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ABSTRACT

In this volume, the International Council on Education for Teaching (ICET) provides an updated review of current researcher-based teacher education concepts, activities, and experimentation as viewed from an international perspective. Keynote addresses, Plenary session addresses, World Assembly Communique and Recommendations, and abstracts of all papers are presented. Speakers were educators from around the world. The papers include: "Messages of Welcome from the 1992 World Assembly" (Federico Mayor and Sandra J. Klassen); opening keynote address: "Teacher Education in an Era of Global Change" (Aliu Babatunde Fafunwa); Host Keynote Address: "Teacher Education in an Era of Global Change" (Federico Mayor); and four plenary addresses on the main topics of the assembly: "The Democratization of Educational Systems and Teacher Education" (B.O. Ukeje); "The Professionalization and Status of Teacher Education and the Teaching Profession" (Colin N. Power); "The Impact and Role of Science and Technology on Educational Change" (Dean Nafziger); and "The Potential for International Cooperation and Partnerships in Education" (Paz G. Ramos). The publication also includes a summary of salient ideas, issues, and policy recommendations from the 1992 assembly and author indexes. (SM)

TEACHER EDUCATION IN AN ERA OF GLOBAL CHANGE

INTERNATIONAL YEARBOOK ON TEACHER EDUCATION 1992

International Council
on
Education for Teaching

International Council on Education for Teaching

The International Council on Education for Teaching (ICET) is an international association of educational organizations, institutions, and individuals dedicated to the improvement of teacher education and all forms of education and training related to national development.

ICET is incorporated in the United States as a nongovernmental organization (NGO), and has official consultative status with UNESCO. Membership in ICET is open to individuals, colleges, universities, government agencies, and private sector organizations who are engaged in educational and training activities.

ICET is governed by a Board of Directors and is provided with professional counsel by a Board of Trustees. Directors and Trustees are representative of the geographical, social, cultural, and professional diversity of the world. ICET activities are administered by an executive office located outside Washington, D.C., U.S.A., which facilitates the cooperative projects of its members.

ICET conducts an annual World Assembly as a forum for the worldwide educational community on matters related to national development and teacher education, and publishes a volume of proceedings, the International Yearbook on Teacher Education.

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Keynote Addresses, Plenary Session Addresses,
World Assembly Communique and
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presented at
The Thirty-Ninth World Assembly of
The International Council on Education
for Teaching

UNESCO Headquarters
Paris, France
July 20–24, 1992

CONTENTS

PART I

PART II

ACKNOWLEDGMENTS

ICET World Assemblies take place because of the voluntary professional efforts of numerous individuals and organizations. ICET is deeply indebted for their support in planning and conducting the 1992 World Assembly.

ICET is most grateful to UNESCO Director-General Federico Mayor for his and his staff's contribution of time, effort and goodwill, and for the use of UNESCO Headquarters as the World Assembly site; and to ICET President Aliu Babatunde Fafunwa and his staff at the Ministry of Education and Youth Development in the Federal Republic of Nigeria for their innumerable and varied contributions.

In addition, ICET thanks the members of the 1992 World Assembly Host Coordinating Committee at UNESCO, including Colin N. Power, Marco A. Dias, Evelyne N'Thepe, Jean-Francois Dujoux, Evelyn Hoyer, and, most especially, Maria-Dulce Borges, without whose effort the World Assembly would not have been possible.

Finally, special thanks are extended to ICET staff members J. Todd Segal and H. Colleen Wei for their personal and professional assistance in organizing the 1992 World Assembly.

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DEDICATION
to
FRANK HENRY KLASSEN

March 30, 1929 to January 23, 1992

A gifted educator who committed his life to
building educational bridges among the world's people.
He served with rare vision and selfless devotion.

It is altogether fitting that we dedicate this, ICET's 1992 *International Yearbook on Teacher Education*, to Dr. Frank Henry Klassen, ICET's indefatigable Executive Director for the last quarter century. He nursed the fledgling organization from its infancy to full maturity and placed it firmly within the international orbit.

Frank Klassen devoted his entire human and intellectual resources to the organization, sparing nothing, including his own health. Indeed, he was Mr. ICET himself. ICET's World Assemblies and their offspring, the International Yearbooks, are the embodiment of Dr. Klassen's vision of international cooperation and educational exchange. He believed that all participants in the education process must work together, and he spent his life developing programs that reached around the globe to unite individuals and nations in this mission.

Frank Klassen lived as a citizen of the world. His allegiance was to the human spirit, to humanity. He devoted 40 years of his life to international cooperation and educational development worldwide. He loved all cultures and all peoples. He nurtured ICET into the tool of his vision and gave voice to that vision through the World Assembly forums and their historical records, the Yearbooks.

Hence I feel sure all of you in receipt of this volume will join me in dedicating this work, like the World Assembly which preceded it, to ICET's Founding Father, Dr. Frank H. Klassen. In doing so, we are dedicating ourselves to carrying on Frank's legacy, and ICET's motto: "Teaching the World the Way of the Future."

ALIU BABATUNDE FAFUNWA
President
ICET

PREFACE

In this volume, the International Council on Education for Teaching (ICET) provides the reader with an up-to-date review of current research-based teacher education concepts, activities and experimentation viewed from an international perspective. The articles, abstracts and recommendations for the improvement of teacher education are the product of an ICET World Assembly, hosted by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in Paris in July 1992.

In creating this volume, ICET invited educators from Africa; Asia and the Pacific; Europe; the Middle East; North America; South America, Central America and the Caribbean to address the World Assembly Theme: Teacher Education in an Era of Global Change. Under this general rubric, educators were invited to deliver papers in a series of Concurrent Sessions on four World Assembly Topics:

Topic One
The Democratization of Educational Systems and Teacher Education;

Topic Two
The Professionalization and Status of Teacher Education and the Teaching Profession;

Topic Three
The Impact and Role of Science and Technology on Educational Change;

Topic Four
The Potential for International Cooperation and Partnerships in Education.

Eminent educators from Nigeria, Spain, Australia, the United States, and the Philippines were invited to address the World Assembly Theme and Topics in Keynote and Plenary Sessions. Their papers comprise PART I of this volume.

PART II of this volume begins with a World Assembly Communique, which gives a general overview of the issues discussed in Keynote, Plenary, and Concurrent Sessions at the 39th World Assembly. Many thanks are owed to Concurrent Session and Plenary Session Chairpersons and Rapporteurs who recorded and synthesized the salient ideas presented in Sessions and developed the policy and action recommendations that became the 1992 World Assembly Communique. Following the Communique, each World Assembly Topic is addressed by the abstracts of Concurrent Session academic papers which were presented on that topic.

The suggestions, ideas and findings produced by the scholars at the World Assembly are being disseminated worldwide in this volume and other publications and events that are the direct result of the 1992 World Assembly.

ICET expresses its deep gratitude to UNESCO for their assistance in the coordination of the World Assembly and the publication of this volume.

ALIU BABATUNDE FAFUNWA
President
ICET

INTRODUCTION

This volume is the result of a five-day World Assembly conducted by the International Council on Education for Teaching (ICET), and hosted by UNESCO at its Headquarters in Paris, France. ICET conducts a World Assembly annually, bringing together educators from around the world to discuss and debate issues in education related to research and practice. The 1992 World Assembly attracted almost 400 delegates from 87 different countries and every continent, and their findings comprise the content of this volume. Past World Assemblies have taken place in Nigeria (1991), Singapore (1990), Egypt (1989), Australia (1988), the Netherlands (1987), Jamaica (1986) and Canada (1985).

ICET's 40th World Assembly convened at UNESCO July 20–24, 1992 to open discussion on the World Assembly Theme, Teacher Education in an Era of Global Change. This comprehensive theme was divided into the following four subthemes: (1) The Democratization of Teacher Education and the Teaching Profession; (2) The Professionalization and Status of Teacher Education and the Teaching Profession; (3) The Impact and Role of Science and Technology on Educational Change; and (4) The Potential for International Cooperation and Partnerships in Education. ICET was honored to welcome two esteemed leaders in international education — Federico Mayor, Director-General of UNESCO, and Prof. Aliu Babatunde Fafunwa, ICET's President and Nigeria's Honorable Minister of Education and Youth Development — to present the Keynote Addresses on the Conference theme. The World Assembly's four Plenary Speakers — B.O. Ukeje, President of the Nigerian Academy of Education; Colin Power, UNESCO Assistant Director-General for Education; Dean Nafziger, Executive Director of the Far West Laboratory for Educational Research and Development in the United States; and Paz G. Ramos, Professor Emeritus, University of the Philippines — addressed their respective subthemes in the context of the larger theme of global change. The international dimension of the 1992 ICET World Assembly is reflected in these five Conference papers, which constitute Part I of this volume.

In his Opening Keynote Address, Aliu Babatunde Fafunwa emphasized that in this era of unprecedented social, economic and technological change, teachers must learn to train flexible, "permanent learners" who will be able to adapt to a future world that no one can predict. "You can't mold the young of today to fit into the tomorrow of a complex, fast-changing world," Fafunwa said. Federico Mayor's Host Keynote was an ideal complement to Prof. Fafunwa's speech, as Dr. Mayor stressed that although rapid social change has meant that teacher education will face a series of crises now and in the coming years, this reality presents "unparalleled challenge and opportunity" for teacher educators to create revolutionary methods for meeting those challenges and overcoming those crises. Mayor noted that it is easy to lament problems faced by teachers worldwide such as difficult work conditions, poor remuneration and — especially in developing countries — rapidly increasing enrollments, but it is wiser to "learn how to cope with [these problems] in creative ways."

Referring to education as "the greatest bulwark for democracy," B.O. Ukeje focused his World Assembly Topic One Address on the ways in which newly emerging democracies facing the specter of rapidly increasing enrollments can effectively prepare their teachers and schools to meet the needs of these looming challenges. Using Nigeria as a model, Professor Ukeje noted that with a carefully articulated plan of action and a recognition that "no educational system can rise above the quality of its teachers," developing countries can effectively cope with the daunting educational challenges they face.

Colin Power expanded on four major points in his Address on Topic Two: first, teacher-trainers must recognize that the recruitment and education of teachers will emerge as a central policy issue in the 1990s; second, teacher-trainers must challenge the negative assumptions about teachers to which too many administrators and policymakers have become attached; third, teacher-trainers must educate teachers who are adaptable to rapid changes in teaching methods and technology; and finally, teachers and teacher-educators must make an effort to contact UNESCO with suggestions on how the organization can better serve the teachers of the world.

In his Plenary Address on World Assembly Topic Three, Dean Nafziger urged teachers and teacher-educators to reexamine the way they approach science education, suggesting that instructors must learn to present science as a broad, flexible set of overarching principles rather than a static series of

unrelated facts. In the second part of his speech, Nafziger provided exciting insights into the ways in which computers, distance-learning technologies, networking technologies, and interactive multimedia are changing the face of education.

Paz Ramos's concluding Plenary Address, on Topic Four, provided World Assembly participants with a blueprint for nations to work together to improve their educational systems. Showcasing how collaboration among ASEAN nations achieved just such an end, Professor Ramos encouraged ministries of education to be open to the idea of international cooperation and standardization. Only with their blessing, she said, can such cooperation be realized.

Abstracts of all papers on the four World Assembly Topics comprise the major portion of Part II of this work. For each topic, paper abstracts are arranged alphabetically according to the last name of the first author listed.

The World Assembly provides a forum for the collaborative analysis from an international perspective of key issues confronting all of those involved in the preparation of educational personnel. This volume shares with the reader the results of this forum and the implications for teacher education worldwide. It comprises a unique source of expertise and reflects the effort of many different authors, all of whose work is gratefully acknowledged.

Through the 1992 *International Yearbook on Teacher Education*, ICET continues to serve as the global voice of the teacher education community.

SANDRA J. KLASSEN
Executive Director
ICET

PART I

KEYNOTE AND PLENARY ADDRESSES

MESSAGES OF WELCOME FROM THE 1992 WORLD ASSEMBLY

On behalf of UNESCO, I have pleasure in welcoming you to this 39th World Assembly of the International Council on Education for Teaching (ICET).

Cooperation between ICET and UNESCO is already almost 30 years old. It began immediately following the establishment of ICET in 1963, with the joint production of a school manual on "Health Education in Primary, Secondary and Teacher Training Establishments." As ICET has developed and acquired international recognition, our cooperation has expanded accordingly. Among the studies to which it has given rise, I would mention the "Survey of the Training of Teacher Trainers in Asia, and North and South America," "Secondary Teacher Training in Middle Africa," "Innovative Practices in Teacher Education in Asia, and North and South America," "Paraprofessional Teacher Training in Peru and the U.S.," and "The Training of Teacher Educators in Europe."

The link between our two organizations has also involved attendance at each other's meetings and conferences on themes of common interest. I myself had the pleasure of participating in the 38th World Assembly of ICET held in Lagos, Nigeria, on the topic: "Education for All: The Challenge for Teacher Education." It was on this occasion, in the course of deliberations of great relevance to UNESCO's programme, that I invited ICET to hold its 39th World Assembly at UNESCO Headquarters.

I would not wish to conclude these remarks without paying a special tribute to the late Dr. Frank Klassen. Dr. Klassen became the Executive Director of ICET in 1968, and it was largely due to his dynamism, competence and dedication that ICET has attained its present status. I would like to extend this tribute to Mrs. Sandra Klassen. Following her husband's untimely death, she has taken on with great selflessness and dignity the heavy responsibilities of Executive Director. Without her courage and determination, this 39th World Assembly of ICET might not have taken place as scheduled.

Let me finally thank you all for honoring us with your presence at this Assembly. I am sure that the quality of the participation will ensure a most fruitful and rewarding meeting.

FEDERICO MAYOR
Director-General
UNESCO

On behalf of the Boards of Directors and Trustees of the International Council on Education for Teaching (ICET), I welcome you to this 39th World Assembly, being held in Paris, France, at UNESCO Headquarters on July 20—24, 1992.

This year's World Assembly will focus on the impact that rapidly changing social and technological events have had on education and the role of the teacher in meeting the challenges of the future. Of course, the past fifty years have seen enormous changes in our global society, but they are in some respects dwarfed by the sudden upheavals of liberation and democratization that have swept across the earth in the past two years, forging new political patterns and alliances.

You, the leading education practitioners, scholars, administrators, government officials, private sector representatives and policymakers from around the world have come to this 39th World Assembly to examine together the theme "Teacher Education in an Era of Global Change," to explore the challenges to education, to exchange information and ideas, and to set agendas for making teacher education more responsive to this brave new world and to the continuing professional growth and development of teachers themselves.

This era will provide all those interested in improving the quality of higher education and teacher education around the world with splendid opportunities for cooperative efforts. ICET's worldwide network of scholars, institutions and practitioners plan to make a substantial contribution to shaping a brighter future for all youth and adults through education. By investing an important part of your professional career in this exercise in international cooperation, you are joining ICET in shaping this future.

Finally, I greet you and celebrate this mutual enterprise in the name of Dr. Frank H. Klassen, my beloved husband and colleague, and the leader of ICET and moving force behind this World Assembly and its predecessors for the last quarter century.

SANDRA J. KLASSEN
Executive Director
ICET

Opening Keynote Address, World Assembly Theme

TEACHER EDUCATION IN AN ERA OF GLOBAL CHANGE

Aliu Babatunde Fafunwa
Honourable Minister of Education and Youth Development
Federal Republic of Nigeria

It is my honour and privilege to address this 39th ICET World Assembly on the problems and issues about preparing and nurturing current and future teachers in this critical period of global change. Science fictions based on actual or exaggerated technological achievements tend to warn all of us, irrespective of where we live in today's world, of expected shocks, that is, to say that the only permanent thing in life is change itself.

The Crisis of Our Time

We now live in a time in which change is a major force affecting all aspects of our lives. The world of today as well as our world of the future demands a new and improved kind of education to meet challenging needs and problems not presently in existence even a few years ago. A diagnosis of our times indicates that we live in a situation of optimism and pessimism and of hope and despair. In other words, we have moved from a phase of growth and clearly defined goals to one of uncertainty.

We have become entangled in problems that are growing more and more intricate and intractable by the day. All governments are engaged in restrictive macroeconomic policies in an attempt to curb the extremely high rates of inflation and to reduce the deficit in the balance of payments which keep budgets in the red. This effort involves sharp reduction in welfare expenditures in some states, which in turn affects employment and causes a decline in all fields of activities. In these circumstances, social tensions tend to grow worse; and so, schools and colleges as well as tertiary educational institutions are called upon to supply better and more aggressive knowledge to overcome the impasse of zero-growth caused by economic problems globally.

At the same time, however, the resources for education as well as for research and development are severely curtailed. In fact, they come first on the list of budget items to be eliminated; and, paradoxically enough, the decision is made by university professors and well-educated people in their capacity as prime-ministers or finance ministers. Moreover, as we have to think about the foreseeable future, we must see to it that present day decisions are compatible with our projections.

The experience of the recent past is not encouraging in this respect. Some twenty years ago, when the economy was flourishing, people were deeply concerned that growth might be hampered by the lack of sophisticated human resources. We kept demanding more technicians, more research workers, more teachers. Today, however, we are confronted with widespread unemployment in the very sectors of qualified manpower which we had wanted to be so plentiful. Furthermore, since economic resources, as is well known, are limited and the mechanisms for quality assessment are growing increasingly jammed, the loss of income is felt more by those who are more productive. Hence, increasingly dangerous feelings of frustration are generated — worst of all, the feeling of not being properly appreciated.

Many among our distinguished professors and teachers are anguished by this condition, and the statement by a famous economist and Nobel Prize winner that teacher's income is bound to dwindle at least until the 1990s is certainly of no solace to them. Some relief, for what it is worth, may come from the lesson of history, which shows that even during the splendid Italian Renaissance period, a university lecturer in Pavia earned less than a skilled labourer.

On the occasion of the World Conference on Education For All at Jomtien, Thailand, the global changes that attracted most attention were those pertaining to human survival in its rudimentary and

basic forms. They include (a) the threat of economic stagnation and decline that is best illustrated by fallen per capita Gross Domestic Product (GDP) in Sub-Saharan Africa and Latin America, and growing unemployment rates in the industrialized economies of Europe; (b) widening economic disparities among and within nations; (c) marginalized populations arising from the fact that millions of people are dislocated and suffering from war, civil strife, and crime; (d) widespread environmental degradation; and (e) rapid population growth.

Most developing countries are already aware of these challenges and are responding positively to them. Their drive for survival is characterized by (a) the renewed determination for combating poverty, malnutrition, disease, socioeconomic marginalization and drugs, (b) pursuit of gender justice, equality, and guaranteeing a better quality of life for all, and (c) the quest for arresting a growing foreign debt, an unfavourable trade balance, and a deterioration of the environment.

The rapidly changing social and technological events of our times that constitute the pursuit of higher life goals beyond mere survival are of two forms. One is the focus of liberation and democratization that emerged first in the postcolonial period and is currently sweeping across the world. New political patterns and alliances are being forged, as is notably demonstrated by the events in Southern Africa, Eastern Europe (including notably the areas of the former Soviet Union), the European Community, and regional groups in Africa, Asia, and Latin America. A second strand of the transcendental events is symbolic of the advances in science and technology resulting in knowledge explosion, shrinking communication, and the rapid renewal of technological devices.

What challenges do both survival and higher life goals pose for education? The answer, it seems to me, underscores the prescription by the President of the Republic of Columbia, Mr. Virgilio Barco, who in his address to the plenary meeting of the sixth Regional Conference of Ministers of Education and those responsible for Economic Planning of Member States in Latin America and the Caribbean organized by UNESCO with the cooperation of ECLAC Bogota, 30 March to 4 April, 1987, declared that

> *The meeting is taking place at a time when we have not fully succeeded in overcoming the severest economic crises since the 1930s, a crisis that has struck at both the industrialized and the developing countries has also threatened the very values and concepts on which our institutions are founded.*[1]

His prescriptions were (a) a greater rigour for the study of the measures to be adopted to overcome the problems; (b) greater political resolve to commit the best of our assets in a global strategy; (c) restructuring our economies and redefining our values; (d) reactivating the processes of production and employment generation; and (e) opening up new paths to the participation of all in the building of a more just, equitable and mutually supportive society.

In addition to the socioeconomic, political and cultural restructuring and redefinition, there is a special role for the Education Sector, to wit

> *It is the responsibility of the education system to train new citizens, men and women prepared to face up with courage and decisiveness to this task of survival and self-transcendence.*[2]

I dare say that preparing for the twenty-first century is not like building a house where you can draw a blueprint and stick to it. You can't mold the young of today to fit into the tomorrow of a complex fast-changing world. You simply cannot see, in a final way, the frontiers of the future and programme people with the necessary knowledge, skills, values, and attitudes necessary and sufficient to deal with it. You cannot meet a dynamic situation with static mentality and concepts.

Preparing for the twenty-first century must be based on the growth of the young in a way where they can dynamically and as much as possible, deal with the unknown and unknowable at a certain stage and adjust themselves to acquire what is necessary.[3]

Our world of today as well as our world of the future demands a new and improved kind of education to meet challenging needs and problems not in existence even a few short years ago. Hence, it is incumbent on those of us who comprise the education professions in cooperation with other interested and concerned individuals and groups, to undertake the task of developing new and improved programmes for the preparation of those who serve in our schools as teachers, administrators, and educational specialists.

Democratization of Education Systems and of Teacher Education

The International Council on Education for Teaching has as its primary objective the improvement of the quality of the teaching profession. Thus, it is quite appropriate that this Thirty-ninth World Assembly here in Paris, France gives special attention to the development of a design for the reform and democratization of teacher education and for the creation of new and/or improved programmes for the preparation of individuals for the education professions. I use the term education professions advisedly and interchangeably with teacher education to suggest that the achievement of quality in our schools rests not only with what we must view as our primary resource, namely, the teachers, but also with those who provide leadership and service through specialized tasks; i.e., principals, supervisors, psychologists, curriculum developers, and others.[4]

Preparing teachers will require closer relationships between university and school and the promotion of research and development in all areas with special reference to the use of technology for continued feedback. Under the circumstances, the changing role of the teacher will affect the allocation and budgeting of his time in the direction of giving less time to lecturing and presenting information and more time to instructional management with special reference to group discussion as well as counselling and guidance to include all the possibilities for individual needs, interests, and differences.

The shift from the traditional role of the teacher has implications with respect to selection and preparation of young people heading for the teaching profession. The role of an instructional manager working alone or with a team directing students' learning in group of individualized settings, is not as clear and concrete as the traditional one. While relative lack of structure gives some teachers the opportunity to be more creative in introducing new ideas and techniques, it is known that less secure teachers need more direction.

Every change in concept, goal, societal needs, resources and capabilities brings change in curriculum, organization and teacher education. Some basic considerations, in preparing for the twenty-first century, call for action along the following lines:

1. Government and the community taking a formal leading role in developing a new image for teachers and educators, and counteracting the existing and growing trend toward a lowering of status. The teaching profession must enjoy parity of esteem with other professions, e.g., law, medicine, engineering, etc.

2. The screening and recruiting of good students to join the profession, on the basis of their abilities and potentialities, and not only on their grade point averages, or need for jobs must be stressed.

3. Making the best education available to colleges of education with special reference to teaching staff, organization, buildings, equipment, and above all, clear concepts and philosophy.

4. Developing teacher education programmes to include:
   - achievement motivation;
   - individualized learning and social interaction;
   - counselling and career guidance in light of expected challenges to emotional stability of man and society);
   - a system for activating and updating concepts and programmes; and
   - inculcation of flexible approach to education problems.

For teacher education to be fruitful, it should include creativity, dynamism, open-mindedness and the qualities of an interactive, reliable and responsible human being with faith in his heart based on his moral commitments (without impositions from outside), emotional stability, and an interest in others as well as concern for their affairs. With the declining role of the traditional teacher in teaching the acquisition of subject matter and facts, the education of teachers must stress the concepts and skills of leadership and management.

With more technology, the twenty-first century will bring more leisure to individuals and institutions. Teacher education will pay more attention to the concept of time and how to manage it. Time allocated for reflection and to programmes for recreation is basic for any further progress and a meaningful worthy life. Progress in medical sciences, for example, has enabled man to improve life expectancy and prolong life span. Genetic engineering promises great accomplishments.

