences, focused on teaching and learning. It was titled *Beknopte didaxologie*, and due to its success in the training of students in educational sciences, especially in The Netherlands, the book was twice thoroughly revised (1974 and 1981) and has also been translated into German and French.

During the early 1970s the Leuven team of researchers in education slowly increased. This created the opportunity to initiate and develop intensive exchanges about learning and teaching during several joint workshops with the important research group of Prof. Carl van Parreren of the University of Utrecht who introduced Vygotskian psychology in The Netherlands and Flanders. Through the contacts with the Utrecht group, Vygotskian ideas had an impact on our perspective on learning, especially by stressing the importance of learning as a vehicle for development and the importance for learning of cultural and social factors.