During the 1970s, it was generally accepted throughout the world educational community that many conventional arrangements and practices were indeed obsolete and inefficient and required substantial change. Until then, a person's education was measured by years of classroom exposure and by the type and level of educational credentials earned. This institution and age-bound concept of education implied three things that did not reflect everyday experience: (a) that schools, and only schools, could meet all of the essential learning needs of individuals; (b) that this could be accomplished, once and for all, during an individual's school-age years; (c) that anyone who lacked proper schooling was ipso facto uneducated. It was Thorea, the American nature poet, who said that his education was interrupted by his schooling!

A broader view emerged which recognized that education occurred whenever, wherever and however learning took place. This enlarged concept of education in no way lessened the importance of formal education systems; it simply reflected a belated recognition that formal schools and higher institutions, though well-suited to meeting certain types of important learning needs, could not be expected to meet the full spectrum of lifetime learning needs of all age groups in the population. People will increasingly exercise their own individual interests and priorities in adapting to their social situation, work, study and leisure activities.

The nature of education is being further altered by the pressures arising from technological developments. In the past, following a technological revolution, a stable period allowed educators to develop their methods of preparing employees for industry. In many cases, following a period of education, a person could be trained to practice a profession for a lifetime. Any changes within trades were sufficiently slow to enable people to pick up the required knowledge while on the job. Skills were appropriate educational goals. Today the fast changes do not permit such a luxury. Educationalists now face a dynamic, rather than a static problem. Contemporary technological developments not only bring about abrupt changes within the trades, but they also break the traditional borderlines between them. This situation forces us to reconsider the old and accepted approach of skill-based preparation of manpower for industry.

What should be considered is a different approach in which we recognize that specific knowledge will need to be gained continuously. *An essential part of the educational system is, therefore, the preparation of its graduates not only for their role as professionals within industry but also as permanent learners.* Courses must not only transmit the requisite knowledge, but they must also incorporate the educational building blocks that enable us to continuously learn and upgrade our knowledge and abilities. The tendency towards more individual control and choice must be encouraged. This flexibility is given increased importance by the coming shift in employment opportunities from the manufacturing to the service sectors.

Democratization of Education Through Technology

The prevailing problems of education in developing countries comprise a high rate of illiteracy among the adult population, an increase in school enrollment as a result of growing public demand for education, increasing numbers of school leavers who cannot be absorbed into the monetary economy, shortage of qualified and experienced manpower, shortage of finance, shortage of qualified teachers and trainers, and so on.

The situation calls for the following measures:

i. new methods and modern techniques that would enable the existing resources to serve much larger audiences;

ii. upgrading and retraining teachers and other workers without removing them from their places of work for long periods;

iii. to use maximally and efficiently the space and equipment available, and thus to share more widely the facilities, expertise and materials.

The recommended solution has been distance teaching through the use of mass media — newspapers, pamphlets, magazines, books, radio, television, films, correspondence courses, etc.

Distance teaching institutions and arrangements are assuming greater significance in developing countries in Africa, Asia, etc.

Development, Education and Teacher Education is an instrument for social change while the quality of the education provided is dependent upon the quality of the teaching personnel and support for the teacher's role.

Some recent developments as a result of changing circumstances include

a. Promotion of European awareness through education is vital to the development of an integrated European Community. Because of this, teacher education participation is focused under one programme of the ERASMUS Bureau and its Inter-University Cooperation.[5]

b. Quality changes in British teacher education were addressed in the aftermath of the 1988 Education Reform Act. Rigorous national accreditation structures, an all-graduate teacher population, and in-service education of teachers are featured.[6]

c. The 5-year rural elementary teacher education programme at the University of Victoria, British Columbia, Canada, features extended field experience in remote rural schools and communities. The programme seeks to provide pre-service elementary teachers with a realistic awareness of the rural teacher's work life.[7]

d. The evidences by the review of related literature as well as empiricism were marshalled for arguing the feasibility of increasing teacher roles by motivating the teacher to participate more in the production and assessment of educational materials and teaching aids, the planning and development of curriculum, school buildings and furniture, and evaluation of technical innovation and new techniques. There is a recommendation for "Organization Development (OD) in schools: A proposal for Nigeria 1990 – 2010."[8]

e. Federal Republic of Nigeria Mass Literacy Delivery System.[9]

The Federal Government of Nigeria strongly and unequivocally endorses the Jomtien Declaration on *Education for All by the Year 2000,* and has resolved to tackle the nation's educational shortcomings, particularly the mass literacy education scheme, with all its resources and ingenuity. To achieve a literate and numerate society in Nigeria by the year 2000, the conventional and orthodox approaches are most unlikely to help Nigeria; hence a new approach has become imperative and more than a desideratum.

To this end, the National Commission for Mass Literacy, Adult and Non-Formal Education has adopted the Policy of **Each One Teach One or Fund the Teaching of One**. The policy is anchored on the belief that most literate Nigerians today owe their opportunity to be educated to the sacrifices of their illiterate parents, relatives and guardians who paid for their schooling, and that it is, therefore, the duty of such educated Nigerians to pay back these parents, relations and benefactors by making at least one of them *functionally literate and numerate* by teaching them *or* by paying someone to teach them.

Under the policy of **Each One Teach One or Fund the Teaching of One**, the Nigerian Government and people do not need to build new classrooms as churches, mosques, club houses, existing school classrooms, factory floors, village squares, individual anterooms, living rooms, compounds, garages, etc., will serve the purpose of teaching these illiterate adults to read and write and to become functionally literate by the year 2000.

However, the Nigerian government plans to provide, as inexpensively as possible, reading and writing materials that will assist these adults to achieve functional literacy and numeracy.

New primers for reading will have to be developed that will interest the adults and promote their livelihood.

Media houses are to be encouraged to publish at least a page of literacy materials in their tabloids, at least a page, on a regular daily basis on matters of political interest to these urban and rural adult illiterate dwellers.

The Commission's targets include illiterate mothers, fathers, uncles, aunties, nephews, nieces, street children, market women, traders, street workers, motor-mechanics, bicycle repairers, all other types of workmen and labourers, the handicapped, the nomads, fishermen and all other groups of illiterate individuals in society.

The volunteer/paid teachers also include civil servants, primary/secondary school teachers and their literate pupils, as well as tertiary/higher education students and their lecturers, professors, administrators and literate workers. They include as well all other literate Nigerians who can read and write effectively in any of the Nigerian mother-tongue languages whether they are self-employed, or in the private sector.

"Schooling" for these adult illiterates will be during any time of the day mutually found to be convenient for these adult learners and their volunteer/paid teachers wherever they may be in the Federal Republic of Nigeria. Such "schooling" would be under a relaxed atmosphere whether during the dull market periods for the market women, or after a hard day's work in any given situation, or possibly in the evening after dinner.

It could also be before, during or after the traditional age and society meetings.

Such "schooling could also take place in the market squares, shops, kiosks during dull market periods in the day or during existing monthly Sanitation days aimed at keeping our environments clean and safe for living, after which lessons in healthy living are conducted.

The strategy of each **One Teach One or Fund the Teaching of One (EOTO/FTO)** will seek the support of all Government and NonGovernment Organizations (GOs/NGOs), Voluntary Agencies (VAs) Religious Bodies (RBs), Cooperative Societies (CSs), Organized Clubs (OCs), Age Group Societies (AGs) and similar organizations through which their individual literate members volunteer to teach their illiterate members as volunteer or paid teachers or cooperate in funding the teaching of one or as many of them as possible. Such individuals or groups in the rural and urban areas of the country could also assist as individuals or as groups to teach small/medium classes of illiterate compatriots or fund the teaching of such classes wherever they may be in the existing 589 Local Areas of Nigeria's present 30 States and the AbuJa Federal Capital Territory.

The University Departments of Education and Adult Education including the Colleges of Education, the Polytechnics, the Technical Colleges as well as the primary and secondary school teachers and their mature students are to be mobilized and involved in the operational modalities for implementing the strategy of Each One Teach One (EOTO) or Fund the Teaching of One (FTO) in all its ramifications, e.g., in preparing literacy materials and kits and in the actual teaching of one or funding the teaching of one or as many as possible.

In some parts of Africa parents need the help of their children on the farm or the market place. Consequently a sizeable number of our children go to the farm instead. Perhaps we educators in Africa have waited for too long expecting the parents to bring their children to us. We now have to go to them to strike a deal: You can have your child on Monday, Tuesday, and Wednesday and we will have him or her in school on Thursday, Friday, and Saturday. The child will have Sunday to him or herself!

Conclusion

The rapidly changing social and technological events in our globe, the EARTH, are also global in perspectives. To a greater or lesser extent, all countries of the world are experiencing economic recessions, the forging of new political alliances and the impact of the advances in science and technology.

The challenges these survival and transcendence tasks pose to mankind are for restructuring, reactivating the socioeconomic, political, and cultural values and arrangements, with the committal of the most cherished of our human and material resources, not the least of which is the development of human resource capital through education.

Teacher education is crucial to these restructuring, renewal or reactivating processes, and for this reason, the global perspective for resolution of issues must not be lost sight of in our search for solutions. World issues of recruitment, content, governance, research, professionalism, teacher educators, inservice education, the development of an indigenous system are included in it.

The global challenges posed by the rapid social and technological changes for development, education, and teacher education will require mobilization of resources within and across nations. The strategies to be employed include research, development, implementation with dissemination of knowledge, information and responses through practical projects. Success in such undertakings has been recorded globally, but much remains to be done. The 39th ICET World Assembly provides a special opportunity for participants to share their findings with one another for the common purpose of improving the quality of education personnel. One thing is certain: You cannot use yesterday's tools for today's job and expect to be in business tomorrow.

Endnotes

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Host Keynote Address, World Assembly Theme

TEACHER EDUCATION IN AN ERA OF GLOBAL CHANGE

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I am very pleased to have the opportunity to speak to this 39th World Assembly of ICET. In hosting this meeting, UNESCO wishes to underline the significance it attaches to teacher education and its concern for the problems faced by teachers in the performance of their vital work. This assembly, bringing together so many important figures from the world of education, should serve to highlight some of these problems and their political, economic, social and professional dimensions, which are all too often misunderstood or neglected by decisionmakers and by the public at large. It should, in particular, provide a valuable occasion to focus on the essential role of teachers in the era of global change in which we live.

It would be difficult to overemphasize the importance of education in today's world. It is the key to addressing some of the major problems confronting our societies at the present time. Challenges such as the promotion of peace, sustainable development, preservation of the ecosystem, population reduction, disease prevention and respect for human rights are intimately linked to the full exercise of the right to education. Through its Education for All programme (including its work on literacy), UNESCO is actively engaged in the promotion of this right worldwide, in association with its United Nations partners (UNDP, the World Bank and UNICEF), with governments and with the community of concerned nongovernment organizations (NGOS).

In quantitative terms, the last two decades have seen a very significant expansion of formal education throughout the world. Gross and net enrollment rates have increased in most countries where scope for expansion existed, particularly in the developing countries. Some groups have notoriously failed to benefit from this expansion, and there are still over 100 million young people between the ages of 6 and 11 — a majority of them girls — who remain without schooling. Nevertheless, the latter part of the century has witnessed a vast movement toward the democratization of educational opportunity at the global level. One important practical outcome of this worldwide trend has undoubtedly been the reduction in rates of illiteracy and, in the last few years, an actual reduction in the absolute number of illiterates.

Yet this quantitative progress in the provision of education has not always been matched by improvements in educational **quality.** Economic difficulties in many countries — notably the developing ones — have meant that public expenditure on education has not kept pace with educational expansion and provision has not always been adequate to needs. Again, the reform of curricula has in many cases been overtaken by evolving social realities and changing enrollment patterns. At the same time, the learning environment outside school has changed, and young people have increasingly turned to the media — more attuned to the shifting complexities Of our time — to understand and learn about the world. The growth of alternative sources of learning — frequently linked to alternative value systems — has served to reinforce the problem of educational quality.

Teachers, as we all know, are crucial determinants of educational quality. As important as the subject-matter of education may be, what most people take away from their schooling is not so much the content of what was learned as the influence of one or more teachers. It was the stamp **they** gave to the content that proved memorable. Improvements in the quality of education and learning are crucially dependent on the inputs of teachers, whose quality is to be measured not only in terms of their academic

and professional training but also in their motivation and dedication. Issues of teacher quality — linked to the complex questions of teacher preparation and recruitment — will certainly be in the forefront of the educational debate in the 1990s and beyond.

Sadly, the present educational context can scarcely be said to be conducive to educational quality. Recent years have seen a marked deterioration in the material, social, professional and psychological conditions in which teachers have had to work. The value of teachers' salaries has declined almost everywhere and particularly dramatically in the countries of Africa and Latin America where some teachers are paid less than semiskilled workers. At the same time, working conditions have deteriorated in many countries as a result of overcrowded classes and chronic shortages of textbooks and basic learning materials. In addition, there has been a widespread erosion of the whole infrastructure of educational support services — school inspection and supervision, in-service teacher education, curriculum development, school health services, and maintenance of school furniture, equipment and physical facilities. In these circumstances, it is hardly surprising that the morale of teachers should have been undermined to the detriment of educational quality.

There is something highly paradoxical about this deterioration in teachers' working conditions. For there is a growing and universal recognition of the central role of education in human resource development and of the fact that in our postindustrial age such development — and the expertise and creativity it represents — constitutes the key to economic and social progress. A concern with educational quality is also evident in the frequent public criticism of the perceived shortcomings of educational outcomes.

However, such criticism is too often turned against teachers without due regard to their difficult conditions of work, their generally poor remuneration and the challenges posed by the overall social context. The teaching profession is all too often made the scapegoat for more deeply rooted problems and inadequacies.

In the case of the developing countries, the frustrations that give rise to such criticisms are understandable. Most of these countries do not have the financial or human resources to make the investments required to ensure a quality education for all. Structural adjustment policies that take insufficient account of the long-term need for educational investment to break out of the vicious circle of poverty and dependency exacerbate these frustrations. It must, of course, be recognized that the educational profession is not immune to a conservative and corporatist spirit inimical to change and thus to educational quality. Characteristically, however, teachers embody a very deep fund of idealism and commitment, and it is in the interest of all concerned that this should be fully tapped and appropriately rewarded.

This is the essential purpose of the **Recommendation concerning the Status of Teachers,** adopted in 1966, which UNESCO implements jointly with the International Labour organization. The recommendation reflects the conviction that certain norms should govern the working conditions of teachers irrespective of differences in educational legislation, systems and practices. It is likewise based on the premise that the state of education depends on the status of teachers; educational quality cannot be expected unless teachers enjoy the public consideration and support they deserve. The recommendation is thus not simply concerned with teachers but also with optimizing the performance of educational systems. Its ultimate aim is that pupils shall learn and shall learn to learn for their self-realization and the benefit of society as a whole.

The challenge of educating a teacher is evidently an enormous one. For teaching calls not for one specific skill in a given area, but for an immensely wide range of knowledge, skills, attitudes, behaviors and values. The challenge is the greater in that many teachers, especially in the developing countries, are entering teaching careers possessing less than a secondary education. It is tempting to deplore this situation, but since it is a reality in those parts of the world where education is growing most rapidly we will have to learn how to cope with it in creative ways. Indeed, what is a crisis for education is an unparalleled challenge and opportunity for teacher educators such as yourselves. It is to you we are turning for innovative and imaginative solutions in a whole variety of different contexts. How, for example, can we design short but still effective pre-service training programmes and back them up with effective in-service training? How can we use the modern media to overcome the limitations which distance poses to programmes of in-service training? How can we build general education programmes for teachers, ex-

tending over their working lives, which enable them to compensate for the deficiencies of their own education? How can we make lifelong education not an idea teachers recite, but an essential part of the way they live? These are only some of the questions to which teacher educators must find solutions if Education for all is to be not a slogan but a reality.

ICET has an important role in exploring and highlighting all these issues. UNESCO, for its part, is concerned to associate itself with your efforts. Teachers need advocates for their cause — people and organizations ready to espouse their concerns and extol their virtues. With this in mind, UNESCO has undertaken a study on the establishment of an **International Teachers' Day** and **UNESCO Teachers' Awards**. In the coming weeks we shall be consulting widely with member states, NGOs and foundations to fix the date of the **Teachers' Day** and to ensure that it has an appropriate impact. As regards the **Awards,** the plan is to make them both at the national level in the form of certificates and bronze and silver medals and at the international level in the form of a gold medal and two honourable mentions. ICET will doubtless wish to be involved with other relevant NGOs in these undertakings.

You will certainly have heard of the UNITWIN Programme recently launched by UNESCO to promote twinning, networking and other linking arrangements among universities throughout the world with the aim of furthering the rapid transfer of knowledge. One of its main components is the UNESCO Chairs scheme designed to provide postgraduate students in the developing countries with enhanced opportunities for advanced training and research at local centers of excellence in key disciplines relating to sustainable development. We are currently considering the extension of this programme to institutions of higher education specialized in teacher training. Two other activities under way in the education sector could provide a basis for such an undertaking. The first concerns the ***World Directory of Teacher-Training Institutions*** and the second, a project whose first phase involves the evaluation of teacher-training institutions in French-speaking Africa.

The World Directory of Teacher-Training Institutions, to be published before the end of the year in a trilingual version, is the result of several years' close co-operation between ICET and UNESCO. It is intended to meet the many demands from institutions, researchers, experts and students for a guide providing an overall view, country by country, of teacher-training opportunities throughout the world. The directory — the first publication of its kind and presented in project form at this assembly — will cover 173 countries and give detailed information on institutions in over 100 countries. I take this opportunity to invite all participants to acquaint themselves with this project and the associated data base at the stand located outside Room I and to indicate any additions or corrections that need to be made concerning the institutions with which they are familiar. The directory will be published when such final adjustments have been made.

A further UNESCO activity of potential interest to participants at this meeting is the establishment — twenty years after the Faure Commission produced its seminal report **Learning To Be** — of the International Commission on Education and Learning for the 21st Century, to be chaired by Mr. Jacques Delors. Adaptation of the curriculum to the changing needs of our time — to emerging global trends, to the imperatives of sustainable and environmentally sound development, to new developments in the sciences, to the requirements of multiculturality and democratic life — is an important condition of educational quality, and we are counting on the close interest and support of teachers' organizations in this major initiative.

Education has suffered, with many other sectors, from the economic problems of the late eighties and early nineties. However, let it never be forgotten that for all countries education will inevitably be the key to renewed development, which will have to be based on a new conception of our place in nature and an enhanced sense of solidarity with our fellow human beings. Knowledge and the capacity for knowledge creation will be the supreme assets for the promotion of sustainable development at the dawn of the new millennium. If the tragic and dangerous gap between the affluent and the impoverished nations is not to widen, it will be essential for international cooperation to ensure that investment in education is maintained worldwide and that access to appropriate knowledge is guaranteed to countries with serious deficits in this regard.

For economic growth, the development of endogenous capacity is essential; for moderating population increase, education is the key; for stemming or reducing the flow of talent from developing to indus-

trialized countries, the transfer of knowledge is absolutely necessary. Teachers are therefore a crucial component, a cornerstone of the peace-building process whose importance has recently been underlined by the United Nations Secretary-General, Mr. Boutros Boutros-Ghali, in his **Agenda for Peace**. But peace-building requires peace dividends to trigger and sustain the efforts of peoples and their governments in a very rapidly evolving world. At a time when the ending of the Cold War and the arms race, the reaffirmation of freedom, human rights and democracy in many parts of the world, and a renewed commitment to international co-operation through the United Nations system has opened up real opportunities for ensuring that human development is placed at the top of national and global agendas, I know that we can rely on teachers — appropriately trained and rewarded — and their organizations to be in the forefront of efforts to ensure that the advent of a new century will mark the transition from a culture of war to a genuine culture of peace.

Plenary Address, World Assembly Topic One

THE DEMOCRATIZATION OF EDUCATIONAL SYSTEMS AND TEACHER EDUCATION

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Within the second half of the decade of the 1980s, the world witnessed an unprecedented, unenvisaged and inconceivable avalanche of political democratization which reached its crescendo in the breakdown of the great Berlin Wall and subsequently the collapse of Communism and the super power Soviet Union.

Perhaps the genesis of the global transformation can be traced to the political revolution in Poland during the second half of the 1980s. The development led to the emergence of a government by Solidarity, a noncommunist trade union championed by Lech Walesa. The democratic revolution in Poland resulted in the sweeping away of the communist system, and this assumed a bandwagon effect throughout Eastern Europe. This democratization process and popular revolution which swept through Eastern Europe reached its crescendo with the breakdown of the Berlin Wall on 9 November 1989; and this eventually led to the unification of the two Germanys into a democratic state.

Perhaps what also gave impetus to the democratization process in Eastern Europe was the emergence of President Mikhail Gorbachev and introduction of the twin policies of *glasnost* (openess in political discourse) and *perestroika* (restructuring of the economy). The policies led to the recognition of the rights of each of the satellite states to determine its own political destiny; eventually, to the collapse of the Soviet Union and the emergence of independent states; the democratization of the erstwhile Baltic Satellite states of Latvia, Estonia and Lithuania; and eventually, to the emergence of the Commonwealth of Independent States (CIS).

William H. McNeill (1990) summarized the central and catalytic role of Mikhail Gorbachev in the creation of a "New World Order" by stating that "200 years after the French Revolution, Mikhail Gorbachev has initiated changes that may well turn out to be comparably important, even though they have not yet provoked much revolutionary violence." Perhaps this was too early an assessment because much violence subsequently followed the changes.

Be that as it may, the democratization process has actually assumed a global revolution because the tide of change is sweeping the world, not only in the once monolithic communist regions but also in Latin America, Asia, Africa and even South Africa. In this regard, Stanley Hoffmann (1990) has opined that we are now entering a new phase of history — a new World Order. And Dankwart A. Rustow (1990) has viewed democracy as a global revolution of the present era.

Although the prodemocracy movement apparently failed in China, it has given impetus to an unprecedented global cooperation resulting in an ad hoc World Assembly recently in Brazil to discuss not war or threat of war but a common problem of environmental degradation threatening human existence. Indeed the world has moved from decades of Cold War to the vision of a New World Order. The nature and scope of the New World Order is yet to be fully evolved and understood, yet it is quite clear that its full realization and sustenance could be a mirage without the global democratization of the educational systems of the world, and particularly teacher education.

What is Democracy?

Because democracy means different things to different people, it may be relevant at this juncture to articulate what we mean by democracy in order to understand and appreciate our concept of democratization. Indeed, even totalitarian regimes and tyrants have often described their structures and processes as democratic.

To us, the definition of political democracy by Benjamin Franklin as "the government of the people, by the people, and for the people" is yet the simplest but most appropriate and relevant. However, the Encyclopedia Americana defines democracy as "a form of government in which the major decisions of government — or the direction of policy behind the decision — rest directly or indirectly on the freely given consent of a majority of the adults governed."

No ideal democracy exists. So democracy as a political process is a matter of degree, depending on the area of life within the bounds of political experience. In the modern sense, democracy signifies that ultimate authority in political affairs rightly belongs to the people. It implies majority rule and minority rights. In this regard, the majority could do everything except deprive minorities of the basic freedoms of speech, press, assembly, rights to fair trial, etc. And the minorities might do everything within the context of these human rights to present their case. None of the basic rights can be limitless. For instance, the rights of individual freedom of expression may clash with the government's responsibility to protect the national security. Therefore there must be some elements of control in a democracy; otherwise, it could degenerate into "democrazy." Thus, we envisage for African nations a form of controlled democracy.

Democracy in its ethical sense is a form of organization and procedures in which the institutions of society are geared to manifest an equality of concern for all human beings to develop their potentialities to the fullest. Thus, in education, democratization would inevitably imply equal educational opportunities or equal access to educational opportunities.

A democratic way of life also presupposes the principle that those who are affected by any decisions should have some say in influencing those decisions. This is pertinent in all educational policies, practices and procedures.

Some other conditions for democratic rule include

1. **Freely given consent** — That is, absence of coercion or threat of coercion employed against expression of opinion; no arbitrary restriction placed on freedom of speech, press, and assembly; no monopoly of propaganda by the ruling party; no institutional control over the instruments or facilities for communication.

2. **Informed Citizenry** — The center piece of this principle is the spread of education, allowing for an informed and critical awareness of the issues and problems of the time. In this regard, it was Thomas Jefferson who said that any nation that expects to be ignorant and free expects that which never was and that which never can be. For the more informed and better educated the electorate, the healthier is the democracy. Indeed men can be enslaved by their ignorance. Education is the greatest bulwark for democracy.

3. **Citizen Participation** — Active participation of the citizen in the process of governance is a major positive condition for the existence of effective democracy. Thus, in education, democratization would imply active participation of the citizens in educational policy formulation and implementation. It is said that, if one has nothing to do for a country, he will not care for it. Similarly, in education lack of participation in the formulation of policies in an educational system would imply a nonchalant attitude toward the process and development of the system. In Nigeria, for instance, local government education authorities, school boards of governors, and PTAs are vehicles for citizen participation in educational decisionmaking.

4. **Delegation of Power** — Intelligent delegation of power and careful assignment of responsibilities are basic ingredients for effective democracy. In educational governance, this is imperative for effectiveness and efficiency.

5. **Skepticism and Judgment** — Democracy demands intelligent skepticism concerning claims of absolute truth and infallibility of experts. In education, claims to truth must be documented and appraised; hence the importance of research in education as an imperative for appropriate democratization.

All in all, according to Dewey (1925: 101), democracy is more than a form of government: it is primarily a mode of associated living, of conjoint communicated experience. In fact, political democracy invariably and inevitably implies relevant economic reforms and necessary educational reconstruction. For instance, the global democratization process has inevitably engendered global free market economies. Therefore, we shall now turn to the issue of the democratization of educational systems as a necessary consequence of political democratization.

Democratization of Educational Systems

Political philosophers since Aristotle have argued that as the state, so is the school. But we wish to add that as the teacher, so also is the school. James Mill (1935) and others also hold that "a prominent strand in Democratic theory is the assumption that education is the correlate, if not a requisite of democratic order." Indeed there is a link between education on one hand and the polity, economy, society and culture, on the other.

Therefore, the movement for democratic ideals inevitably implies a movement for publicly conducted, controlled and administered schools; and this is a realization that a new educational system is necessary for the production and sustenance of a new society.

Again in the democratization of education, there must not be any dichotomy between thinking and acting. For instance, the concept of classless society implies that education or intellectual opportunities will be open and accessible to all on equal and equitable terms. Thus, education for democracy must exemplify democratic ideals and principles.

However in the developing nations of the world, in particular, we must be wary about turning democracy into "democrazy"; we must avoid copying labels for their own sake; and we must be conscious of our indigenous institutions and practices that have stood the test of time. While striving to improve on their imperfections, we must guard against their elimination without appropriate substitution. Whereas liberal democracy may be the ideal in one culture, a controlled or guided democracy may be the panacea in another. Rationality, relevance and suitability should be our guide.

Thus, from the political conception of democracy as government of the people, by the people and for the people, we can infer that an important strand in the democratization of any educational system is that the system must be of the people, for the people and by the people. This clearly implies, particularly in the African context, indigenization and relevance in the educational system. Thus in the African setting, democratized educational systems must be African in objective, content, process and methodology. This is not to advocate isolationism; rather, it is to state that a truly democratized educational system must, as a first principle, be indigenous and relevant. To be sure, some materials could be borrowed, but the finished product must be indigenous.

In my own country, Nigeria, this basic element of democratization has largely been achieved. For instance, in the year 1969 there was, for the first time in the history of the country, a National Curriculum Conference with the main broad objective of producing a relevant and suitable curriculum for the education system. This was followed in 1973 by a national seminar to deliberate on all aspects of national policy on education. The outcome of this was the publication, in 1977, of a document on National Policy on Education, which was subsequently revised in 1981. The policy was predicated on the realization that education is an instrument par excellence for effective national development. To achieve this purpose, it was felt that it is necessary to remove any existing contradictions, ambiguities, and lack of uniformity in the educational practices in the different parts of the country. It was also stated that for the benefit of *all* citizens, the country's educational goals, in terms of its relevance to the needs of the individual as well as in terms of kind of society desired should be clearly set out. It was also observed that since education is a dynamic instrument of change, the policy will need to be constantly reviewed to ensure its adequacy and continued relevance to the national needs and objectives.

In addition, the policy was based on five main national objectives of Nigeria; namely, the building of

1. a free and democratic society;
2. a just and egalitarian society;
3. a united, strong and self-reliant nation;
4. a great and dynamic economy;
5. a land of bright and full opportunities for all citizens.

The policy was therefore the beginning of the process of a truly democratic educational system.

Expanding Access to Educational Opportunities

To be sure, some Africa nations have already embarked on massive programmes aimed at expanding access to educational opportunities. For instance, Egypt introduced completely free primary education as far back as 1944, and secondary education became free in 1950. According to Abdelaziz Soliman (1952), a kind of nationalistic educational revolution henceforth started and educational goals began to reflect more and more the needs and aspiration of the country.

In the Cameroons, as far back as 1977, some 65 percent of school age pupils (6–14) were actually enrolled. In Kenya, by 1968 it was estimated that some 61 percent of primary school age groups were enrolled.

It must be stated, however, that in the democratization processes all over Africa, we must remove all the unnecessary academic barriers which have only age or tradition to recommend them and eliminate the courses in our teacher education institutions on the basis of need, relevance, suitability and functionality. We shall now examine in more detail the various elements in the democratization process in education using Nigeria as a case study.

From the above analysis, the first visible sign of the democratization of the educational system must be the expansion of access to educational opportunities. In a democracy, no child should be denied access to at least basic education on account of circumstances of birth, parental economic conditions, race, or religion. Basic education must therefore be open and accessible to the poorest child in the remotest village of the remotest part of the country. Indeed basic education is a legal right of all children in a democracy.

In recognition of this, the General Assembly of the United Nations on 29 November 1959, adopted the following declaration, among others, about the rights of children, namely:

a. The right to special care if handicapped;

b. The right to free education;

c. The right to be a useful member of the society;

d. The right to develop his abilities;

e. The right to enjoy full opportunity for play and recreation.

Following this, the 1989 Constitution of the Federal Republic of Nigeria, my country, under section 9(1), laid down the legal foundation for democratization of education in the country by providing that "Government shall direct its policy towards ensuring that there are equal and adequate education opportunities at all levels." This legal provision is imperative in democratization process everywhere.

Here we must make clear what we mean by equal educational opportunities. Philosophically, there are two concepts of equality. One is the concept of sameness and the other is the concept of fittingness. In education, equality as sameness would be meaningless since different human beings, biologically and psychologically, can never be the same. So in this context, by equality we mean fittingness. Consequently, equal access does not mean the same access, but fitting access.

In Nigeria the introduction of Universal Primary Education (UPE) in September 1976 marked the beginning of the national attempt to expand access to primary education.

As a result of this, the population of primary education increased from 2,942,618 in 1960 (the year of independence) to 14,674,539 in 1984/85 school year (Table I). That is a 399 percent increase within 25 years, or the average of 15.92 percent annually. Regrettably, there appears to be a slight decrease in the primary school population in the country within the recent past. For in the year 1989, the primary school population stood at 14,441,006 (see Table III).

Table I.—Growth of primary education in Nigeria — 1960–1985.

	INSTITUTIONS		ENROLLMENT	
YEAR	NUMBER	GROWTH INDEX	NUMBER	GROWTH INDEX
1960	15,703	100.00	2,942,618	100.00
1965	14,967	95.78	2,911,742	98.95
1970	14,902	94.90	3,515,827	119.48
1975/76	21,200	135.01	6,128,300	208.26
1980/81	36,683	233.01	13,760,030	478.61
1982/83	37,888		14,574,523	
1984/85	38,211		14,674,539	

Table II.—Growth in secondary education — 1960–1985.

	INSTITUTIONS		ENROLLMENT	
YEAR	NUMBER	GROWTH INDEX	NUMBER	GROWTH INDEX
1960	1,227	100.00	168,309	100.00
1965	1,654	134.80	252,586	150.07
1970	1,381	112.55	356,013	211.52
1975/76	1,865	152.00	854,785	507.87
1980/81	5,002	407.66	2,366,833	1406.24
1982/83	5,317		2,899,215	
1984/85	6,231	507.82	3,807,755	2,262.36

However from Table II, it is also observed that secondary education enrollment similarly increased from 168,309 in 1960 to 3,807,755 in the 1984/85 school year, representing a 2,162 percent increase or an average of 86 percent increased per annum. The situation with higher education was even more astounding. From Table IV it is observed that the enrollment in higher education increased from 2,545 in 1960 to 213,733 in 1984/85 session; that is an increase of 8,298 percent within 25 year. This is clearly unprecedented.

To put it differently, within the period under review, enrollment in primary education in Nigeria increased five fold, that of secondary education grew by 22.5 times, while that of higher education rocketed by approximately 84 times.

Tables V and VI compare enrollment trends in Nigeria with those of other parts of the world. From Table V, it is observed that while the total enrollment at all levels of the educational system increased by six times in Nigeria, those in the other parts of Africa, taken together, increased by four and half time; those in the developing countries, taken together, increased by a little over three times; those in

Table III.—Growth of higher education in Nigeria — 1960–1985.

YEAR	INSTITUTIONS		ENROLLMENT	
	NUMBER	GROWTH INDEX	NUMBER	GROWTH INDEX
1960	9	100.00	2,545	100.00
1965	14	155.56	7,545	302.44
1970	19	211.11	14,474	568.72
1975/76	42	466.67	59,175	2,329.15
1980/81	71	788.89	146,449	5,754.38
1984/85	89	988.89	213,733	8,398.15

Table IV.—1989 primary school statistics by states.

STATES	NUMBER OF LGA	NUMBER OF SCHOOL	NUMBER OF CLASSES	NUMBER OF FEDERAL	PUPILS TOTAL	NUMBER OF TEACHERS	TEACHERS BY NCE	QUALI-FICA-TIONS
AKWA-IBOM	20	1,061	10,624	243,517	743,526	11,682	1	11,394
ANAMBRA	29	2,096	25,279	410,671	1,003,228	30,903	935	22,323
BAUCHI	20	1,427	14,399	124,981	323,594	11,357	200	31,102
BENDEL	20	1,857	21,083	552,201	1,063,432	21,137	440	14,880
BENUE	19	2,392	17,217	230,980	1,144,800	28,500	1,367	9,642
BORNO	24	1,433	11,113	181,241	464,478	10,902	88	2,415
CROSS RIVER	8	623	8,382	113,251	403,703	6,564	22	6,100
GONGOLA	21	1,464	11,116	132,610	354,495	18,913	329	6,254
IMO	30	2,036	25,076	430,788	927,138	20,993	103	20,223
KADUNA	13	1,358	1,345	237,903	559,929	15,187	2,180	4,731
KANO	46	3,276	20,649	406,453	1,163,815	30,000	129	939
KATSINA	20	1,939	18,682	210,897	775,482	10,793	132	5,958
KWARA	14	1,466	13,390	176,645	525,801	16,259	1,027	5,688
LAGOS	12	894	21,654	338,086	866,128	16,623	5,174	13,247
NIGER	10	614	5,417	117,691	311,426	8,172	220	6,100
OGUN	12	1,301	13,079	194,851	422,823	12,107	120	9,511
ONDO	22	1,664	18,229	215,461	524,638	15,345	3,805	10,749
OYO	42	2,599	38,686	536,209	1,083,474	32,740	1,159	26,966
PLATEAU	16	1,722	14,786	225,710	558,370	16,823	1,893	7,711
RIVERS	14	1,112	12,168	218,226	429,954	10,694	489	10,645
SOKOTO	37	2,458	18,018	227,601	723,124	25,694	552	3,120
FCT - ABUJA	4	212	1,442	119,831	67,708	1,714	13	661
Grand Total	453	35,004	34,834	5,626,339	14,441,066	373,102	20,378	230,359

Source: National Primary Education Commission.

Table V.—Trends in enrollment by level of education in Nigeria and other regions of the world 1960 and 1985.

		FIRST LEVEL (in 000's) II(b)		
		1960	1985	
1.	Nigeria	2,942.6	14,674.5	5.0
2.	Africa	19,312.0	77,293.8	4.0
3.	Developing Countries	121,892.0	331,143.2	2.7
4.	Developed Countries	124,077.7	126,199.2	1.0
5.	World	246,059.7	457,341.4	1.9
		SECOND LEVEL (in 000's)		
1.	Nigeria	168.3	3,807.7	22.6
2.	Africa	1,885.1	21,781.8	11.6
3.	Developing Countries	21,788.2	125,882.9	5.7
4.	Developed Countries	46,429.1	80,851.1	1.7
5.	World	68,217.3	206,734.0	3.0
		THIRD LEVEL (in 000's)		
1.	Nigeria	2.5	213.7	85.5
2.	Africa	184.8	2,065.2	11.1
3.	Developing Countries	2,624.9	22,340.0	8.5
4.	Developed Countries	9,598.6	30,196.2	3.1
5.	World	12,223.3	52,537.1	4.3

Source: Pandit, 1986; Ukeje, 1988.

Table VI.—Trends in enrollment by level of education in Nigeria and other regions of the world 1960 and 1985.

		ALL LEVELS (in 000's)		
	REGION	1960	1985	INCREASE
0	1	2	3	4
1.	Nigeria	3,083.5	18,696.0	6.1
2.	Africa	21,381.0	101,131.0	4.7
3.	Developing Countries	146,395.1	479,306.1	3.3
4.	Developed Countries	180,105.4	237,246.5	1.3
5.	World	326,500.5	716,613.5	2.2

the developed world increased by slightly less than one and half times; while that in the entire world increased by just over two times. It is interesting to note that the rate of increase generally increased rapidly from the first level to the third level of the educational ladder, with Nigeria achieving an increase of 84 times at the third level as against 11 times for Africa, eight and half times for the developing countries, three times for the developed countries and four times for the entire world. Today in Nigeria, there are over 20 million pupils and students enrolled in some 40,000 educational institutions of all levels and types. The implication for teacher education can only be imagined.

Again, in Nigeria the sudden and unprecedented increase in school enrollment following the introduction of the UPE in 1976 in turn resulted in the recruitment of a large number of unqualified teachers. Thus, there was the problem of getting these unqualified teachers trained, while at the same time retaining them on the job.

To tackle this problem, the federal government established, in 1977, a National Teachers Institute (NTI) in Kanduna. The objectives of the institute are to

- develop and produce self-instructional materials for unqualified teachers through distance education;
- improve the teaching effectiveness of teachers;
- conduct research aimed at improving teaching skills and learning effectiveness of teachers
- conduct TC II examination and award certificates to deserving candidates.

In order to achieve these objectives the NTI established Field and Study Centers for Teachers; through its research and Curriculum Development Programs, it has thus far produced the following innovative materials for the improvement of teacher education:

1. A revised, relevant and indigenized syllabus for the Grade II Teachers;

2. TC II materials by Distance Learning System in English language, mathematics, education; and

3. Materials for the Nigerian Certificate in Education (NCE) by Distance Learning System in English language, mathematics, education, social studies, health and physical education, cultural and creative arts, primary education studies, Christian religious studies, and Islamic religious studies.

Apart from the NTI, the federal government of Nigeria, in response to the sudden explosion in school population, established other "Crash Programs" for the production of teachers for the UPE. These include the reduction to one year the erstwhile two-year, post-secondary teacher training program for the production of Grade II teachers and the institution of automatic bursary for education students in both the colleges of education and the universities.

Because the new National Policy on Education provides for a new education system generally referred to as 6-3-3-4 system, which is technically and practically oriented, the federal government introduced a crash program for the production of technical teachers — The Technical Teacher Training Program (TTTP), — through which students were sent largely to the United States for their Technical Teacher Education training. At the same time, specialized colleges of education were established at Akoka, Lagos; Bichi in Kano State; Gombe in Bauchi State; Potiskum in Yobe State; Asaba in Delta State; Omoku in Rivers State; Gusau in Sokoto State; and Umunze in Anambra State.

Despite all these impressive efforts, by 1989, of a total of 373,102 primary school teachers teaching in the country, only 230,359 possessed the present minimum acceptable qualification of Grade II Certificate to teach in Nigerian schools. That is, only some 61.7 percent of the primary school teachers throughout the country possessed the minimum qualification to teach. In other words, 38 percent of the teachers were not qualified to teach.

Recently, Nigeria boldly and rightly decided that the minimum qualification for entry into the teaching profession should be the Nigerian Certificate in Education and that this should be attained before the year 2000. But by 1989 only 20,378 out of 373,102 teachers in the primary schools possessed this qualification. In other words, by 1989 only 5.5 percent of the teachers possessed the projected minimum qualification for entry into the teaching profession. And the year 2000 is around the corner. This clearly calls for continued tremendous expansion in the teacher education at the NCE level.

There are today 55 NCE colleges of education in the country. In order to produced the short-fall of at least 352,724 NCE teachers for the primary schools alone between now and the year 2000, either each one of the colleges produces annually not less than 900 NCE primary teachers or more colleges are established. Each of the alternatives poses a tremendous challenge to the governments of the day.

Under the present trend, which is already unprecedented, by the year 2000 there would be only about 70 percent of the primary school age group actually in the school, and less than 30 percent of secondary school age group in school. However, the present Federal Ministry of Education two years ago launched

an alternative innovative strategy to achieve education for all by the year 2000. This is the strategy of *Each One Teach One or Fund the Education of One.* It is yet too early to assess how successful this would be in achieving the stated objective, but it is clearly an innovative and imaginative strategy.

Teacher Education Programmes for Special Education

In the spirit of expanding access to educational opportunities to all citizens and being aware that of some 25 million Nigerians of school age, not less than 10 percent or 2.5 million would be handicapped according to UNESCO estimates (UNESCO, 1969). Nigeria established in 1977 a college of education (Special) at Oyo. The college now has student population of some 900 and trains teachers in the areas of visually impaired, hearing impaired, physically handicapped and mentally handicapped. In addition all faculties of education and colleges of education throughout the country are obliged to incorporate in their teacher education programmes courses in special education for their teachers. In colleges of education this is a required course for all students and it covers the areas of visual impairment, hearing impairment, speech and language disorders, behavioral disorders, hearing disorders, mental handicapped, as well as gifted and talented children.

Education for Enfranchisement of Special Group

As we have already stated, democratization of education implies expansion of access to all citizens. In this regard, Nigeria has actively expanded access to education to various special groups such as children of nomads and migrant fishermen, illiterates, the handicapped and economically deprived.

Structurally, primary education in Nigeria has been greatly democratized with the view to making education available to all. Degree No. 3 of 1991 has established Local Government Education Authorities, whose functions include the establishment, management and funding of primary education within their areas of jurisdiction. There are 589 Local Governments in Nigeria and each has established an Education Authority and an Education Committee made up of representatives of various interests in the Local Government Area. There are also District and Village Education Committees. These are all agencies for democratization.

In this system, the handicapped are integrated into the main stream of the system and are adequately catered for, since most of the teachers would have been exposed to the basic elements of special education.

The children of the nomads and migrant fishermen are, however, giving special attention in the present system. Accordingly, a Commission for Nomadic Education, which later included Education of Migrant Fishermen, was established by Decree No. 41 of 1989. The main objective is the provision of suitable education to the children of these migrant citizens. The nomadic schools increased from about 420 in 1990 to 610 in 1991, with student population increasing from 26,130 in 1990 to 42,386 in 1991. In 1991 there were some 1,872 teachers in the nomadic schools. The schools are made up of different structures depending on certain logistics considerations. Thus, the 610 schools in 1991 were distributed as follows:

Permanent structures	164
Semipermanent structures	33
Temporary structures	269
Under tree shade	142
Mobile collapsible structures	3
	610

For the education and enfranchisement of the illiterates and rural dwellers, apart from the strategy of *Each One Teach One* or *Fund the Education of One*, which we have already mentioned, there are other national programmes, particularly for our women.

Some five years ago (1987), the wife of the President and Commander-Chief of the Federal Republic of Nigeria introduced a programme known as *Better Life for Rural Women.* Subsequently, a Women's Commission was established for the upliftment of the status of women in the society.

The Federal Ministry of Education has also established a Women's Education Department. Through these bodies, a network of educational and development programmes has been established throughout the country. There are Better Life and Women's Centers being established in every state by the Federal Ministry of Education and Youth Development. The educational programmes have covered adult literacy classes and house crafts.

Variety of Delivery Systems to Improve Student Achievement and Scope of Education

Rapid expansions in the educational system inevitably imply the problem of maintaining quality in the educational system.

It is an undisputable fact, indeed an inevitable phenomenon, that in the course of expanding to meet the increased and ever increasing demands, educational qualities and standards have invariably been affected. In general, the normal response to popular demand for education has been to spread the scarce resources thinner and thinner over more and more students, until what goes on as education becomes a caricature of the real thing. This leads to the phenomenon of education for all being equivalent to education for none.

Therefore, in Nigeria, strategies had to be devised to maintain standards. The first was the establishment of an Implementation Committee to monitor the implementation of the National Policy on Education introduced in 1976. Also since 1991, the Federal Ministry of Education established a special Programme Unit for the Monitoring and Evaluation of Primary Education in the country.

But before this, specialized Curriculum Development bodies had been established to improve the educational delivery systems. The most important of these is the Nigerian Educational Research Council, which was later changed to Nigerian Educational Research and Development Council (NERDC). The NERDC has been involved in educational innovation in two areas; namely, (1) a National Primary Science and Mathematics Project (NPSMP), and (2) Population Education Programme for Nigeria (PEPN).

The NPSMP is an innovative project designed to bring quality education into the Nigerian primary school system in the areas of science and mathematics with the view to laying solid foundation and providing and sustaining the interest of the Nigerian children in these areas of study. It is hoped that through this project the Nigerian children will grow to ensure their own survival and that of the society as well as being agents for technological development and productivity in all sectors of the economy.

The stated objectives of the project are

1. The introduction of the teaching of integrated science and mathematics throughout the primary schools in the country.

2. Bringing quality into the teaching of the subjects with a view to laying a solid scientific and technological foundation;

3. Planting the seeds that will bring forth future scientists and technologists capable of effectively harnessing and managing the resources of the country for attainment of self-reliance and technological growth and advancement.

The phases of the implementation of the project are as follows:

Phase I Design and production of science equipment and instructional materials.

Phase II Training of teacher trainers and pilot school teachers.

Phase III Launching of the project in pilot schools in all the states of the Federation, including the Federal Capital Territory, Abuja.

Phase IV Monitoring and evaluation of the project.

The implementation strategy, which has 20 aspects, is as follows:

1. Setting up of a Research and Development Laboratory for primary school science;

2. An initial network of 912 to 1,000 schools for demonstration purposes in 304 out of the then 453 Local Governments throughout the Federation;

3. A list of 22 science and 18 mathematics themes with some 400 components;

4. Identification of basic equipment and materials for the themes;

5. Establishing science gardens and specially enriched environments in the pilot schools;

6. Imparting knowledge and skills of improvisation to the teacher so that the greater percentage of science and mathematics equipment and materials will be improvised by him;

7. Establishing a system of storage, distribution, installation, repair and replacement of equipment in at least five zones — Lagos, Ibadan, Kano, Bauchi, Owerri.

8. Organizing a series of seminars for teacher trainers and a series of workshops for science and mathematics teachers in all the states of the Federation over a period of two or three weeks at a time;

9. An expansion programme to increase both the number of pilot schools and the teachers of science and mathematics year after year;

10. The production of teacher's guides, pupils texts and enrichment materials on all the themes and units;

11. Demonstration of science and mathematics — individual, group, discovery, play, etc., in pilot schools;

12. Providing training in laboratory safety;

13. Zonal and individual management and administration of the pilot schools;

14. Articulation of primary school science with secondary school work;

15. Selection of academically talented children for intellectual challenge;

16. Use of experts from higher educational institutions in all phases of the project;

17. Teacher training in science and mathematics on the selected themes in a few teachers' colleges;

18. Continuous monitoring, evaluation and assessment of the project;

19. Motivation, remuneration, up-grading, and certification of science and mathematics teachers;

20. Legislative, financial and administrative support to ensure compulsory science and mathematics teaching with adequate materials.

These are clearly sound objectives for the improvement of the quality of education in these areas.

By 1983, six zonal teacher training workshops had been held. The project was interrupted between 1983 and 1985 due to political changes in the country. However, it took off again in February 1986 with a reorientation workshop.

One of the unique features of the project is the adequate publication and provision of appropriate complementary textual materials by NERDC.

The science texts already published include

1. Training Manual for Primary Science Teachers in Nigerian Schools;
2. Guide to the production of Primary Science Equipment by Teachers;
3. Integrated Science for Nigerian Primary Schools — Pupils text (years 1 to 6).
4. Integrated Science for Nigerian Primary School — Teachers Guide (years 1 to 6).

The mathematics texts already published include

1. Training Manual in Primary Mathematics;
2. A Handbook of Mathematics Teaching Aids for Teachers
3. Primary Mathematics - Teaching Guide (years 1 to 6)
4. Primary Mathematics - Pupils Text (years 1 to 6)

This project has thus far had tremendous and far-reaching impact on the educational system. The knowledge gain of the pilot teachers as a result of the project was found to be significant both at 0.05 and 0.01 levels. Tests also show that the pilot teachers have developed favorable attitudes towards science. It is also giving some impetus to the activities and the success of Junior Engineers and Technicians (JETs) — a club that conducts annual inter-school challenge quiz in the areas of Agriculture, Biology, Chemistry, Computer Studies, Mathematics, Physics and Technology. The Third Annual JETs competition was held at Ibadan in 1991.

The Population Education Programme, also conducted by NERDC, is another innovative research scheme which started in the year 1982. The programme was necessitated by the Nigerian dilemma of popular education. The heart of the problem is this: Can a developing nation like Nigeria provide quality and relevant education to all that demand it in a state of global economic depression, rising costs, population explosion and unprecedented unemployment rates? Thus, the programme essentially looks into the problematic issues of the relationship between resources and population dynamics in Nigeria and how best to explore or use the efficacies of education in resolving them to be responsive to the precarious state of the economy in the face of increasing demand for education, rising costs, and unprecedented unemployment rates.

Under the present trend, there would be a total of some 30 million people in all types of educational institutions in Nigeria undergoing full-time studies by the year 2000. And this trend which is already unprecedented would imply that only about 75 percent of primary school age children are actually in school, that less than 20 percent of the secondary age group are in school and that less than 15 percent of applicants for higher education are actually offered admission.

A recent survey (1991) conducted by the NERDC indicates that while there was a shortage of qualified teachers in the school system there was an estimated total of 36,670 unemployed qualified teachers in 19 out of the then 21 states of the Federation; and that 24,430 of these were primary school teachers, while 10,249 (29.55 percent) were secondary school teachers. Herein is the crux of the dilemma; there are not enough qualified teachers in the school system, but some of those qualified are not employed.

Another significant delivery system for the improvement of the quality of education in Nigeria is being developed by the National Mathematical Center, Abuja.

The Center which emerged as a result of the awareness of the importance of mathematics in modern development and the problems of mathematics teaching and learning in the country, was established by the federal government through Decree No. 40 of 1989. The functions of the Center, among others are

- identify and encourage young talents in the mathematical sciences;
- stimulate enthusiasm for the physical sciences in young Nigerian students and scholars;

- prepare Nigeria for a leading role in mathematical sciences;
- encourage and support activities leading to the improvement of the teaching and learning of mathematical sciences at all levels;
- conduct seminars, workshops and symposia in each area of the mathematical sciences as need arises.

Some of the programmes already undertaken by the Center to accomplish the above objectives include

1. **A Workshop on Strategies** for the improvement of the teaching and learning of mathematics at all levels was held in February 1991. It brought together eminent mathematicians from the universities, mathematics educators, teachers of mathematics in the school system and policymakers from the Ministries of Education. Nine papers, which have formed the source of the subsequent activities of the Center, were presented.

2. **Development of Prototype Mathematical Games** for the development and sustaining of interest in the study of mathematics. A workshop for the development of the games was held in May this year. The Games are now being edited and will eventually be published and made available to the schools throughout the country.

3. **Incentive Schemes** for the motivation of both teachers and students in the teaching and learning of mathematics. There are five levels or categories of the incentive scheme. The grassroots level covers prizes and certificates for the best 100 students in mathematics from every state of the Federation at the end of primary school. The students will be selected as a result of a competitive national examination. The teachers who produce the winning students and the schools will also receive prizes and certificates.

   The second level or category is also a set of prizes and certificates for the best 50 students in Mathematics from any state of the Federation at the end of Junior Secondary School. Again the selection will be as a result of a competitive national examination.

   The third level or category comprises scholarships for teachers who wish to study mathematics in the colleges of education and who reach a certain standard in the entrance examination for the course.

   The fourth level or category also provides scholarships for teachers wishing to read mathematics education in the universities at first degree level and who reach a certain standard in the entrance examination.

   The fifth level offers scholarships for a degree in mathematics in any Nigerian University, subject to maintaining certain standards of achievement. One hundred scholarships in levels four and five have been awarded for the 1991–92 school year.

4. **Development of Teaching Modules** for secondary school mathematics. Another major project of the Center is the development of teaching modules in mathematics to cover the entire school system. A workshop was recently held (July 5 to 10) on the development of teaching modules to cover the entire secondary school syllabus in mathematics. When completed linkage workshops for the training of teachers will be held in five zones into which the entire Federation has been divided.

Other organizations like the Science Teachers Association of Nigeria (STAN) and the Mathematical Association of Nigeria (MAN) are also developing innovative programmes for the improvement of the delivery systems in their various areas.

Nigeria has clearly achieved unprecedented quantitative development in the educational system within the past two decades. Serious attempts are now under way to improve the quality of the educational offerings at all levels through the development and implementation of various innovative strategies and delivery systems.

In recognition of the critical importance of urgent attention to the qualitative aspect of educational development following the unprecedented linear expansion and in addition to the programmes already discussed, Nigeria, with World Bank assistance, has planned a Primary Education Improvement Project (PEIP) 1992-1998. Some relevant elements of this project include the training of about 400,000 educational personnel, including classroom teachers, headmasters, and supervisors for the rapidly expanding system, and the provision of textbooks in the four principal subject areas of mathematics, science, english and social studies, beginning with primary one in the 1992–93 school year and moving up to successive grades annually.

The federal government has also decided on a policy that requires each statutory commercial company in the country to contribute annually 2 percent of its net profits before tax in support of education at all levels.

Furthermore, with the leadership of the present Federal Minister of Education and Youth Development, A.B. Fafunwa, the federal government has agreed to contribute the sum of N $250 million for the establishment of an education bank to facilitate easy access to education at all levels.

These are clearly bold steps to expand and sustain easy access to education and to make sure that education for all does not eventually become education for none.

From the Nigerian experience, it is pertinent to state that with the global political and economic realities of the time, it should be clear, particularly to the developing nations of the world, that the strategy of linear expansion in education is necessary but not sufficient for national development. It has become necessary, indeed imperative, that we give at least equal attention to the qualitative aspects of educational expansion.

New In-Service Programmes to Cope With Changing Political and Social Problems

In general, massive expansion in access to educational opportunities would normally imply equal expansion in the pre-education of teachers. Quite often this would mean a new system of teacher training institutions and strategies and massive recruitment of even unqualified teachers who would require a new system of in-service education for their training.

The introduction of a system for Universal Primary Education in 1976 necessitated, as we have already stated, the introduction of a crash programme to mass produce teachers. The elements of the programme include the reduction of the duration of the postsecondary teacher education programme from two years to one year and more importantly the establishment of the National Teachers Institute (Kaduna) for the training of unqualified teachers through distance education programme.

The requirement in the new National Policy on Education (1981, section 61) that the Nigerian Certificate in Education (NCE) ultimately become the minimum basic qualification for entry into the teaching profession and the inevitable devaluation of qualifications as a result of rapid social changes engendered the introduction by the universities and later, by other higher educational institutions, of Sandwich Programmes for upgrading and updating the qualification and expertise of serving teachers. The programmes are normally conducted during the annual long vacations for the schools.

The programme commenced in a few universities around the first half of the 1980s, but it has now spread to almost all the universities and some colleges of education in the country. The university programmes are for the upgrading of the NCE and associateship diploma holders to degree level, while the programmes in the colleges of education are for the upgrading of Grade II teachers to NCE level.

In general, almost every teacher wants to achieve higher status through in-service education programmes. The degree holders go on for the Master's Degree while some of these even go on for their doctorate under the Sandwich Programme. The programmes have become so explosive with varying degrees of quality that many well-meaning educationists are worried that this may be leading to two negative results: the lowering of standards to accommodate the avalanche of students and the abandoning of classroom responsibilities in pursuit of higher qualifications which invariably imply higher status and higher pay.

The importance of in-service education for the renewal and updating of the knowledge and expertise of the teacher cannot be overemphasized. As Elsbree and Reutter (1954) have rightly stated: "Human beings in all walks of life get into ruts, and unless people are encouraged to get out of them, the ruts get deeper." And it is said that scientific knowledge doubles every seven years, so any professional that fails to keep up with the changes in knowledge and skills in his field of endeavor actually ceases to practice. In Nigeria, apart from the necessity to upgrade the large army of unqualified teachers to an acceptable professional level, there is also the need to provide training facilities and programmes for graduates in the sciences or liberal arts who decide late to go into teaching. These have to be trained through in-service programmes leading to the postgraduate diploma in education. In this regard, the debate about the differences in quality between the consecutive and concurrent strategies for teacher education will continue; but the nagging disease must receive urgent, if palliative, attention.

There is also the problem of professionalizing the personnel in Ministries of Education who entered without teaching qualifications as well as those who have been appointed to posts of responsibility, such as principalship, without the necessary specialized professional education and training. These require specialized in-service education relevant to their responsibilities. For instance, principals of secondary schools and headmasters of primary schools should receive specialized preparation through in-service education programmes for their specialized responsibilities. Such programmes should cover elements of school organization and management, curriculum development and guidance and counseling.

All in all every teacher needs constant and continuous exposure to innovations in the teaching profession. This should be through various in-service education programmes. Thus in-service education programmes should be developed as an integral part of continuing teacher education. Even professors or lecturers in higher educational institutions need in-service education experience to expose them to the requirements and possibilities of the teaching profession. Every nation needs to devise strategies that will be relevant and suitable to her peculiar circumstances, needs and aspirations.

Academic Freedom

A discussion of the process of educational democratization may not be considered complete without considering the vexing but vital philosophical issue of academic freedom.

The classical basic elements of academic freedom are

- freedom to select those to be taught;
- freedom to select who should teach; and
- freedom to decide what should be taught.

Clearly the meaning of academic freedom, in particular, must be tied firmly to the meaning of freedom, in general. In particular, freedom of speech is one of the cardinal principles of democracy. Therefore in a fully democratized educational system the teachers and the students should be free to discuss any issues, controversial or otherwise. All sides to the issue should be presented. The role of education in a democracy is not to provide the youth with preconceived answers to issues or with doctrines acceptable to the influential sections of society but to provide them with opportunity to examine, to criticize and to consider all sides of every vital problem.

In a truly democratized system, teachers should not be prevented from teaching in the national schools anywhere and at any level in the country solely on account of political, racial or religious affiliations. In America, which is supposed to be the bastion of democracy, this principle was unfortunately violated during the peak of the Cold War in the 1940s and 1950s. Many American professors received national honor for teaching what they wished. Elsewhere in the continent of Africa some university professors were recently given the boot for teaching what they were not employed to teach.

In the essentialist view, academic freedom is the opportunity to explore, to question, to examine and to improve. Therefore, provided the aim is a positive contribution to improve through exploration, questioning and examination, the principle of academic freedom should be preserved in a democratized educational system. Actually academic freedom as a crucial aspect of general freedom is necessary and imperative for good education in a democratic social order.

Implications and Challenge to Teacher Education

Teachers are the hub of any educational system. They are the determinants of quality in any educational system. This is so because in the final analysis it is the teacher who translates policies into programmes and principles into action. Therefore no matter how grandiose, innovative and imaginative the plans and programmes, the desired objectives may not be achieved without the right number of adequately educated and trained, dedicated and loyal, motivated and disciplined, committed and happy teachers serving at all levels of the educational system.

Therefore, with the political democratization process sweeping through the world, which has resulted in both economic and educational democratization, a tremendous challenge has been posed to teacher education, particularly in the developing world. It is now accepted that education, particularly for the developing countries of the world, is not only the prerequisite but also the prime determinant of economic and technological development as well as political stability and national survival. It is also known that if education unlocks the door to modernization, it is the teacher who holds the key to the door; it is also a truism that no educational system can rise above its teachers. Therefore, it is a national suicide for any developing nation, in this age of science and high technology, either by accident or by design to have its best brains design and build its roads and bridges, cure its sick, formulate and interpret its laws, while its poorest brains teach its youth. The results, as we are witnessing in parts of Africa, are roads that wash away after the first rains, bridges that collapse after a few years of use, taps without water, electricity that is most erratic, telephones that are perpetually out of order, hospitals that kill as much as they cure, and incongruous laws, purchased and teleguided justice. Clearly, these results are not true of all Africa but their elements exist in several African countries and other undeveloped nations.

Indeed, we cannot have effective and eminent engineers without good teachers; we cannot have efficient, dedicated and humane doctors without effective, dedicated, responsible and humane teachers; we cannot have competent lawyers, fearless and upright judges without upright, dependable and incorruptible teachers. We cannot even have a strong, effective, efficient and loyal army to defend and protect our territorial integrity without loyal and patriotic teachers; and we cannot have a dependable police force to ensure our internal security and individual safety without loyal and dependable teachers.

My thesis is that these vestiges of underdevelopment can only be removed through good and universal education which inevitably implies good teachers. Indeed, in a developing country, teachers are truly the builders of tomorrow. Thus, in a developing country it is not advisable or even possible to "de-school the schools." For as Jack Allen (1961) has rightly pointed out, in the educative processes, there always stands the teacher, in front or at the back, in the center or at the sides, what he knows and does can make a difference; what he does not know and cannot do can be an irreparable loss to the students. Indeed, in Africa, the teacher, more than any other professional, stands at the apex of the modern challenge for growth and development. Therefore, teacher education in all Africa, and at this time in world history, must be viewed with unalloyed seriousness by all the governments of the African nations and all the citizens. His education and training must receive priority attention in the scheme of things. His reward should no longer be in heaven but should, at least, start here on earth.

Three interrelated factors that determine the future of any nation are

- the political state of affairs in that nation;
- the economic conditions existing in that nation; and
- the educational provision in that nation.

A change in any one of these factors inevitably, invariably and ultimately affects the others. Education is, however, the kingpin of development and progress. And teacher education is the pivot of educational development. Therefore, we in the developing nations of the world, if we hope to truly develop, must truly strive to democratize the educational systems, particularly teacher education, to make them more responsive to the needs of the people, the circumstances of the time, and the aspirations of the nation. In particular teacher education programmes all over Africa must now rise to the challenge of quantity and quality in the educational system so that education can truly become a veritable instrument for political stability, economic growth and technological development.

Summary

In this paper we have attempted to do a number of things. We have taken a cursory look at the concept of democracy, pointing out some of its basic elements and principles, as a framework for the examination of the main issue of the democratization of education.

We have discussed the general concept of educational democratization; we have analyzed the basic components of educational democratization generally, and we have used Nigeria as a case study in the detailed examination. The issues analyzed include equalization of educational opportunities, teacher education programmes for special groups, a variety of delivery systems to improve students' achievement, innovative in-service teacher education programmes to cope with the changing political and social problems — and we concluded this part of the presentation by calling attention to the vexing but vital issue of academic freedom. And, finally, we have concluded the entire discussion with an epilogue on teacher education.

We believe that the hope for a new World Order cannot be realized and sustained without the appropriate use of the efficacies of education, in general, and the imperatives of teacher education, in particular. To be sure, the challenge is enormous, the needs are urgent; education is the veritable agent for action; and urgent action is needed now. If not now, when? and if not by us, then who?

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Plenary Address, World Assembly Topic Two

THE PROFESSIONALIZATION AND STATUS OF TEACHER EDUCATION AND THE TEACHING PROFESSION

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We stand today on the threshold of a new century and a new millennium. The future is by definition unknown and unknowable. Yet if we "look" with our minds, its shape is clearly emerging all about us. **Mr. Federico Mayor,** has, very rightly I think, stated that what will define societies of the next century — and demarcate them from the past — is that one resource will predominate over all others: human creativity and capability. Already today — and ever more so tomorrow — human progress will be based upon the products of the mind: research, invention, innovation and adaptation.

Yet the fate of our society — both the individual societies to which we belong and the emerging global society which is our common home — depends, in very large measure, upon the quality and quantity of education it is capable of providing to its members. The capacity to educate, in turn, depends upon our ability to attract, recruit and train competent, committed and caring teachers. As we meet here today, hopes are being born in the minds of youth around the world, and new possibilities are emerging in schools in many countries. But, at the same time, other hopes are being dashed and possibilities foreclosed because many communities lack the teachers and quality education programmes needed to build a sound foundation for a more peaceful and prosperous future.

Before entering more deeply into the discussion of our subject, I should specify what I mean by professionalization, how it occurs and why it is important.

Professionalization can be defined and understood as socialization into a profession. Merton's classic definition, it will be recalled, describes socialization as *"the process by which people selectively acquire the values and attitudes, the interests, skills and knowledge — in short the culture — current in groups to which they are, or seek to become a member."* Exactly what the professionalization of teachers implies remains an area of controversy. Certainly, teachers are defined, in part, by the specialized knowledge they possess — knowledge of the teaching-learning process in general and knowledge of the particular subjects or levels of education in which they specialize. They are also defined by their relationship to that knowledge, by the way they test, build and share with colleagues the knowledge-base upon which successful teaching depends. Above all else, professionalization means that the teacher's primary commitment and responsibility is to the well-being of his students, not to the smooth functioning of a bureaucracy or any other goal which may conflict with or compromise the welfare of the student. In brief, when I speak of a professional teacher I mean, quite simply, a teacher who is competent, committed and caring. By professionalization, I mean the process through which trainees and new recruits are progressively transformed into such teachers.

In this address, I wish to make **four basic points. The first** of these is, in a modified form, the point I have already made in my introduction: namely, that the recruitment and education of teachers will emerge as a central and urgent policy issue in the 1990s. As society seeks to act upon its growing recognition of education as the key to the future, it will unavoidably have to address questions of recruitment, appropriate and affordable training, and selection and retention of qualified teachers. These problems will present themselves with particular urgency in the developing nations, where educational coverage is incomplete and demographic growth rapid, but the professional development of teachers is an issue which all countries will be called upon to address.

My second point is that to confront this issue, that is, to provide each society with the number and quality of teachers required for an era of global change, we are going to have to develop new practices and challenge many of the assumptions and practices to which politicians, policymakers and administrators have become deeply attached. Often our expectations of what teachers and schools can achieve, usually with extremely limited resources, are utterly unrealistic. Worse still, when these wildly optimistic expectations are not achieved, our tendency is not to rethink the problem, but rather to blame the teachers and the school for insufficient resourcefulness or effort. Unfortunately, this form of teacher-bashing is not mere "sport," without consequences or cost. By lowering the self-esteem of teachers and the value and respect accorded them by society, we further complicate the recruitment, retention and professionalization of teachers upon which the reform of education ultimately depends. And we do the greatest damage precisely where progress is most needed: namely, by discouraging the highly competent and motivated from entering the profession. The simple truth is that we cannot promote education by demoralizing and castigating teachers!

My third point is that teacher-education institutions will have to modify and up-grade their programmes and approaches in order to prepare the number and quality of teachers required to confront the global challenges facing humankind. Pre-service and in-service teacher-education programmes must not only be based on the state-of-the-art knowledge derived from contemporary educational research and educational practice, but must also prepare teachers capable of grasping the opportunities presented by the new information technologies. The teachers we educate must also be adaptable — able, for example, to up-date their programmes and teaching to include the latest information on global changes. Are we succeeding in meeting this challenge? Do the teacher educational programmes in your country and institution include material on the contribution of teaching to equitable development, peace, human rights, democracy, environment and population?

My fourth point concerns UNESCO and is thus addressed very pointedly to my colleagues and myself as well as to you, our guests at this Conference. UNESCO was set up *"to represent those who teach."* It was intended to be a *"home"* for professional teachers and teacher educators. It was to be your voice, to express your concerns and interests. As I have already suggested, it is not only out of respect for teachers, but, more generally, out of concern for education that UNESCO is called upon to question policies and practices which restrict educational opportunities or endanger the quality of teaching or the status of teachers. It is our duty to make the research on issues of teaching and teacher education more widely known and to promote the recognition of teachers. Are we doing this adequately? This is not a rhetorical question, but one on which we shall be attentively listening for your answers and judgments and, above all, for your suggestions on how we can serve teachers and teacher educators better.

Allow me now to return to the four points I have just raised and suggest why I consider each of these to be of special importance.

The emergence of issues concerning teachers and their training. This seems certain. The central role is now being given to education in tackling the problems of development, environment, population and racism. Belated and often begrudging recognition is being given to the fact that improving the coverage and quality of education is impossible without increasing the number of teachers and the quality of their training. To be certain, the priorities differ from country to country and region to region. In most developing nations, coverage is still the key issue. This is especially so in the wake of the **World Conference on Education for All** which, as you are aware, took place in Jomtien, Thailand in March of 1990. At that Conference, the world community pledged itself to strive to make **Education for All** a reality, and to begin by making basic education available to all children before the end of the century. UNESCO, as a sponsor of that Conference and as the organization of the United Nations system dedicated to the promotion of education, is deeply committed to this objective. The prevailing situation is deeply worrying and unacceptable: there are over 100 million children between the ages of six and eleven who are not enrolled in school and many millions more who attend badly equipped schools and often drop out after only a year or two. Nearly two-thirds of these children are girls. And, of course, the situation is not static. Population growth in the developing nations remains rapid. In South Asia, for example, the population is growing at over 2 percent per year whereas in sub-Saharan Africa the rate is over 3 percent, a rate which causes a population to double in less than 25 years. Achieving **Education for All** under these circum-

stances will call for urgent and, in many cases, unconventional approaches. But whatever the solution attempted, more teachers are going to be needed. At least 9 million more teachers will be needed to achieve **EFA** primary education targets in developing countries alone.

Even as we struggle to expand coverage, we have to bear in mind that education by its very nature is a qualitative enterprise. It is not the fact of schooling that matters, but what takes place in school. Hence, even under the most severe conditions, we have to keep quality in mind. Yes, for a time, we may have to accept compromises. We shall also need to test bold new approaches. Malawi, to cite only one example, faces the problem of a severe teacher shortage, untrained teachers, and a pupil-teacher ratio of 63:1. To cope, with the help of UNESCO and the World Bank, it has introduced a distance teacher-training programme of 36 weeks. The training programme is based on carefully designed manuals and interactive media, but it also shows teachers how to make use of the local environment in teaching and innovates as well by recruiting experienced teachers and supervisors as teacher trainers.

The best education, the kind we want for our own children and should want for all the world's children, occurs when a committed, competent and caring teacher interacts directly with an inquisitive child as he or she begins the journey along the road to learning and adulthood. In the industrialized countries, in many of which education has been universal and compulsory for a century or more, improving quality is the overriding challenge and concern. How this can be achieved is often a matter of debate and heated controversy, which brings me to my second point: **the need to develop realistic expectations of what teachers and schools can achieve and to foster a climate of confidence in which good teaching and good education can flourish.**

Ironically, a growing awareness of the importance of education has too often resulted in attacks upon those primarily responsible for providing it: teachers. The problems and issues are not new, but the stakes are now higher. It is no secret that in most countries teaching has been and remains a marginalized profession. It aspires to the same status as the established professions, medicine and law, but its claims are not recognized. The reasons for this are rooted in the history and circumstances of the teaching profession. Of special importance is the fact that teachers have usually been public employees rather than independent professionals. That has implied that the conditions regulating the profession are usually set externally rather than internally. This has limited the autonomy of the profession and means that the demands of the state tend to take precedence over those of the client, that is the student. This is an old and much discussed problem. What is new is that teachers are no longer seen only as a special class of civil servants living off the largesse of the state, but are increasingly perceived as the occupational group which holds the future of the nation in its hands. Normally, this should provide the opportunity to raise the status of teachers and to establish programmes of professional development, which has been the dream of so many of us for so long.

Unfortunately, this is not happening. Instead of being seen as the potential saviours of the educational system, teachers have become the scapegoats for its failures. A dispassionate analysis would, in most cases, demonstrate that the alleged "failures" of the teaching profession merely reflect unrealistic expectations. Among political authorities in many countries there is a reluctance to recognize that there is a serious under investment in education, that through short-sighted budgeting we are cheating our youth and undermining the future of our societies. Instead, we ask ourselves why what seems to governments to be a sizeable investment in education is not yielding the hoped-for results. I do not have time to explore this important issue, but part of the answer **is** that education is more difficult and challenging today than ever before. School failure is not a random phenomenon. Schools fail where society fails. Schools, as presently structured, cannot cope with the failure of homes to provide essential socialization and support. In fact, in many countries, the schools that fail are those confronted with overwhelming challenges: overcrowding, understaffing and a shortage of equipment and supplies. The ghetto or shantytown school does not succeed because the odds are systematically stacked against its success. Its failure is not surprising, it is to be expected. What needs to be explained is not why such schools fail, but why society permits conditions to exist which exclude any realistic possibility of success. Another aspect of the problem is that our expectations are higher today than even before. Schools are expected to teach more and teach better than ever before.

In one report after another dealing with needed reforms of education systems, the analysis of causes and cures focuses on teachers. This is not surprising, but must be undertaken with an informed

understanding of the conditions and constraints under which teaching takes place. **A Nation at Risk**, a report on schooling in the United States, for example, sharply criticizes the manner in which teachers are trained, recruited and rewarded.

Commonly, one reads that we are not recruiting into the teaching profession the scholars and leaders we need, that the standard of teacher-education programmes is low, that they are not costeffective and fail to prepare trainees for the classroom life that awaits them, that curricula and approaches used in teacher-education programmes are dominated by radical and progressive ideologies. Certainly, such an extensive catalogue of accusations must contain at least some truth, but how much? In most cases, the results of independent research do not support such assertions. But let us not make the mistake of assuming that these reports are only idle words. They are not. Governments act upon such recommendations. In the United States alone, since 1980 there have been more than 1,000 pieces of legislation adopted on teachers. Many states have passed tougher requirements for admission to teacher-education programmes, and more courses in the liberal arts and fewer in methods are now commonly required. I do not have time here to evaluate such changes. Some are doubtless valuable; in other cases, the verdict is less certain. Each reform must be carefully evaluated on its own merits and reviewed in the light of results actually achieved. In education, as elsewhere, noble intentions are no substitute for actual results.

The point I wish to make is that one need not have recourse to conspiracy theories to account for the failure of schools. In the inner cities, to cite but one situation, schools must struggle to teach in an embattled society. Homes disintegrate, poverty and malnourishment take their toll, crime and drugs convulse the community. These are not conditions conducive to education. But even in wealthier communities favourable conditions for education are not guaranteed. Neatly trimmed yards and swimming pools are not reliable indicators of positive attitudes toward education. Indeed, they may suggest societies in which the appetite for material goods has been overindulged and that for learning put on short rations. In brief, explaining school success or failure is complex, not simple. It may soothe the conscience of politicians to imagine that the problem is not social neglect, but the failure of programmes and institutions of teacher education or the inadequacies of the teachers themselves. Yet, while I have seen in the popular press repeated reference to "radical" training programmes for teachers, I have thus far not encountered any in my professional life. While it is always dangerous to generalize, I have a very strong impression, born from more than twenty years of work in teacher education in Australia and elsewhere, that teacher-training programmes, far from being radical, tend to be deeply conservative in matters both professional and political.

What these misunderstandings reveal, and this seems to me a very important point, is that teachers and teacher educators are not getting their message and their cause across to the general public. And both we and our societies are paying a high price for this failure. By allowing the blame for school failure to be pinned upon teachers, we have encouraged damaging attacks upon and criticism of them. These have taken a heavy toll. The profession has become defensive and demoralized. Its appeal and prestige have been reduced. Sadly, at the very moment when the need to recruit and retain able and committed teachers is greatest, the chances of doing so are being endangered by ill-conceived criticisms and attacks upon teachers.

What is at stake is not only our professional reputation, but also the progress of education upon which, to a very large degree, the well-being of society depends. It is not only in our interest, but also in the public interest that teacher-bashing be brought to an end, and a fruitful and thoughtful exploration and discussion of the problems and requirements of education be opened.

This brings me to my third point, namely that **we as teacher educators must be prepared to modify our practices and approaches in order to respond to the global challenges confronting humankind by preparing the kinds of teachers that the future will require.** We cannot and must not develop a "bunker mentality." We have to remain open to changes and challenges. We have no reason to fear. Any thoughtful inquiry into the situation of teachers is very likely to recommend the very changes we have been seeking. If I may, once again, cite an Australian example, the Schools Council, following an inquiry into teacher quality in the United States, the United Kingdom and Australia, stressed its conviction that *"it is essential that all governments in Australia recognize that in any strengthening of Australia's schools the quality, morale and status of the teaching services will be a key, if not the most important element. The*

council therefore recommends that the Commonwealth Government accords the highest priority in its policies and actions to this area." This recommendation has provided valuable and much needed support to teachers and teacher education in my country.

There is, to be certain, no royal road to the improvement of teaching or the reform of schools. But we know well what the problems are and what has to be done to address them. As Kerr points out in her very thoughtful and convincing analysis, excellence in teaching can hardly be expected of someone who has an anemic understanding of the subject matter to be taught, the nature of teaching and learning, the available means and resources, the particular learners in the class and the context. Excellence can also hardly be expected of teachers lacking in communication, management and social skills, as the research on teacher effectiveness shows. Our research and experience suggest good teaching is created by good teachers, that is, teachers who are well-educated, particularly knowledgeable and interested in the subjects they teach, committed to their profession and to enrichment of human minds and lives, and skillful in the art of fostering enthusiasm and learning. Excellent teachers are those committed to the systematic questioning and study of their own teaching and the exchange of ideas and insights.

The reforms and changes in teacher education we urgently require — and which both duty and self-interest cause us to seek — are those designed to produce the type of teacher and teaching which Kerr cites. These are measures which will encourage the recruitment of the most able and committed candidates into the teaching profession. The educational content and methods required are those which will produce the knowledge, skills, behaviours and values which are the hallmark of outstanding teachers. The necessary conditions of service are those which reward excellence and encourage professional development. In each society, the exact measures which can produce such results may, of course, differ. We must also realize that we are unlikely to reach the "promised land" in a single bound. The speed at which such reforms can be introduced will vary considerably depending upon the state of the educational system, the nature of the society it serves and the health of the economy from which it draws its sustenance. But the direction in which teacher education must move is clear. As professionals, we should set forth in that direction with all deliberate speed, and an unwavering commitment. We are not the opponents of reform. We are not a vested interest with privileges to defend. We are the vanguard of progress, the most forceful and articulate advocates of meaningful change in education.

My last point is more immediate and specific than the three previous ones. **It concerns how your interests, those of teachers and teacher educators, are served by UNESCO.** As the organization within the United Nations system charged with responsibility for education, UNESCO recognizes that the progress of education depends, in very large measure, upon the progress of teachers and teaching. Hence, your organization and ours share a common concern for and commitment to education. It is through this shared commitment that we are linked to one another. Briefly put, your work is also our work. To the extent that you succeed, we also succeed.

How do we seek to meet this responsibility to you and the teachers with whom you work? First, our organization is an active advocate of education. We endeavor to work with energy and imagination to keep education where it belongs, at the top of the agenda of governments around the world. Our commitment is, in particular, to those who are least served by education. That is why we attached such importance to **International Literacy Year, 1990**, for which UNESCO was the lead United Nations agency. That is why we pursue with energy the implementation of the objective concerning **Education for All** established by the World Conference. In this connection, I would be interested in knowing how many of your institutions have revised their basic teacher-education programme in the light of the principles set out in the **Jomtien** documents. I would also wish to extend an invitation to your institution to join with UNESCO in developing and testing regional training packages based on the materials produced for the **World Conference on Education for All** and **International Literacy Year.**

While efforts to reform education "on the backs of teachers," through reduction of salaries, allowances and opportunities for professional development, are short-sighted, they are unfortunately not unknown. As many of you are aware, the joint **ILO-UNESCO Recommendation** concerning the **Status of Teachers** deals not only with issues of teacher qualifications and education, but also with the conditions of service for teachers. UNESCO cooperates with the International Labour Organization in the application of this recommendation. We also seek to examine, not on a case-by-case basis, but in a broader context, the impact of policies such as those associated with "structural adjustment" on the remunera-

tion of teachers. UNESCO is deeply concerned that, in many developing nations, the purchasing power of the salaries of teachers has declined dramatically. In some countries, teachers are forced to take second and even third jobs in order to ensure the survival of their families. This may, strictly speaking, be an economic, not an educational, issue, but it is one that has a direct and disastrous bearing upon the quality of education being provided. UNESCO does not possess the power or resources to remedy such problems, but it has the means to at least make them known. Awareness alone is not an answer, but if the world is looking, answers may be found or further deterioration of the situation avoided.

As many of you may be aware, the Director-General is exploring the possibility of initiating an **International Teachers Day** and **UNESCO Teacher Awards.** UNESCO's purposes in proposing this are, first, to focus international attention on the contributions which teachers make to society and, second, to underscore its allegiance and support for the teaching professions. UNESCO, of course, also seeks to extend practical assistance to the education of teachers through the production of training packages on such key issues as **Education for All**, special education, the role of the head-teacher and ways of coping with the challenges of the multiple-grade classroom. For the future, we are also examining the possibility of extending the recently launched **UNESCO Chairs** — an activity, within the **UNITWIN Project,** which enables an eminent scholar to visit a strategically placed institution for one or more years — to include appointments in teacher education. In particular, we look to cooperation with **ICET,** using the ***World Directory*** to establish teacher-education networks within the framework of the **UNITWIN Project.**

Finally, I would note that your presence here is a source of enrichment and inspiration to UNESCO. We are closely following your proceeding in order to identify areas in which UNESCO may be able to contribute to your work. Our resources, as you and we are painfully aware, are extremely limited; but good, strong ideas can often fly on their own or can be put into orbit at little cost to our programme. And as we listen, we shall be thinking not only of the months ahead, but of future biennia or, as we at UNESCO measure time, new C/5s, the document which contains our biennial programmes, and C/4s, our medium-term plans. We shall be listening with the conviction that the future of education, indeed the future of society, will depend upon the work of teachers and the educators who prepare them to confront the challenges and responsibilities of their role.

Allow me to conclude by appealing to you and, through you, to teachers around the world. UNESCO is deeply committed to ensuring the right to education. **Education for All** is for us no empty slogan, but a fervent hope and a firm commitment. But **EFA** cannot be achieved, or even approached, without the commitment of teachers to search for and find new solutions that can bring education within the reach of all. We need your help, we need your thoughts, we need your action. That is why we so warmly welcome you here and will listen so attentively to what you have to say and suggest. **Education for All** is a goal which must command the allegiance of all of us. It calls for and requires a grand alliance aimed at an objective no less ambitious than that of changing the world through education.

What is at stake can, I think, be inferred from the words of a man who, early in the sixteenth century in an era which, much like our own, was beset by change, was called upon to reflect upon the place of education in the life of his nation. "*The prosperity of a country depends,*" wrote **Martin Luther,** "*not on the abundance of its revenues, nor the strength of its fortifications, nor the beauty of its public buildings, but it consists in the number of its cultivated citizens, its men of enlightenment and character.*" If we were to edit this statement for our own era, we might wish to add different and new vanities to his list of things that don't count for much in the long run; we would certainly want to change the gender references to include women of enlightenment and character as well as men, but the essential message would, I believe, be as true today, if not more so, than it was nearly 500 years ago when it was uttered. In a world of uncertainty, education is one of the few things upon which we can count. In the final analysis, it is what gives an individual or a society, including our global society, the potential both to cope and to prevail.

Plenary Address, World Assembly Topic Three

THE IMPACT AND ROLE OF SCIENCE AND TECHNOLOGY ON EDUCATIONAL CHANGE

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Let me begin by acknowledging that all over the globe there is concern about the quality of science education. Certainly we in the U.S. share that concern. The goal is not to have a research chemist on every block but to have a scientifically literate citizenry not baffled by advances in science and technology. Today I want to talk about what we need to do to reach that goal.

My focus is on one very exciting and positive development: we are seeing a revolution in the way people think about teaching and learning. And that revolution is changing our mode of instruction.

For a long time people thought of children as empty vessels that the teacher must fill with knowledge. But today, advances in cognitive psychology — the science of how people learn — show us that children are really like natural scientists bent on making sense of the world. They are quite capable of sophisticated thought processes from the beginning of their formal education. In fact, they truly learn only when they construct their own knowledge. Trying to stuff knowledge into their heads doesn't work — especially if we want them to think and be able to solve complex problems. And nothing is more important in light of the global challenges facing us today.

The approach to learning that I am describing is known as constructivism. For science education it means this: children learn science through the process of doing science. No longer can teachers teach almost solely through lectures. This transmission mode does not produce the necessary kinds of understanding, even when aided by beautiful graphics or high-tech videos. Children learn science by moving from concrete experience to abstraction, by hands-on activities, and by creating their own models and theories.

Constructivism does not call for an end to direct instruction. It does not mean there will be no more reading or learning of facts. What it does say is that knowledge is best acquired through learning experiences that are connected to things the child already knows, that engage the child socially and emotionally, and that harness the child's natural curiosity to the task at hand.

So the vision of science classrooms I offer today is student-centered. Instead of focusing on the teacher laboring to convey knowledge to passive "vessels," we shift the spotlight to the child as an active seeker of learning. At first blush, this may not sound radical. But for many, it is an alien kind of pedagogy. And make no mistake, it implies changing everything about schooling — from curriculum to assessment to our notions of how to use technology. I want to look at those things today. But most important, I want to talk about the profound implications for the way teachers teach. Right now most science teachers are dispensers of information. Under the constructivist approach, they become coaches of the discovery process.

If this is our vision, how do we get there from here?

In addressing that question, I'll be speaking largely from the perspective of the United States, and particularly California, a national leader and the state where Far West Laboratory is located.

Let me take a moment here to tell you about Far West Laboratory. We are one of 10 regional education laboratories affiliated with the U.S. Department of Education. Together the laboratories form a na-

tional research and development network unique in the world. Our major role is to act as a bridge between research and practice. Teachers willing to experiment need to know what research has discovered about better ways to motivate students and engage them in learning. We get such information into their hands in forms they can readily use. We interpret and distill research, document exemplary practice, and share this knowledge through workshops, seminars, conferences, and publications that are easy to read and geared to practical needs. But we don't just disseminate good information. We help educators use it by providing technical assistance and in-service workshops. For example, we may help a group of schools develop curricula to meet state standards. Or we may help their teachers learn to apply new classroom strategies.

Our current program of work includes a number of science-related activities. For instance, we are involved in an inter-laboratory initiative that is disseminating science and math teaching information throughout the United States and connecting districts with the best available resources. We're evaluating the Galaxy project — an exciting new national experiment in using technology to teach conceptual science to our country's least advantaged students — and I'll talk more about that later. Because of our commitment to international learning together, we will also soon sponsor a workshop for U.S. educators on what's happening in science teaching in other nations.

The Vision

Now let me go back and give you a picture of what I mean by a child-centered science classroom. It is a place where learning is an activity, not a spectator sport. The whole environment helps students build their understanding of the natural world and its connection to issues as global as technology and as close-to-home as tomorrow's weather. This classroom teams with interactions. Students often work in cooperative and collaborative groups. Games, simulations, and experiments abound. Discussions are often led by the children themselves. The teacher's role is not to direct but to orchestrate: to pose provocative questions; to give students time to reflect on their answers; to arrange and combine techniques and resources in ways that allow students to build on their different prior experiences to construct meaning.

Students plunge into hands-on, interdisciplinary projects that foster deductive reasoning and creative thinking. Lessons incorporate concern for ethics and society. For example, primary school students may grapple with a business owner's toxic waste dilemma. They compile evidence from libraries, site visits, computer data bases, or interviews with experts and concerned citizens. They draw from lessons in economics, math, and government. Or high school students learning about civil engineering might form design teams that simulate construction of a local dam. Their project would include doing an environmental impact study.

Changing Curriculum

So this is the vision, and it's an approach that can work anywhere in the world. Classrooms can be student-centered, active-learning environments whether you're in a huge metropolis or a village with only three teachers. But, again, how do we reach this vision?

One bridge is curriculum. Traditionally dense with trivia and tidbits, a science curriculum that instead focuses on themes and in-depth exploration fosters constructivism. Many U.S. schools are moving in this direction. In California, the new statewide science curriculum can be summed up in a single phrase: "Concepts, not factoids." The message is no more cramming unrelated facts and figures into kids' heads. This wastes students' time, erodes their motivation, and does not result in scientific literacy. California's science education director, Tom Sachse, likes to quote the French mathematician and scientist Jules-Henri Poincare, who said: "Science is constructed of facts, as a house is of stones. But a collection of facts is no more a science than a heap of stones is a house."

Science should be taught as a set of grand principles and a way of thinking. Lessons should build a cognitive structure or intellectual ladder that kids can then climb as they reach for ever higher levels of knowledge. So California's new curriculum stresses problem solving and the scientific method over memorization. It spells out six themes or "big ideas" under which to teach science units throughout the grades, beginning in kindergarten, with each grade's content feeding into what's taught in the grade that follows.

The goal is to give children an overall picture of science as an interrelated body of knowledge with clear and intriguing ties to their everyday world. And the idea is that any effort to enhance science achievement must start early. We need to show our youngest students that science can help satisfy their boundless curiosity about the world. By the age of 11 or 12, science is not "cool." If you wait until then, you've lost them.

Under the theme of energy, for example, elementary school students discover that light, sound, and heat are all forms of energy related to one another. They learn that the energy in a light bulb is the same as the energy they learn about in life science that makes the food chain work. Under the theme "patterns of change, elementary students build models that help them see that fast and slow forces are causing constant earth shifts, that rocks and landforms are products of these forces, and that the earth has evolved over geologic time. At the end of a unit the child may well have memorized three kinds of rocks. But what's important is, he'll know the relationship between rocks, minerals, earthquakes, and volcanoes.

Changing Assessment

Of course, if we want our science programs to be structured in this way—to accommodate how kids really learn — we can't measure their learning in the same old ways. A truism in education is, "What you test is what you get." To get constructivism, we have to change our tests. We have to use assessment as a bridge. When we change the tests, teaching and learning change to accommodate the new assessments.

If we test vocabulary and factual knowledge, that is what teachers will teach and students will learn. But if our goals are scientific literacy and the ability to make sense of the world, we need tests that measure thinking skills and the ability to solve problems.

In the United States, we are seeing a general move away from the multiple choice tests for which we are famous. We are developing performance-based assessments-tests that measure not what students have memorized but what they know and are able to do. This form of evaluation is not new in England. And we are finding, as the English have found, that it is not only a better measure of learning, but in fact a powerful tool for improving teaching and learning.

In science, the United States is closing in on national standards for student performance at key points in their school careers. This raises the worry that national standards will be too restrictive. But we are weighing this against the hope that such standards will be an important lever to spur science education reform. California and a number of other states are now experimenting with assessment techniques that more fully tap students' abilities to grasp science concepts and cope with technological issues. An example of such a technique is using open-ended questions such as, "What are the pros and cons of offshore oil drilling?" In answering this question, students are asked to argue both sides of the issue.

At Far West Laboratory right now, we are working closely at the national level, with several state departments of education, and with numerous schools and districts to develop and try out performance assessments. For example, one major area we're focusing on is how best to use portfolios to measure student progress in a range of subject areas, including science.

Instruction: The Key Challenge

But now let me turn to the heart of the matter: instruction. The most critical bridge to the constructivist vision is changing the way teachers teach. We simply have got to do something about the way we prepare new teachers and retrain and renew those with experience.

We look jealously at countries such as Japan and China where a typical class already looks much like the ones I talked about earlier. James Stigler and Harold Stevenson, whose well-known book *The Learning Gap* documents their studies of education in Asia, say that the typical Asian class consists of coherent lessons presented in a thoughtful, relaxed, nonauthoritarian manner. Teachers frequently rely on students as sources of information. Lessons are oriented toward problem solving rather than rote mastery of facts and procedures. There is frequent verbal interaction as the teacher attempts to stimulate students to produce, explain, and evaluate solutions to problems.

Stigler and Stevenson point out that one reason why Asian teachers succeed is because their systems for teacher training give them ongoing opportunities to experience the kind of instruction they are being asked to provide. This is absolutely crucial. Certainly, it's common sense. How can teachers replicate a model they've never seen or experienced? How can they set up classrooms that encourage inquiry, if they themselves have never been encouraged to inquire? How can they foster student research if they are not researchers themselves?

To reach our goals in science, our teachers in the rest of the world have two tasks. First, they must continue to develop knowledge of science content. I know that this is a major hurdle, especially at the elementary level where many teachers have no science background at all. Second, teachers must continually analyze and reconstruct their idea of pedagogy — how to teach. Particularly, they need to focus on how to teach science, and that includes incorporating technology's role in instruction.

So again I ask the question, how do we get there?

Our old style teacher training and in-service techniques, based on the transmission mode of teaching and learning, don't work. We need a new mode. The good news is that some very promising new approaches are moving us in the right direction. Let me talk about three of them.

The first is the use of case methods, or discussion-based teaching. This is an approach I'm very excited about, and one that we at Far West Laboratory have helped to pioneer in the United States.

Educators have long been critical of academic programs dominated by what Stanford University's Lee Shulman calls the "twin demons" of lecture and textbook. Just like the kids they were preparing to teach, our teachers-in-training have been passive recipients of what they were told in class. As Shulman puts it, "Existing pedagogies were breeding 'inert ideas' fated to clog and suffocate good minds." More than that, the theories teachers learn at the university seem unrelated to the dilemmas they later face on the job. They also don't help develop the pedagogical content that teachers need to plan and conceptualize appropriate units of instruction. For both pre-service and in-service teacher instruction, cases are a better way.

What do I mean by a case? Cases are candid, dramatic, highly readable accounts of teaching events or series of events. They offer a problem-based snapshot of an on-the-job dilemma, and they are consciously designed to provoke discussion that is engaging, demanding, intellectually exciting, and stimulating. Some are written by researchers. The cases we are known for at Far West Laboratory are written by teachers themselves.

Cases are proving valuable for a number of reasons. Because they tell vivid, moving stories, they give life and staying power to concepts. Teacher educators, mentors and staff developers are using cases to trigger discussion about why a given strategy works or doesn't work. Beginners learn from experienced teachers how to create lessons and environments that promote learning. They learn how to frame problems, interpret complex situations and identify decision points and possible consequences — that is, they learn to "think like a teacher."

But the value of cases goes further. One reason Stigler and Stevenson say that Asian class lessons are so well crafted is that there is a very systematic effort to pass on the accumulated wisdom of teacher practice to each new generation of teachers and to keep perfecting that practice by providing teachers with opportunities to continually learn from each other. Well, we're finding that cases are helping us in the United States accomplish those same things. By freezing teachers' experience, cases capture and pass on to others the "wisdom of practice." And experienced teachers who meet regularly for case-centered discussions form a "community of learners" who reflect and grow together professionally.

Let me give you an example from the work of Carne Barnett, one of our project directors at Far West Laboratory. Barnett has developed a set of mathematics teaching cases written by middle school teachers and dealing with fractions, decimals, ratios, and percents. As part of her joint project with a school district in the San Francisco area, she has been investigating the use of such cases as an effective methodology for examining teacher beliefs and behaviors. After meeting monthly for seven months with a group of 20 teachers, she carefully analyzed how their thinking had changed. Her findings show three stages of development. In Stage 1, teachers tell students how to do things the "right" way. They conceal

or ignore "wrong" methods, give praise for "trying," don't ask students to explain their thinking when their answers are wrong, and view errors as something to fix or avoid. By Stage 3 the same teachers refrain from telling students which approaches are right or wrong. They ask students to explain what they've done, and use student thinking as the springboard for discussion and debate. Risk-taking is encouraged. Errors are viewed as opportunities for learning and critical thinking.

In short, through critical analysis of teacher-written cases over time with their colleagues, these teachers had constructed new beliefs for themselves. Through discussion of teaching situations that mirrored their own, they reflected on their values, attitudes, and assumptions and wrestled with the disequilibrium this created. In the process, they switched their mindset about teaching and learning — from believing that they were filling "empty vessels" to believing that the educational goal is critical thinking and new knowledge construction.

These cases happened to be in mathematics. But the same process of case-based, constructivist professional development can occur similarly in science, and we are working to help see that it does.

A second promising approach in teacher development is the professional network. In such networks, teachers link with each other, often by subject area, to form a professional learning community. Like Carne Barnett's math teachers, teachers in these networks brainstorm and reflect with others who are struggling just like they are to learn new material and try out different teaching strategies. Networks, in essence, offer a way for teachers to experience growth in their careers through deepened and expanded classroom expertise and new leadership roles.

An excellent example is the California Science Implementation Network, known as CSIN. This network was launched by the California Department of Education to link elementary science teachers throughout the state so that they could work together to implement the state's new science framework. The framework maps out what students should learn. But it's up to the individual schools to make it happen. Science teachers must take the lead, and it's a huge job because it often means changing the school's entire way of operating.

Under CSIN, science teachers first come together to receive special training in the new thematic and constructivist approach. For many of them, just being with a large number of other like-minded science enthusiasts is exciting. But because CSIN teaches constructivism by modeling it, they also get the experience of helping shape their own learning — a privilege that's absent in traditional in-service. So these teachers feel empowered. They learn techniques to use back at their schools, ranging from peer coaching and craft sharing to how to motivate colleagues, navigate school district politics, and overcome roadblocks. But most important, in a way parallel to that of the teachers in case discussions, they reflect on their own practice. And they begin to change their ways of thinking about teaching and learning.

Back at their schools, they become change agents who lead whole staffs through a process of reframing their beliefs about science and how to teach it. A common problem is that many elementary teachers fear teaching science; they simply don't know the content. CSIN teachers help the school staff identify specific knowledge gaps, then figure out how to fill them. Ideas they may never have thought of — such as running regular evening science "academies" in rural areas far from universities—are just a phone call away because of CSIN.

But the CSIN teacher's job goes beyond science. It entails encouraging school staffs to engage in such things as teamwork and shared decisionmaking, activities that rock the boat of traditional practice and make business as usual impossible. That's exactly what the state wants to have happen. So in California, science has become a lever for enacting systemic school reform. Though CSIN teachers feel at times that they are in the eye of a storm, they also feel energized and renewed. Their careers have taken on exciting new dimensions as their leadership roles have grown. And as researchers Ann Lieberman and Milbrey McLaughlin point out, by expanding the pool of teachers capable of providing leadership, networks like CSIN contribute to the professional lives of all teachers.

That leads me to the third new approach to professional development: action research. By this I mean the practice of teachers systematically recording what they do and how students respond. This is a previously untapped form of educational research. Often in collaboration with a college or university researcher, teachers undertake to account for a phenomenon in their own classroom or school in a way

that no outside researcher could possibly do. In the United States, we are seeing the beginning of a teacher-research literature, as teachers write up their findings on teaching and learning. And action research networks are developing among teachers within a school district or even across long distances.

Several of our projects at Far West Laboratory are focused on action research. Certainly our teacher-written cases are exactly that. As Lee Shulman points out, learning from experience is not easy for teachers. It requires that they find time, in the midst of the "booming, buzzing confusion" of their daily work lives, to look back on their teaching and its consequences — a luxury they simply don't often have. The learning that does occur is rarely articulated and shared with others. In fact, it is often forgotten, year-to-year, by the teacher who experienced it. By writing a case, the teacher helps halt "epidemics of pedagogical amnesia." But he or she also goes beyond recalling events to imposing some order on their chaos, pondering the reasons behind one's actions, and passing this reflective wisdom on to others. Other teachers not only then have a springboard for deliberation, but are often inspired to write cases of their own.

The Role of Technology

So where does technology fit in with all this? Technology is a tool — a very powerful and often fabulous tool — that can help us make progress in all the areas I've been talking about.

As everyone in this room knows, we've had an explosion in information technology. For example, we can do astounding new things with computers today. And we can very comfortably predict that within 10 years, computers will have 100 times the power they have today, in terms of speed and information processing. Nobody knows exactly what the implications of all this will be for education. But to believe there will be no impact is absurd.

So here sits this enormous potential. And we want to harness it to help solve the science teaching problems I've been talking about: that most teachers are not well educated in science; that even those who are can't possibly keep abreast of its rapidly evolving content; and that content issues notwithstanding, teachers have not been trained to teach science in ways that accommodate how students actually learn. Our challenge, then, is to use technology to help remedy some of these deficiencies.

It used to be that a student's only learning resources were those found within the four schoolhouse walls. If the school had a mediocre library, too bad. If the textbook was out of date, too bad. If there was no science lab, too bad. And if the teacher was shaky in science, too bad. Technology has the potential to change all that — to expand the teacher's knowledge and enhance student learning by bringing the world to the child and taking the child out into the world.

In the United States today, many projects are underway that are designed to capitalize on this potential. Let me give you some brief examples of what's going on in four general technology areas: computers, distance learning, networking, and interactive multimedia — unquestionably the most advanced and dazzling of today's technologies.

Let's start with computer technology. The computer's marvelous potential as an educational tool is being tapped in the United States, though the idea that there is a computer on every desk in U.S. classrooms is a misperception. With computer prices dropping, that may one day be true — in many places around the world. And that will be good for teaching and learning. Because at the very least, computers offer such things as access to far-flung data bases. A rural child can pull information from a university library 1,000 miles away. High school students and teachers can conduct high quality scientific investigations with the aid of supercomputers and associated visualization software tools. Add telecommunications technology, and they can consult with distant scientific advisors. Computer simulation programs also allow kids to conduct otherwise dangerous experiments right on their computer screens. For example, young children can test chemical hypotheses with simulated test tubes on-screen, suffering only disappointment if their experiment explodes before their eyes.

Then we have distance learning. Many small rural schools and poor inner-city schools cannot attract or retain specialized teachers in important subject areas, such as science. Distance learning projects — many funded through the U.S. government's "star schools" program — use satellite, electronic or computer technology to connect an educator with students in distant classrooms.

An example is the new Galaxy Classroom program that, as I mentioned earlier, Far West Laboratory is going to evaluate long-term. Developed by Hughes Aircraft and funded in part by the National Science Foundation, Galaxy is designed to provide high quality science and language arts teaching to "disadvantaged" schools throughout the United States. A high-powered satellite will soon bring television lessons into very small earth stations, eventually to be priced as low as $300 per school. Students will interact with teachers and other students throughout the country through computer and facsimile links back to the satellite. What's important about this effort is that the learning experiences are being designed around a constructivist approach, designed to stimulate inquiry. Further, they are being tailored specifically to American poor and disadvantaged populations — for example, schools that are predominantly African-American or Hispanic in the inner city, Native American or Caucasian in remote rural communities, and Asian-American. The program is especially designed to have an impact on these children's attitudes toward science, to excite them not only about the subject matter, but about schooling in general and most importantly about their own capacity to do well in science. If successful, it will help fill a widespread need.

Related to distance learning is networking technology, usually a combination of computers and telecommunications equipment. Networks can gather geographically distant students into a single community of learners. Take KidsNet in the United States. Formally called the National Kids Network, this is a collaboration between the National Geographic Society and the Technical Education Research Centers of Cambridge, Massachusetts. Last year, students at 200 participating schools around the country, working in teams, took water samples from rivers, lakes, ponds, fields and water taps. Back in the classrooms, they measured the pH levels, then entered the results into a specially designed software program that allowed the class to average results and telecommunicate them via modem to a central computer.

The next day, results from all sites were fed back to and printed out from each classroom computer. With special mapping software, the students generated color-coded national maps of acid rain levels. They discussed their findings and communicated their analysis, again by modem, to an expert at the National Oceanic and Atmospheric Administration. That scientist in turn wrote back and compared the students' findings to current scientific analysis. Finally, the kids used desktop publishing to produce a newspaper reporting their findings for their parents.

In this project, kids are not passive recipients of knowledge, but active participants in its development. Not only do they know as much or more about acid rain as their peers who have only heard a lecture or read about it in a textbook, but I guarantee you, it means more to them. And if indeed, a central educational goal is to prepare students for meaningful exploration, then programs like KidsNet are especially important.

That brings us to interactive multimedia, where we find technology's glitz. Let me tell you about "virtual reality display systems," for example. For this, the student puts on special goggles, earphones, and a glove called a "position sensing input device." He feels as if he has been transported into another three-dimensional space. He may feel, for example, as if he has become a deep sea diver. He can explore a reef, navigating through it with arm and hand movement. Or he can enter the world of a carbon atom, stepping from molecule to molecule, or walk on the surface of Mars — all from the safety of his classroom seat.

Spectacular? Without a doubt. And I can tell you that it will be a while — a very long while — before virtual reality systems are common in classrooms. They are far in advance of what any of us now can use. But we have to look at such visions to understand what the future can hold. We will limit ourselves if we see only what we have right now.

On the other hand, what we do have right now in 65 percent of elementary school districts in the state of Texas is pretty impressive. It's a laser disc program called "Windows on Science." In this system, a teacher talking about geological change can wave a wand above a bar code in her teaching manual, adjacent to the text on lava. On a video monitor her students then watch close up as an island volcano erupts. When the teacher moves the wand to a different text section, the island volcano disappears, replaced by images of lava flowing from deep sea fissures.

In its simplest form, "Windows on Science" requires a laser disc player and video monitor. But add a computer and the program becomes interactive, with students able to determine what information

they'll receive on the monitor. So, while studying volcanic eruptions, a student might instruct the computer to display that area of the volcano where the lava is only 200 degrees, followed by the area where the molten rock is 2,000 degrees. She can also ask to see related graphs, or use the computer to make her own.

So as you see, we have an exciting set of opportunities. Technology does indeed have the potential to help us capitalize on what we now know about how kids learn. But, again, it's a tool, guided by the teacher who uses it. And so far, even in schools equipped with computers, instruction remains largely unchanged. Classroom computers are overwhelmingly used as electronic worksheets — stand-ins for the old drill-and-skill ditto sheets many of us grew up with.

Used constructively, technology can help teachers shift from whole-class to small-group instruction, from lecture and recitation to coaching, from having all children learn the same thing at the same time to more individualized teaching. But the teacher must be willing and able to alter his or her role. Otherwise, even the most creative technology programs will remain underutilized.

Creative and useful application of classroom technology requires good planning, adequate technical backup and, above all, extensive teacher training. Herein lies the great challenge for those of us here today: to provide teachers with the kinds of learning experiences that will permit them to incorporate whatever technology they have available — whether radio, computers, or the latest in interactive multimedia — into hands-on, child-centered science classrooms.

Especially, we need to ask ourselves today how technology can be introduced in a major way in preservice training. Such early training will give teachers a base on which to build, as better and more sophisticated technology becomes more widely available. Our goal of scientific literacy rests on how teachers teach. Our challenge is to use all the tools at our disposal to turn the bridge of instruction into a superhighway.

It's been said that science is the flickering light in our darkness. At the urgency of our troubled planet, we must pass the light to our children and enable them to keep it aglow.

Plenary Address, World Assembly Topic Four

THE POTENTIAL FOR INTERNATIONAL COOPERATION AND PARTNERSHIPS IN EDUCATION

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Of global concern today are phenomenal developments that beset 20th century man as he faces the advent of the 21st century. The clash of past and present realities over well-established systems and new revolutionary developments necessitates an intensive, in-depth assessment of the status of man and his role in the present milieu where he is caught between explosive forces over which he often has no control. There is an urgent need to balance the complex priorities that now confront modern man. In this rapid kind of existence when new scientific, technological advances pressure humanity to cope with the dizzying pace of social, economic and ideological changes which usher in the new millennium — education stands out as a balancing, steadying factor. At the center of the educational process is the teacher, who as the human purveyor of knowledge, patiently guides and directs future generations of learners as they grapple with new ideas, new trends, new directions for living.

The ASEAN Development Education Project (ADEP)*

In the last two decades, teacher education in ASEAN and the Asia-Pacific has received its share of concern. About 25 years ago, the Association of Southeast Asian Nations (ASEAN) was organized to ensure peace in the region through economic and social cooperation. The ASEAN member countries are: Indonesia, Malaysia, Philippines, Singapore and Thailand; and recently, Brunei Darussalam. The idea of cooperation among those countries was initiated in 1974 when the ASEAN Permanent Committee on Sociocultural Activities created a Subcommittee on Education to negotiate for an ASEAN-Australian project in education.

The Subcommittee on Education met in Manila on October 21-23, 1975 to consider a Philippine proposal jointly sponsored by Indonesia and Malaysia for the establishment of a Development Education Center. The five ASEAN member countries agreed on the need for regional cooperation in the solution of common problems in education. One primary concern expressed during the meeting was on the role of education toward national development. After a careful consideration of the proposal and the main thrusts of both international and regional organizations in the ASEAN (INNOTECH, RIHED, UNESCO, etc.), the delegates recommended the establishment of a NETWORK of Development Education Centers to be composed of existing educational agencies chosen by each respective member country. This NETWORK was to strengthen existing structures and pool available resources, rather than create new structures that necessitate huge capital outlays for physical facilities and staffing. It was intended to complement rather than duplicate the educational efforts of international organizations in the ASEAN region.

The ASEAN Education Task Force

The Subcommittee on Education also recommended the organization of an Education Task Force composed of two nationals from each ASEAN member country who are recognized experts in the field of education. The Task Force was to conduct a survey of the educational activities, facilities and professional resources in all the ASEAN member countries and also to elicit the views of their educationists and pol-

* This paper on ADEP is based on the experiences and reports of the presentor as Regional Coordinator of the ASEAN Development Project including the Sub-project on Teacher Education Reform.

icymakers regarding priorities in education. The findings of the Task Force are to serve as basis for identifying education projects that the ASEAN Network of National Development Education Centers may undertake.

In February 1976, the Task Force mapped out its plan of work in Manila and adopted the following guidelines in identifying the initial educational projects for collective action:

1. Identified projects should not duplicate the activities of UNESCO, SEAMEO (Southeast Asian Ministers of Education Organization), RIHED (Regional Institute for Higher Education) or other similar agencies as far as possible.

2. Identified projects should be development-oriented, i.e., relevant to national and regional needs.

In addition to a survey questionnaire for identifying national development goals, educational capabilities and priority needs in education in the five ASEAN countries, the Task Force visited each member country and conducted in-depth interviews and follow-ups of the survey from February to June 1977.

The results of the survey and interviews served as the basis for designing the ASEAN Development Education Project (ADEP), identifying the areas of cooperation and formulating the specific project in each area. These activities were carried out after the visit to the five countries which ended in Bangkok, Thailand, on June 26, 1977.

The ASEAN Development Education Project

Based on the results of the survey, the ASEAN Education Task Force submitted a report on the proposed ASEAN Development Education Project (ADEP) to the ASEAN Subcommittee on Education which met in Bangkok on June 27-28, 1977. This was approved by the ASEAN Ministers of Education at their first meeting on December 8-9, 1977, in Manila; then by the ASEAN Committee on Social Development at its meeting on June 6-8, 1979; and by the ASEAN Standing Committee at its fifth meeting on June 27, 1979.

The ASEAN Ministers of Education

The ASEAN Ministers of Education also approved the establishment of a Regional Coordinating Committee (RCC) which shall be responsible for the implementation of the ADEP. The committee was composed of the heads of the National Development Education Center (NADEC) and other representatives from each member country whenever deemed necessary. The NADEC composition and organization was left to each member country in accordance with its particular governmental set up or structure.

The ASEAN Ministers also mandated that the Regional Coordinating Committee for ADEP be convened to firm up five initial subprojects in terms of each project's specific activities and cost. Each project is to be regional as well as national in scope and is not to be based in a particular country.

In the management of the ADEP, there was a deliberate effort to refrain from establishing a new regional agency but to optimize the use of existing resources in the region. This approach encouraged ASEAN countries to help one another in developing their national capabilities and resources.

Description of ADEP

The ASEAN Development Education Project has the following rationale, major aims, components, structure and mechanism of administration.

1. **Rationale**

   ASEAN member countries have the following serious concerns/needs:

   - Establishment of meaningful relationships between educational and national development which require baseline studies;
   - Cooperative and collaborative efforts and cross-national studies concerning common educational problems;

- Multidisciplinary approach in understanding and finding solutions to common problems in education of ASEAN countries that are closely linked with social, economic, political and cultural realities.

2. **Aims**

The aims of the Network of ASEAN Development Education were defined as follows:

- To enhance and strengthen the contribution of the various National Development Education Centers in the ASEAN member countries to national and regional educational development;
- To develop a mechanism for consolidating efforts in education in the region;
- To serve as a resource generator and a dissemination scheme of significant educational research findings and development activities;
- To provide a mechanism for the sharing of technical services in education in the region; and
- To serve as a vehicle for collaborative efforts toward the improvement of education in the Asian region in general and in the ASEAN countries in particular.

3. **ADEP Subprojects**

The ADEP consists of five initial subprojects, namely:

- Subproject on Educational Management Information System (EMIS)
- Subproject on Special Education (SPED)
- Subproject on Teacher Education Reform (TER)
- Subproject on Test Development (TD)
- Subproject on Work-Oriented Education for In-School and Out-of-School Youth (WOE)

4. **Structure and Mechanism of Administration**

The Network of National Development Education Centers consists of a National Development Education Center in each ASEAN member country, the designation of which was left to each country. Accordingly, the following have been designated National Development Education Centers:

- Indonesia Cultural Research and Development Ministry of Education (BP3K)
- Malaysia Ministry of Education and Culture
- Philippines College of Education, University of the Philippines
- Singapore Vocational and Industrial Training Board (VITB)
- Thailand Office of University Affairs

Furthermore, the ASEAN-RCC shall establish policies dealing with the operations and the implementation of the ADEP in all its aspects. The RCC shall report directly to the ASEAN Committee on Sociocultural Development.

The RCC, at its first meeting held in Jakarta, on 17-18 July 1979, considered and approved the complete description of each of the five initial projects with its corresponding cost. Since then, RCC meetings have been held every six months. At every meeting, all NADECs presented progress reports on regional and national coordination of activities in the five subprojects as well as audited financial statements.

5. **Salient Features of ADEP as a Regional Collaborative Effort**

Needs assessment and identification in the field of education were undertaken by the five ASEAN member countries. First, a survey of educational concerns was conducted in the five

countries. This was followed by in-depth interviews of top educators and national policymakers of the same countries to confirm and prioritize the areas of concerns that the survey identified.

Project development and cost in the educational areas of concern were not carried out until a mandate from the Ministers of Education of the five countries was given on the formal negotiation for funding of the project. Technical participation of the donor country in the development of the ADEP and in its actual implementation was minimal.

Recipient countries enjoyed practically complete freedom in directing the project and in determining whether or not to involve foreign experts.

The ADEP made use of existing structures and relied largely on experts within the ASEAN region.

Process and terminal evaluation of project activities were built into the design of each subproject.

Process evaluation was conducted every six months, initially by the national implementing groups and at the regional level by the Regional Coordinating Committee. A representative of the government of Australia, the donor country, was invited to the semiannual meeting of the Regional Coordinating Committee.

Terminal evaluation was the primary thrust of the final activity which was taken up in a regional meeting. The final evaluation assessed the accomplishments of the subproject and of the entire ADEP, nationally and regionally, particularly in terms of ADEP's overall objective which was to strengthen national capabilities in research, training and development activities in education through the sharing of expertise and resources in the ASEAN region.

A very important feature of ADEP was the enthusiasm and willingness of every member country to adopt whenever possible common research designs and research instruments for collaborative research activities carried out by the project.

6. **Negotiation for Australia Government Funding**

   The ASEAN Ministers of Education also agreed that Malaysia, then coordinator of the ASEAN-Australian Dialogue, submit to the Australian government the ASEAN Development Education Project for funding.

   Preliminary to the approval of the ADEP by the government of Australia, Australian educationists met with the five ASEAN member countries to review the proposed project. After this meeting, the project was endorsed to the Australian government for funding on the condition that the ADEP, which consisted of five subprojects, be implemented and completed within a period of three years.

   Negotiation with the government of Australia for ADEP funding was done by ASEAN higher bodies. Finally, a Memorandum of Agreement was signed by all ASEAN member countries and the government of Australia, which supported the aforementioned project.

Implementation of ADEP

The member countries started implementing the activities programmed under each of the five ADEP subprojects. NADEC-Philippines was designated by the RCC to serve as overall coordinator in the implementation of the five subprojects. Each NADEC assumed responsibility for coordinating the regional activities of a subproject as follows:

NADEC Indonesia — subproject on Special Education; NADEC Malaysia — the Education Management Information System (EMIS) subproject; NADEC Singapore — subproject on Work Oriented Education (WOE); NADEC Philippines — subproject on Teacher Education Reform (TER); and NADEC Thailand — the subproject on Test Development (TD). Although each NADEC had the option of involving itself in any of the five projects, all NADECS participated in the subprojects, except Singapore which did not find a need for the subproject on Special Education, since its own Vocational Industrial Training Board specializes in vocational education.

Subproject on Teacher Education Reform

This subproject recognized the vital role of teacher education. The overriding objective of the project was to discover ways and means of improving teacher education programs (pre-service and in-service) in the ASEAN countries that would professionally prepare teachers to function effectively under changing social conditions. The project aimed to develop educational pedagogues and learning theories based on ASEAN values, philosophy and research.

The Philippines coordinated this subproject. All regional activities were held in Manila and Quezon City.

To implement the activities under this subproject, eight regional conferences were held, namely:

1. First Regional Workshop of ASEAN Teacher Educators • November 25-December 5, 1980
2. First Research Planning Workshop • January 16-30, 1981
3. Meeting of the Researchers of the First ASEAN Collaborative Research in Teacher Education Reform • February 1-13, 1982
4. Regional Planning Workshop for the Second ASEAN Collaborative Research in Teacher Education Reform
5. Evaluation Meeting for the First Collaborative Research in Teacher Education Reform • March 16-19, 1983
6. Meeting of Researchers of the Second ASEAN Collaborative Research in Teacher Education Reform • November 14-25, 1983
7. Evaluation Meeting for the Second ASEAN Teacher Educators • March 4-9, 1985
8. Second Regional Workshop of ASEAN Teacher Educators • May 27-June 1, 1985

Aside from the regional activities, all five ASEAN member countries conducted conferences, seminars and workshops at the national level. Two ASEAN collaborative research projects, both in two phases, were conducted in all the member countries, except in Singapore where participation was limited to the First ASEAN Collaborative Research in Teacher Education Reform.

A salutory outcome of the Subproject on Teacher Education Reform was the proposal to organize an ASEAN Teacher Educator's Association (ASEAN-TEA) during the Second and Final Regional Conference of Teacher Educators. It was hoped that ASEAN-TEA would serve as a vehicle for continuing collaborative efforts in teacher education in the ASIA-Pacific Region.

Two research projects were completed by each member country, the results of which could very well serve as the basis for teacher education reforms in each country. The first research was a survey on ASEAN views of actual observations of teacher behavior in the classrooms and their possible effects on pupil classroom behavior. The study revealed that the most valued characteristics of the teacher are predominantly moral and social, and the skills to which great importance is attached are primarily pedagogical. The study also showed that the teacher will require new knowledge, skills and attitudes to be effective in a future characterized by interconnected social problems and increasing interdependence among nations.

The second research project studied some aspects of pre-service education of teachers in the five countries. It produced exemplar instructional materials in the foundation and professional pre-service teacher education courses.

The results of both research studies are slowly being used to accelerate efforts toward improving teacher education in the different member countries, especially Malaysia, Thailand and the Philippines.

Indonesia participated in all the regional research activities and implemented all the aforementioned research projects and seminar-workshops at the national level.

In the Philippines, a network of cooperating teacher education institutions undertaking research in education was institutionalized. For the first time, research activities focusing on common problems, using the same research designs and instruments, were conducted nationwide as well as regionwide. (Please refer to the programmed activities in this subproject that were implemented nationwide.)

The Philippines published the following regional reports:

1. Perceptions of the "Ideal Teacher" and the Teacher-in-Practice in the ASEAN,
2. Classroom Observation of Teacher and Student Behavior in the ASEAN,
3. The Relevance of Foundation and Professional Courses in Teacher Education Programs in the ASEAN, and
4. The Development of Exemplar Instructional Materials for Pre-Service Teacher Education in the ASEAN.

Moreover, a Directory of Experts in Teacher Education in the ASEAN has been prepared.

Malaysia developed self-instructional modules in the foundations and professional teacher education courses with the collaboration of the Teacher Training Division and the Faculty of Education, Ministry of Malaysia. A total of five modules in educational psychology and philosophy were prepared in Bahasa Malaysia with four of these already translated into English.

Thailand was able to encourage the participation of teacher institutes both by accreditation and producing agencies. Seminar reports and research findings were used as bases for the improvement of teacher education, especially in relation to the specification of the roles and work of the teacher, development of pre-service and in-service teacher education reforms, i.e., revision or enrichment of syllabus content, field experience and use of community resources in apprenticeship training of student teachers and the selection of student teachers.

Thailand published the following national reports in Thai:

1. ASEAN Development Education Project Activities,
2. Summary of Research and Seminar Activities of the Teacher Education Reform in Subproject,
3. Research on Development of Exemplar Materials in Foundation/Professional Courses in Pre-Service Teacher Education Programs,
4. Research on a Study of Teacher Behavior at the Elementary Education Level, and
5. Guidelines for Teacher Education Reforms in Thailand.

Regarding Teacher Education Reforms, Singapore concentrated on the development of Vocational and Industrial Training Board training of officers and instructors. In place of the Second Collaborative Research, VITB organized a national seminar which sought the views of 61 participants from VITB, the Ministry of Education and Institute of Education on the PVT program — a new, specially designed course in employment and skills training for primary school leavers who were not academically inclined.

Conclusions and Recommendations

The ADEP has shown that regional cooperation is possible. It has brought about greater awareness of common problems and strengthened national as well as regional capabilities in solving such problems through continuous sharing of information, facilities, human resources and expertise. Research capabilities have been enhanced in the specific areas in education covered by the project. In view of this, whatever recommendations the Regional Coordinating Committee has forwarded to the national and regional educational planners and policymakers in the ASEAN are based on scientific research.

General Recommendations

There were many important activities generated by the ADEP in the member countries that must be institutionalized and continued beyond the termination of the project. Examples of these are the further development of the management information system in education to foster dissemination and exchange of educational information among the ASEAN countries as well as further sharing of expertise and continuing needs assessment for future collaborative efforts in education in the ASEAN region.

It is recommended that existing NADECs and the ASEAN RCC be maintained beyond the termination of the current assistance given by the Australian government to enable continuation of regional cooperation already established and to further strengthen the regional network by including Brunei Darussalam.

Specific Recommendations

The researchers of the First ASEAN Collaborative Research in Teacher Education Reform proposed that a continuing collaborative program for teacher educators in the ASEAN member countries (Brunei Darussalam, Indonesia, Philippines, Singapore, and Thailand) be instituted to enable qualified persons to participate in any of the following projects:

1. Intercountry visitation and observation by teacher educators and researchers in the different teacher education institutions in the six member countries and in other countries, on a continuing basis.

2. Continuation and expansion of the initial research projects undertaken in Teacher Education Reform to provide more opportunities for ASEAN member countries to conduct in-depth research, and share their experiences and human resources in dealing with common problems in the pre-service and in-service education of teachers.

3. Establishment and maintenance of an ASEAN Regional Teacher Education Center to be responsible for the collection and dissemination on a continuing basis of all matters pertaining to teacher education at the regional and national levels.

The 14th RCC recommended further the expansion of membership in the ASEAN Teacher Educator's Association so that it can be a dynamic force in teacher education in the ASEAN.

In general, the 14th RCC Meeting recommended that the sharing of experiences and resources along the line pursued by ADEP be continued in order to further strengthen national and regional capabilities.

Furthermore, the meeting recommended that the ASEAN authorities convene a meeting of ASEAN Ministers of Education to consider the terminal report on the ASEAN Development Education Project.

To implement these projects, funds should be generated out of the resources of member countries and augmented by external funding from the government of Australia and other foreign governments as well as other agencies concerned with regional cooperation toward the improvement of education in the area.

UNESCO-APEID Projects in Teacher Education

A major development in the UNESCO's Principal Regional Office for Asia and the Pacific (PROAP Bangkok) was the establishment of the Asia and Pacific Program of Education Innovation for Development (APEID) as a program under UNESCO PROAP since 1974. APEID functions as a regional mechanism for cooperation in education and as a catalyst for educational innovations linked to the problems of national development in the Asian and Pacific region. APEID has 28 member countries and 188 associated centers. All projects and activities within the APEID framework are designed, developed and implemented cooperatively by participating member states through their national centers associated with APEID. (UNESCO/Bangkok, 1990)

APEID has singled out teacher education and the training of educational personnel at all levels as pressing needs that call for the reorganization of educational systems and the reformulation of educational goals in the region. These measures have led to innovations and initiations that ensure the ade-

quate professional preparation of teachers so they can cope with changing and increasingly demanding roles in society. Moreover, these measures have encouraged policymakers to regard teacher education in terms of career-long learning and training. (UNESCO/Bangkok, 1989)

To illustrate, APEID played a vital role in coordinating a survey of teacher education programs in eighteen countries in 1985-1986. These survey studies provided statistical data and information as well as details of trends and developments in teacher education. These countries were invited to a regional meeting on December 4-6, 1986, organized by APEID in collaboration with the Centre of Education, University of Tasmania, in Hobert, Australia. The participants presented papers on their surveys including their innovations and initiatives, which were thoroughly examined on a country-to-country basis. These were summarized in the first volume of the "Report on Innovations and Initiatives in Teacher Education in Asia-Pacific Region" (UNESCO/Bangkok, 1990).

Another collaborative activity of APEID was the continuing education for teacher educators. In March 1976, APEID in association with the National Institute for Educational Research in Meguro, Japan, convened a Task Force with participants from the associated centers in India, Indonesia, the Republic of Korea, Nepal and the Philippines responsible for the pre-service and in-service preparation of teachers. As an innovative venture, the Task Force proposed advanced level workshops for teacher educators which aimed to promote the process of self-analysis and self-renewal in teacher education institutions and among teacher educators. The basic premise was to focus on common mutual problems and to build on the experiences as adult learners (UNESCO/Bangkok, 1976).

The Task Force developed guidelines for organizing advanced level workshops and a handbook on how actual experiences can be brought together for purposes of problems diagnosis and evaluation.

Both the guidelines and handbook aimed to stimulate teacher educators from member associated centers to provide continuing education for their teacher educators.

Following the Task Force meeting, national advanced level workshops for teacher educators were organized in 1977 in the five countries under the leadership of the Task Force.

As a member of the Task Force and then Dean of the College of Education of the University of the Philippines, I, along with the College faculty organized the National Advanced Level Workshop in the country. The overall objective was to promote the process of self-study, self-analysis and self-renewal of teacher education institutions in the light of current problems and issues in teacher education. We also studied and analyzed the Task Force guidelines and draft handbook for advanced level workshops.

The Advanced Level Workshop was attended by vice presidents, deans and senior professionals from 22 teacher education institutions from 14 regions of the country.

Two resource participants from Indonesia and Korea who were members of the Task Force and one specialist from UNESCO/APEID also attended the workshop.

As part of the preworkshop preparation, the participants received an orientation on the objectives of the advanced level workshop and on their roles before, during and after the workshop. The participants were expected to organize a regional advanced level workshop involving all the colleges of education in their respective regions. Moreover, they were expected to also involve their faculty in the preparation for the national advanced level workshop by submitting

1. a summarized list of their faculty's perceptions of basic problems and issues in teacher education; and

2. an institutional report on at least one case study of an innovation being carried out by their college (UNESCO/Bangkok, 1978).

The 26 case studies submitted were classified according to the problems discussed in the workshop under the following problem areas:

1. Recruitment and selection of quality students in teacher education;

2. Rethinking the teacher education curriculum for greater relevance to national development goals;

3. Nonformal education for community development;

4. Continuing education for teacher development;

5. Planning, implementation, research and evaluation of teacher education institution (Ibid.).

Following the National Advanced Level Workshops held in India, Indonesia, the Republic of Korea, Nepal and the Philippines, in 1978 APEID invited the directors of the national advanced level workshops to a regional workshop. They prepared a handbook of suggestions for organizing advanced level workshops for teacher educators.

Their recommendation indicated a need for a mechanism to be set up at the national and regional levels that would provide the needed coordination for all programs to upgrade teacher education in the areas of recruitment and selection of students, curriculum development, nonformal education, continuing education, research on teaching and teacher education, and in the planning, implementation and evaluation of innovative programs and projects (Ibid.).

Collaboration with Technical Committees and Professional Associations

In the Philippines, a strategy devised by the Department of Education, Culture and Sports was the establishment of a Technical Panel for Teacher Education, an advisory body to the Secretary of Education, through the Bureau of Higher Education.

The Technical Panel has the following members: directors or representatives of the Bureau of Higher Education; Secondary Education and Elementary Education; a representative of the Philippine Association of School Superintendents; the president of the Philippine Association for Teacher Education; the president of a teacher education institution; and a well-known teacher educator. As a member of this Technical Panel, I realize its vital role in providing direction and assistance in the planning, development and implementation of policies, standards and regulations regarding teacher education (UNESCO/APEID, 1988).

Policies and standards for teacher education, passed in 1983 as DECS Order No. 26 and revised as DECS Order No. 37 in 1986, were formulated through a series of consultation conferences with the Philippine Association For Teachers Education (PAFTE) (Gopinthan and Nielsen, 1988).

Curriculum development in teacher education has always been undertaken by the Department of Education, Culture and Sports (DECS) with the Philippines Association For Teacher Education. PAFTE developed prototype syllabi for the new courses in the new curricula incorporating locally authored textbooks for the courses (Ibid.).

All of the nations' 328 teacher education institutions are members of PAFTE, which has 13 regional chapters, each with its respective set of officers. They meet regularly and hold conferences, seminars and workshops at the national and regional levels, where they discuss common concerns, trends and issues in teacher education. In addition, they should share resources obtained from local and international agencies. Committees for textbook writing and materials production should be shared likewise with member institutions of the association (Ibid.).

For general education and specialization components, the Association of the Philippine Colleges of Arts and Science (APCAS) was consulted. Joint conferences and assemblies between DECS and nongovernmental agencies were conducted to discuss issues and problems in teacher education. Reorientation and retraining of private school teachers from elementary schools were conducted as joint projects of the Department of Education, Culture and Sports, the Fund of Assistance to Private Education (FAPE) and PAFTE (Ibid.).

Other existing professional associations in Asian countries are the Teacher Education Council of Thailand, Teacher Association in Western Samoa, the Indian Association for Teacher Education, Nepal Primary and Secondary Teachers Association, the Teacher and Teacher Education Associations in the Republic of Korea, Teacher Education Association at different levels in Pakistan (Ibid.).

UNESCO/APEID In-Service Primary Teacher Education in Asia

This project was designed to assist countries who have taken the initiative of evaluating their in-service education programs as well as help those who have not undertaken innovations related to in-service education for primary school teachers (UNESCO/Bangkok, 1980).

The project aimed to create continuing research links among educational researchers in the participating countries. It had five phases:

- Development of a design to study the current status of in-service education and the methodologies of evaluation used in all the participating countries as basis for suggestions for renewal of programs through an initial planning meeting held in the Philippines from 24 August to 4 September 1980;
- National status studies and in-depth surveys on in-service primary teacher education; an interim review meeting on the state of the art regarding the methodologies of evaluation and renewal of in-service primary teacher education program organizers at Bangkok from 22 to 29 January 1982;
- Separate national workshops to assess and refine the national studies and develop alternative schemes for evaluating and improving in-service primary teacher education in the country; and
- Finalization meeting to synthesize the findings and conclusions of the various national studies. This was held at the National Council of Education and Training (NCERT) in New Delhi, on 3-12 December 1981.

The meeting met the following objectives:

1. Review and synthesize the findings of the national studies and case studies;
2. Develop guidelines for research and evaluation on in-serviceice primary teacher education;
3. Refine alternative schemes/implementation strategies for in-service primary teacher education (Ibid.).

New directions emerged from the problems and issues presented such as (1) the development of new schemes/techniques in undertaking primary-service teacher education; (2) the motivation on the part of teachers; (3) the degree of teachers' participation in planning in-service teacher education; (4) the provision of incentives and financial resources and the lack of training, e.g., whether teachers have to be trained in their own schools, at the school or community based in-service education centers, or elsewhere (Ibid.).

Collaborative research and development activities based on fundamental issues raised, and planned at the national and regional levels were recommended. The development of research capabilities, especially in the use of experimental methods, such as in development research, the use of appropriate research and statistical techniques was proposed. Also, it was recommended that periodic sharing of experiences among member countries be organized at the regional level (Ibid.).

International Council on Education for Teaching (ICET)

As an international nongovernmental association of educational organizations and individuals, ICET is dedicated to the improvement of teacher education and all forms of education. One of its major goals is to foster international cooperation in improving the quality of preparation of teachers, administrators, educators and educational specialists through the development of national, regional and international networks. It has organized significant world assemblies and educational institutes throughout the globe and has excellent publications.

In 1986, the ICET Board of Directors reorganized the Board in response to the expanding programmes and projects of the Council worldwide. Six Regional Vice-Presidents were elected to represent the geographical areas of Africa, Asia and the Pacific, Europe, the Middle East, North America and

South Central Caribbean. This is viewed to stimulate interest and participation in ICET's programs and projects at the regional level. ICET also approved the establishment of a regional center responsible for the dissemination of ideas, experiences and innovations as well as for identifying issues and problems in teacher education in their respective areas and for making this information available to ICET.

As an active nongovernment organization (NGO), ICET has participated in NGO meetings and other UNESCO-sponsored conferences around the world. It has also provided consultant services under contract to UNESCO.

Its most recent joint activity with UNESCO was the Interregional Seminar, which aimed to "develop Practical Suggestions Concerning the Establishment of Coordinating Structures and Machinery for the application of Integrated Training (Pre-Service and In-Service) of Educational Personnel," held in Cairo on December 17-20, 1989 (ICET, 1990).

The purpose of the seminar was to continue on-going efforts of UNESCO and ICET in developing and implementing integrated pre-service and in-service training of educational personnel in the regions. The seminar continued the work of the UNESCO Interregional Seminar on Integrated Training Policies and Plans for Educational Personnel (ED-85/WS/59, Paris, 1-5 April 1985). The outcomes of the 1989 seminar included guidelines and strategies for creating coordinated structures and mechanisms developed on the basis of (1) previous work performed under UNESCO and other auspices; (2) work of selected education offerings from all the six ICET regions which were involved in the preparatory work through case studies and seminar papers presented during the seminar; and (3) the work of the participants during the seminar. The seminar recommendations were reviewed by an advisory group and ICET and later forwarded to UNESCO (UNESCO/ICET Interregional Seminar, 1989).

Recommendations

From the foregoing, we have noted examples of internal cooperation and partnerships in education and teacher education. These are programs and studies which aim to establish linkages between research and professional preparation, theory and practice, and pre-service and in-service education.

The following recommendations are proposed

1. In order to institutionalize the internationalization of teacher education and education programs, some of which may have been initiated at the grassroots level, the approval of the top policymakers — the Ministers of Education — is important. This will pave the way to assure the implementation of innovations that may result from these collaborative projects. As in the case of the UNESCO-assisted ASEAN Development Education Project, project development was not carried out successfully until a mandate from the Ministers of Education had been given.

2. Needs assessment and needs identification should be conducted by educators from the participating countries. This may he done through surveys and other studies that identify priority areas of concern.

3. There should be a willingness on the part of every participating country to adopt whenever possible common research designs and instruments for collaborative research projects.

4. Participating countries should enjoy complete freedom in directing their projects and in determining whether or not to involve foreign experts. In the case of the UNESCO Advanced Level Workshops, the resource persons came from the participating countries.

5. Technical participation of the donor country in the development of projects and its implementation should be minimal. However, the donor country may be involved in the external evaluation of the project.

6. The projects should make use of existing structures and resources.

7. Process, terminal and follow-up evaluation of project activities should be built in the design of the project.

Dr. Sim Wong Kooi's (1991) desiderata for participation in such a venture appear necessary, such as the following:

1. There should be a "critical mass" of dedicated teacher education researchers who are prepared to pursue proactive research for the purpose of bringing about improvements in teacher education, regardless of whether the environment is supportive or aversive.
2. There should be genuine interest among teacher education researchers in learning from other countries in terms of trying to ascertain as much as possible the specific context within which the research was conducted instead of superficially accepting or rejecting any research finding.
3. There should be genuine attempts among teacher education researchers to seek rapprochement between apparently conflicting approaches to disciplined inquiry; after all, presumably opposing methods have managed to produce valuable outcomes, and it must surely be preferable to pool our resources than to dissipate our energies in demolishing strawmen representations of supposedly opposing paradigms.
4. There should be appropriate and adequate incentives for regional collaborative projects on teacher education, whether between interested individuals, institutions or countries.
5. There should be a regional advisory body with representatives from each participating country that not only acts as a clearinghouse for research on teacher education, with an effective and efficient infrastructure for storage and retrieval of research reports, but also actively produces syntheses of the research studies periodically as well as guidelines for research on teacher education.

Conclusion

Education opens windows to the past and the future. It is at the forefront of new development — leading the way to enlightenment. It is, therefore, expected that educational programs everywhere will be closely attuned to the major social, economic, political and cultural issues confronting each nation, both from the national and international points of view. In the face of the irresistible surge toward a single global economy, education will have to consider such issues as "the increasing gap between the developed and developing countries, continuing political and economic domination despite the independence given to newly established democracies and the stiff competition for world markets. (Rassekh and Vaideanu, 1987).

"High tech telecommunications" which make the global economy possible will accelerate its development so that soon the foundations of an instructional information highway system will be laid. This worldwide information network will hasten the prospect of our becoming "one global marketplace." With rapid advances in high tech telecommunication, we will be capable someday of communicating with anyone, anywhere, by any form — voice, data, text or image — at the speed of light (Naisbitt and Aburdene, 1990).

Since its invention, the impact of television throughout the world has been staggering. It has brought people, places and events literally into everyone's living room. Global TV, through the satellite system, has spawned repercussions across cultures and now raises the threat of deculturization of the less advanced countries. The issues are explosive and controversial because of the totality and massiveness of television's influence, for good or for evil, on peoples and nation everywhere. Television's power to alter the minds, attitudes and practices of multitudes of captive audiences, brings ethical dilemmas to the fore (Ibid.).

New approaches, new methodologies, new experiences are the product of the new technologies. Their exciting possibilities allow for "more flexibility, greater interactivity and individualization." Educators in Asia and the Pacific (UNESCO, 1990) recognize the role of educational technology in enhancing the teacher-learning process. But they note that technology's uses may have limited value because its prohibitive cost benefit only the children in elitist schools whose accelerated development will outdistance those of children in poorer communities.

Education can well take the lead in spreading the wonderful benefits of the new educational technologies beyond the elite schools that can afford them. Eventually, it is hoped that children who live in "disadvantaged socioeconomic conditions" will share in these benefits, too.

Educational goals and strategies for teaching-learning will undergo revolutionary changes. The increasing importance of attitudes and skills has to be looked at in the process of assimilating and applying knowledge.

The school of the future will be a more flexible, open laboratory for experimentation and innovation. The teachers will be free form the "tyranny of the lesson plan." They will function more effectively and efficiently as "enablers, facilitators, problem-solvers, catalysts or organizers of learning." They will be prime movers — propelling their students to transform their environment, their world. They must, however, be trained to use their newfound power for good and constructive ends.

This is where proactive planning of educational goals, methodologies, technologies and strategies will serve future teachers best. These new skills in educational management and planning can be developed in futuristic pre-service and continuing education programs for teachers and other school personnel. This is an educational imperative required by the 21st century.

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PART II

WORLD ASSEMBLY COMMUNIQUE AND RECOMMENDATIONS

AND

ABSTRACTS OF ALL ACADEMIC PAPERS BY TOPIC

WORLD ASSEMBLY COMMUNIQUE*

A summary of the salient ideas, issues and policy recommendations presented and discussed at the 1992 World Assembly

The 39th World Assembly of the International Council on Education for Teaching (ICET) meeting at UNESCO Headquarters, Paris, France, for five days — July 20-24, 1992 — addressed the theme: ***Teacher Education in an Era of Global Change.***

Starting with the challenge presented in the welcoming remarks by ICET President and Nigerian minister of Education and Youth Development, Aliu Babatunde Fafunwa, that "notwithstanding debilitating economic crunches and the disrupting influences in the world political, social and economic order, there will be dedicated efforts to improve the quality of education and raise the quality of people around the world," the Assembly addressed four major topics through five plenary sessions each followed by a reacting panel, and seven concurrent sessions. In these concurrent sessions, over 100 papers from scholars representing all of ICET's six world regions were presented on the four major topics.

In his welcome address, UNESCO Director-General Federico Mayor underlined the significance of this Assembly in highlighting the problems faced by teachers in their professional work in the political, economic, social and professional dimensions. The Assembly should, he stated, "provide a valuable occasion to focus on the essential role of teachers in the era of global change in which we live."

This being the first World Assembly of ICET since the death of Dr. Frank Klassen, ICET's Executive Director, many tributes from educators around the world were paid in a special Memorial Plenary Session on Tuesday, July 21, and throughout the five days of the Assembly. All cited Dr. Klassen's great humanity, his unending efforts on ICET's behalf, and the remarkable contributions he made to international education through continued education and devotion.

Dr. Mayor, in his opening remarks as well as in his special tribute to Dr. Klassen, acknowledged Dr. Klassen's great works, marked by "dynamism, competence and dedication."

The four major topics addressed in plenary sessions, panel presentations and delivered papers were as follows:

1. The Democratization of Educational Systems and Teacher Education
2. The Professionalization and Status of Teacher Education and the Teaching Profession
3. The Impact and Role of Science and Technology on Educational Change
4. The Potential for International Cooperation and Partnerships in Education

* ICET would like to extend special thanks to Directors Edmund Cain, Russell Leskiw and Darrell Bloom for developing guidelines to assist Chairpersons and Rapporteurs in organizing information presented at Concurrent and Plenary Sessions and for synthesizing the resulting Chairs' and Rapporteurs' reports into this world Assembly Communique. In addition, many thanks are owed to Concurrent Session and Plenary Session Chairpersons and Rapporteurs who recorded the salient ideas presented in Sessions and developed the policy and action recommendations that became the 1992 World Assembly Communique.

TOPIC ONE:
The Democratization of Educational Systems and Teacher Education

ISSUES AND CONCERNS

1. The issue of relevance to the people of the democratization process, i.e., equality of concern for all human beings to develop their potentialities to the fullest, and of the implication of democratization for education, i.e. equal access to educational opportunities, is a key concern. Educational opportunities will be open and accessible to all on equal and equitable terms.

2. The presence of qualified teachers in adequate numbers at all ages and specialization levels as a prerequisite of quality education is a key component of the democratization process.

3. The question of "education for all," i.e., reflecting upon the disenfranchised and the marginalized groups of nomadic children, street children, migrants, the handicapped, the economically deprived, women and various minority groups, is a complex and challenging issue the world over in bringing about true democratization.

4. Adequate funding of education as the essence of true democratization at all levels and as the real determinant of the quality of education, is of increasing significance.

5. The need to provide a wide variety of delivery systems to cope with the great diversity of needs is a continuing challenge in meeting the quest for democratized, quality education.

6. The role and place of continuing in-service programmes for new and experienced teachers places a continuing strain on financial and human resources in all countries.

7. Full democratization requires academic freedom to select (a) who should be taught, (b) who should teach and (c) what should be taught.

RECOMMENDATIONS

1. Governments declare education a high priority through adequate funding so that the education sector can provide literate, the employable population that is needed for national and personal development.

2. Renewed vigil be exercised and action guaranteed toward providing universal access to education by the children from all segments of society.

3. The knowledge, skills and role models specific to functioning in a well-educated democratic society be identified and systematically addressed, i.e., intellectual, social, physical, emotional.

4. Responsible authorities in the educational systems, i.e., ministers, administrators, teachers, provide a context of democratic ideals, styles and practices throughout the system.

5. Responsible authorities model the openness, sensitivity and outreach to accommodate the involvement and participation of students, parents, community leaders as well as educational personnel in decision-making processes.

TOPIC TWO:
The Professionalization and Status of Teacher Education and the Teaching Profession

ISSUES AND CONCERNS

1. Human creativity, fostered by selective acquisition of values, attitudes and cultures, requires teachers and teacher educators who have acquired and in turn provide quality education. The selection, training and retention of such teachers is a dominant feature of this topic.

2. A major challenge facing both the teaching profession and the teacher education community is to be able to assess the appropriateness of orthodox approaches to teaching and at the same time to be open to new approaches to teaching methodology.

3. The status and image of the teaching profession and of teacher education have deteriorated in the last 25 years. Further, conditions within the profession which foster professional outlook, performance, and development have not kept pace with expectations and changes in society.

4. Teachers are prepared in institutions that are not strictly designed for or are ill-equipped for teacher education.

RECOMMENDATIONS

1. Improved professionalization requires a commitment to critical analysis and evaluation and to instituting required changes; such changes should include attention to meeting the demand for improved access, improved educational quality, setting resource expectations, and encouraging innovative approaches to teaching and teacher education.

2. Professionalization of teachers should be enhanced through self-regulation facilitated by appropriate codes of ethics. Further, continuing professional development of all education personnel should become the norm.

3. Teachers and their professional organizations should demonstrate a stronger awareness of the major factors undergirding change, effective approaches to instituting change, and the continuity of change.

TOPIC THREE:
The Impact and Role of Science and Technology on Educational Change

ISSUES AND CONCERNS

1. Thinking and learning, as examples of complex human behavior, have been assisted by the constructive application of scientific and technological advances.

2. The global concern for developing a scientifically literate citizenry can be best realized by instituting scientific methods in teaching and learning, characterized by appropriate adjustments in classroom practices. These could feature curriculum revision, new assessment approaches, and a variety of instructional strategies.

3. Creative and useful application of classroom technology in whatever form it is available — radio, computers, interactive media — requires adequate technical backup and extensive teacher training.

4. The deficiencies of teachers with a limited background in science knowledge need to be addressed, e.g., by using technology more effectively to bring the child and the external world into mutual contact.

5. The impact of the computer on the work of the world mandates changes in teacher education and in its classroom application. Computers, when available, can be significant motivating influences as well as instruments for solving complex problems in learner-external world interrelationships.

These issues and concerns have highlighted the critical interrelationships of the key elements of curriculum; the subject matter, i.e., science content; the learner; and the context or total environment, i.e., scientific and technological advances.

RECOMMENDATIONS

1. Greater use of radio, live television, interactive video, etc., to overcome geographic and cultural barriers must be envisioned and realistically adapted to the delivery of education in rural communities, e.g., battery packs or other supplementary energy sources.

2. Specialists from developed and developing nations should combine knowledge and resources to address the joint problems of universal access, appropriate medium selection; and the development of problemsolving software in the language of the developing country and in appropriate subject areas.

3. Teachers, in both pre-service and in-service preparation, as well as parents in all communities, should be helped to become more knowledgeable in alternative and more effective methods of teaching the sciences.

   Teachers in particular require more involvement in the training, motivation, and building of competence in using technology, i.e., computers, and in evaluating educational outcomes.

TOPIC FOUR:
The Potential for International Cooperation and Partnerships in Education

ISSUES AND CONCERNS

1. The need for collaboration at all levels — within the local community between school and industry as well as nationally and internationally — is required in areas such as planning, programming and providing support networks.

2. A variety of approaches are necessary for involving student teachers in building linkages between countries and sectors of the world.

3. Differences in student's ethnic and cultural backgrounds provide a challenge for addressing differences at international levels.

4. There is a need for internationalizing teacher education programs through international assignments and experiences for students and teachers, through curricular changes, and through creating networks to identify, assess, and promote the various experiences.

5. Tensions arise between local practices and beliefs and global thinking. As these tension can impact negatively on cooperative efforts, it is often necessary to devise ways to involve the total community in defining and implementing solutions.

6. Networks should be strengthened or developed, and research in teacher education should be increased to encourage and assist quality teaching.

7. The use of internal consultants, the use of existing institutions, the training of teacher education personnel — all require new focuses.

RECOMMENDATIONS

1. International cooperation and exchanges should take account of cultural as well as social, economic and political contexts of teacher education.

2. The use of action research as a valuable tool to establish partnership — building from local levels — needs to be expanded.

3. Reality, as it is perceived by various individuals and groups, needs to be examined and specified; then we need to include schools, industries and universities as active participants in partnerships.

4. Networks within regions and among regions in joint ventures on training, materials solution, research, etc., should be used more extensively for mutual support in teacher education.

5. Regional efforts initiated by UNESCO require continued support.

6. UNESCO support for ICET, exemplified in the 39th World Assembly and various projects, should be regularized and publicized.

7. More alternatives and incentives are required for teachers to improve their standard of training.

8. Opportunities need to be provided for the self-analysis, and self-renewal of teacher educators.

ABSTRACTS OF ALL ACADEMIC PAPERS BY TOPIC

World Assembly Topic One

THE DEMOCRATIZATION OF EDUCATIONAL SYSTEMS AND TEACHER EDUCATION

Research studies and programs related to expanding access to educational opportunity; teacher education programs for special education and early childhood education; education for the enfranchisement of the handicapped, rural, migrant, illiterate, and economically deprived students; developing new instructional systems and curricular reforms (relevance); investigating a variety of delivery systems to improve student achievement and scope of education; developing new in-service programs to cope with changing social and political conditions.

TOPIC ONE, INDEX OF ABSTRACTS

Alphabetical by Author

DEMOCRATIZATION OF EDUCATION IN NIGERIA: IMPLICATION FOR TEACHER EDUCATION

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Democratic education is based on two principles: (1) the right of every individual to achieve a self-satisfying and self-respecting personal life pattern; and (2) the responsibility of every individual to further, rather than retard through self-aggrandizing activities, the welfare and betterment of every other member of the group.

Attempts at democratizing education in Nigeria started with the Universal free Primary Education (U.P.E.) in 1956 and later in 1976. In spite of these, not much has been achieved to make education universal in Nigeria. This paper reviewed colonial education in Nigeria, its limitation and the role of government to make every Nigerian literate by the year 2000. This paper focused on the rural dwellers, the nomads, the people in the riverine areas who form the preponderant majority of young and adult illiterates.

To solve the imbalance and educational shortcoming on this disadvantaged majority, this paper advocated for improved teacher education programmes that would accommodate the identified problems. It also suggested new strategies that would enlist the active participation of every individual in the society either as teachers or as sponsors so that by the year 2000, Education for All would have been achieved in Nigeria.

MULTICULTURAL COMMITMENTS AND CONTROVERSY IN SOCIAL STUDIES TEACHING AND TEACHER EDUCATION (USA)

Gloria T. Alter
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USA

Social Studies textbooks have been criticized for their lack of in-depth and meaningful content; critical thinking and decisionmaking opportunities; and multicultural and global perspectives. This session will draw implications from a study of six recently published (1991) elementary social studies textbook series. The study examined the degree to which these series fostered multicultural education and drew implications for teaching and teacher education.

A grounded theory analysis of teacher manuals and a review of related literature led to several striking conclusions. The study results revealed that the majority of textbooks are still characterized by a nationalistic versus global perspective; superficial in their treatment of cultural content; lacking integration of a humanistic-pluralistic perspective throughout the curriculum; in need of further attention to content accuracy and adequacy; lacking in strategies which promote critical thinking or cooperative learning; using little simulation or role playing to take on the perspectives of others; and minimally or not engaged in connecting students with their past or toward active community involvement. One text series, however, represented a model for teaching which did provide multicultural perspectives.

Related literature places this study within the context of curricular reform recommendations and particular guidelines for the development of multicultural awareness and commitment.

EXAMINING THE LINK BETWEEN TEACHER COLLABORATION AND INSTRUCTIONAL CHANGE

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There is a national trend in the United States to restructure our local educational systems and improve academic opportunities for underachieving students in both elementary and secondary schools. The scope of the teachers' involvement in helping to develop plans to restructure these schools is also important. Therefore, the focus of this paper is a study of teachers who have formed collaborative alliances in their efforts to change instruction and curriculum for rural and economically deprived children living in the State of Georgia.

This paper will examine the connection between teacher collaboration and the educational changes implemented at several schools. It shall discuss innovations in the in-service delivery and the advancement of professional learning taking place among teachers. The extend to which instructional changes have modified student learning as well as teacher behavior shall also be discussed. Specifically, the paper will link the various aspects of teacher cooperation to factors that have brought about change in elementary schools.

As for the method of research used in this study on teacher collaboration, it shall include qualitative and quantitative data. The findings will present information about the teachers' perceptions and experiences in having to collaborate in their efforts to offer instruction that will improve student learning. Overall, the consequences of the findings reported in this paper will serve to influence and generate new views on teacher education at the in-service level.

In terms of stimulating thoughts and ideas, this paper will identify and consider the need for future directions. It shall also explore the challenges of increasing teacher collaboration to help reform educational systems. Moreover, the intent of this paper is to advocate more research on the use of teacher collaboration to promote change in the instruction of underachieving students.

TOTAL QUALITY MANAGEMENT AND THE DEMOCRATIZATION OF EDUCATION

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The acceptance and implementation of truly democratic principles in education will require much more than a process of simple improvement upon currently existing standards of practice. If schools are to become workplaces in which young people learn how to exert their best efforts toward the building of a better world, a better community, and a better life for themselves and their families, current educational structures will need to be radically transformed in the short term.

A philosophy which will prove most useful in this transformation is that of Total Quality Management (TQM), as promulgated by Dr. W. Edwards Deming and others. This paper will outline the contributions TQM can make to the democratization of schools and the education of young people in democratic ways.

TOM teaches that those who must be most proficient in their work are those who are in the front lines of production, and it is they who must be enabled and empowered to continuously improve themselves and the quality of their lives and their work. Life and work are viewed as processes from which

products emerge. Integrity of process is required for long-term product integrity. By learning and practicing the tenets of TQM in their schooling, young people will prepare themselves to be fully functioning democrats, dedicated to the maximization of human potential in themselves and in their families, communities, and workplaces, and dedicated ultimately to the responsible use of the planet which is home to us all.

EXPANDING ACCESS TO EDUCATIONAL OPPORTUNITY OF ILLITERATE AND ECONOMICALLY DEPRIVED STUDENTS

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Philippines

In a country where 85 percent of all households are below the poverty line as per data of the National Economic Development Authority (NEDA), children's education becomes less of a priority than food, clothing and shelter. Children at their tender age are pushed into work to help augment the family income. This is the reality today despite the fact that a couple of years ago the Department of Education, Culture and Sports (DECS) announced compulsory pre-elementary education for children before they are admitted in public or government-run and private schools.

Pre-elementary education for children is basically essential since at their formative age they must be provided with proper early education to develop their creative, critical and analytical thinking. In the Philippines today, there are about 11.6 million children from 0 to 6 years old and only 21 percent of this age group are getting nursery and kindergarten education from existing private institutions and government-run day care centers. Of the total 2,572 existing educational institutions for children, some 1,292 are private and 1,280 are government-run. Moreover, private institutions are very expensive, they are beyond the reach of low-income families and there are limited government-run pre-elementary schools.

In view of these prevailing conditions, access to education for illiterate and economically deprived students becomes almost nil. Regina Carmeli College in its spirited desire to bring education to the doorsteps of the poor that they may have access to educational opportunity conducted a research on how it can play a role in nation-building and thus have a basis for appropriate action and its proper implementation to bring about the desired end of making education available to the economically deprived students.

A felt need for action that this research called for the establishment of Day Care Centers in identified communities whose thrust is to provide free pre-elementary education, facilitate the development of creative, critical and analytical thinking of children in their formative years. This includes providing the children with the basic 5 Rs, to wit: reading, (w)riting, (a)rithmetic, right reasoning, and right conduct. The Day Care Programs will benefit preschoolers in the depressed barangays of the identified municipalities. Simultaneous to the setting up of the Day Care Centers is the organization of the mothers of the preschoolers who will eventually compose the structure that will continuously facilitate the activities of the program in their respective communities. The implementation of the program (Day Care) is officially sanctioned by the Department of Education, Culture and Sports (DECS) and involves five main components, namely: (1) Pre-elementary Education, (2) Maternal and Child Health Care, (3) Women's Organization and Development, (4) Development of Day Care Teachers, (5) providing skills training to the mothers for income generating projects.

THE DEVELOPMENT OF BASIC SCIENCE AND APPLIED TECHNOLOGY AMONG RURAL "OUT OF SCHOOL" YOUTH WITHIN DEVELOPING COUNTRIES

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A regional project of 15 months involved 10 countries of Bangladesh, Bhutan, China, Indonesia, South Korea, Nepal, Pakistan, Philippines, Thailand and Viet Nam. The major developmental objectives were to programme improved access to basic science and applied technology for rural youth and to motivate the young toward a fuller understanding of science and technology.

A Needs Assessment Survey (NAS) for chosen subcentres of each country, was carried out. Considerations included the cultural, economic, political and geographic conditions. Logistical support systems were considered of paramount importance in identifying potential success. The viability of transfer of expertise and experience between countries was analyzed. Emphasis was placed on establishing activities for disadvantaged female youth.

The paper provides examples of a number of subcentre activities. For example, in South Korea, a course for farmers' wives was developed, including such topics as nutrition, pesticides, hygiene and basic electricity.

Quantitative and qualitative advantages in terms of "quality of life" of the project are identified, e.g., improvement in health, economic benefits, raised aspiration levels. Risks are also scrutinized, e.g., sustainability of such projects within and between countries, the calibre and availability of teachers, communication problems, and urban drift.

The paper considers the role of specific countries within the group in terms of leadership and dependency.

THE ORGANIZING OF TEACHING UNDER EXTREME CONDITIONS

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The influence of unforeseen factors on the teaching process, seeming quite natural and clear, has not been entirely revealed. The problem is actual and needs to be researched and solved, and will need support on the part of the council.

The earthquakes not only caused great sacrifices and tremendous economic damages, they also resulted in the interruption of the teaching process.

A number of unforeseen psychological stress factors come into being, which are displayed in indifference and loss of interest not only in studies but also in social-spiritual life and in material values.

For the organization of the normal teaching process under extreme conditions it is necessary to take the following steps:

1. To arrange the teaching process in tents or temporary places fit for that purpose.

2. To evacuate the educational establishments and provide them with movable laboratories.
3. To take care of teachers and students, to exercise the control and study of their psychelogical and physiological state, their health.
4. To fulfill various reconstruction works.
5. To organize an international council and a special fund to assist the educational establishments which might be under extreme conditions.
6. To deliver lectures to make the seismic country students ready for the earthquake.

TEACHER EDUCATION AND CURRICULUM PLANNING: IMPLICATIONS OF DEMOCRATIZATION FOR SCHOOL-BASED DECISIONMAKING

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The pressures of democratization tend to bring about some devolution of responsibility from central bureaus to individual schools. Even in countries with a centralized administration, the benefits that flow from greater teacher involvement are being recognized, so that teachers and principals increasingly find themselves addressing matters of curriculum development and implementation. These usually give rise, however, to complex problems that extend beyond technical factors to moral issues.

Both theoretical inquiry and research studies of school-based curriculum planning suggest that the satisfactory resolution of problems of this kind requires an understanding of dilemmas in whole curriculum planning and experience in making deliberative judgments. Generally, though, the curriculum perceptions of teachers are constrained by subject specialists, and the development of a wider perspective is often neglected in pre-service courses. Neither is a concern for deliberative inquiry prominent in many in-service courses.

This paper will argue that effective school-based curriculum decisions result from a collaborative institutional climate in which teachers view curriculum issues as problematic and construct deliberative strategies in order to resolve these problems. The paper will conclude by examining forms of pedagogy and aspects of teacher education that seem likely to promote this dimension of professional activity.

TEACHING INSTITUTIONS AND THE DEMOCRATIZATION PROCESS IN SOUTH AFRICA

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Southern Africa

Among the legacies which policy of the apartheid will leave in the new South Africa are economic and educational inequalities among the different races of the country. Notable in these areas of South African society is the wide gap between the white and black members of the society. The paper argues that a democratic culture in the new South Africa cannot be a reality unless equal opportunities are

created in the economic and educational spheres for all its races. Moreover, since for a long time, the majority of the population in the country, especially black people, were cut away from participating in the democratic institutions of society, a democratic culture will be a long learning process for them. On the basis of this latter argument, the paper will also examine the role of the teaching institutions including teacher education in the promotion of a democratic culture in South Africa.

The final paper will be organized as follows:

Section One is a brief background to the apartheid system in relation to the different educational and economic opportunities of the different races in the country.

Section Two looks at the role of teaching institutions, especially teacher education in the promotion of a democratic culture in South Africa.

Section Three analyses the limitations of the existing teaching institutions in the promotion of the democratization process.

Section Four examines the role of the government and nongovernmental organizations such as the church, political parties/movements, etc., in the teaching of a democratic culture in the country.

COOPERATIVE LEARNING: DEMOCRATIZATION OF THE CLASSROOM

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The problem of this study was to answer three questions related to cooperative learning in settings from kindergarten through graduate school: (1) What is cooperative learning? (2) What cooperative learning models are most widely used? and (3) What does current research indicate about the effectiveness of cooperative learning? Thirteen studies reporting research findings on cooperative learning over the last decade were reviewed and summarized.

In cooperative learning, students work together in small groups to help each other master academic material at various levels of complexity. Major elements of cooperative learning include group goals, positive interdependence, face-to-face interaction, individual accountability, interpersonal skills, structuring, and group processing.

Cooperative learning models fit into two broad categories: structural approaches, and content specific approaches. The most frequently used and researched structural models are Jigsaw, Student-Teams-Achievement-Divisions, Think-Pair-Share, and Group Investigation Team. Assisted Individualization and Cooperative Integrated Reading and Composition are widely used content-specific approaches.

Findings indicate positive results for cooperative learning in all of the following areas: academic achievement, self-esteem, cross-race friendships, mainstreaming, and social skills development. Structural approaches and content-specific approaches both yield positive results, especially in the area of academic achievement.

ART: A TOOL FOR DEVELOPING SELF-ESTEEM AND CULTURAL AWARENESS

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Art education is not just about training young artists; it can also be an effective tool for developing critical thinking skills and self-esteem in all students. Art education that allows students to work independently the majority of the time and offered on a regular basis seems to help build self-esteem. It achieves this by allowing students to access and implement their own ideas, thereby developing their critical thinking skills. In addition, students that are offered the opportunity to work independently seem to relate more to their culture and environment because they are important resources for ideas and identity.

Nine years' practice of independent art education and six years of study held at two private educational institutions (from 1984-1990) involving approximately 850 students ages 12 to 18, suggests that students, when given the choice, would rather work independently. Art teachers that facilitate independent art work are helping the student develop critical thinking skills as well as an appreciation of the artistic process. This does not seem to happen as markedly in programs that use task-oriented and cross-disciplinary art education because the artistic process is secondary to another outcome.

EDUCATIONAL POLITICS AND DEMOCRATIZATION — THE PROBLEM OF VALUES

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Brazil

The paper is a critical study on educational politics and the problem of values in a democratic education.

Some basic concepts are discussed such as democratic education and education for democracy, educational politics and policies, and the problem of values in education.

The impact of technology and media on social institutions, mainly the school, is discussed as well.

The main issue dealt with in the paper is, though, the need for and the role of a clearly devised philosophy of education and educational values to inspire the preparation of teachers and education in general. This would lead to enfranchisement of a large number of students who are educationally deprived as well as to school systems and curricular reform.

Though the paper is not a research report it is the outcome of a number of research works done by the author and doctoral students in developing countries and their political and educational struggle to achieve democracy.

National Project on the Vocational Training of Young People: A Research Study Aimed Especially at the More Disadvantaged Students — The Culturally or Economically Deprived, Disabled and Immigrants

Enrica Mazzuchin Marin
IRRSAE FRIULI-VENEZIA GIULIA
Italy

This three-year project takes into consideration, on the one hand, the present situation of isolation of the school systems faced with the rapid changes taking place in the social field and in the job market; and on the other hand, the situation of uncertainty, anxiety, malaise of all youth in general, but particularly of more disadvantaged students, who find it difficult to keep pace with the traditional teaching methods. The condition of uneasiness is made worse by the "European rendezvous" and by the impossibility to build in a short time a common European school system.

This project has been thought of as a "module" and put to work within an experimental teaching unit meant to achieve a closer interaction between school and society. The project was aimed at both headmasters and teachers of about a hundred schools chosen as trying grounds.

It is the first national project whose purpose is to define a viable line of conduct as far as "integrated counseling" is concerned and which can be regarded as suitable to be expanded to a European dimension. Such a project has, in fact, been carried out jointly by the GENERAL DIRECTION FOR VOCATIONAL TRAINING, Ministry of Public Education, and by the Regional Institution for Research, Experimentation and Teacher Training (IRRSAE) FRIULI-VENEZIA GIULIA on the basis of a research study devised by Professor Enrica Mazzuchin Marin, who is, currently, the Italian expert officially accredited to EEC for the PETRA project on youth counseling. PETRA is the European Action Programme for the Vocational Training of Young People.

Special Education and Early Childhood Education: A Program of Excellence in Teacher Education Through Collaboration and Shared Responsibility

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Robert G. Monohan
Lander College
USA

To meet the challenge of instruction in special and early childhood education there is a need for change in teacher education programs. The approach must be broader and requires a new outlook on the disciplines and the world. The presenters will share a unique transdisciplinary teacher education program which combines special education, early childhood education, elementary education, and secondary education into a viable course of study. Through a well-selected curriculum, clinical experiences with master teachers, individualization, flexibility, faculty collaboration, and technology, prospective teachers acquire a knowledge and understanding of the role of the teacher in the classroom, their own performance and progress, how to meet the needs of diverse student populations, and the facilitation of success among all students in a new era of teacher education. In order to train prospective teachers more effectively and efficiently the program draws on and supports the combined talents of colleges and public schools. Through this model of collaborative teacher training, the students become empowered to meet the ever changing demand's of the teaching profession.

PROMOTING STRUCTURAL CHANGE IN TEACHER EDUCATION FOR A DIVERSE SOCIETY

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The proportion of culturally diverse students in elementary and secondary schools in the United States is increasing, and these students now constitute the majority in many urban areas. School leaders, counselors, and teachers must develop greater understanding of the role of ethnicity, culture, and language in classrooms and have the knowledge and skills essential to be effective in diverse settings. Colleges of Education have a substantive role to play in this effort.

The proposed presentation describes the comprehensive, multiyear strategy for structural change in the College of Education at San Diego State University aimed at strengthening the College's ability to prepare professionals to serve the needs of diverse learners. The Model for Structural Change will be presented, followed by a description of the Multicultural Infusion Initiative. This Initiative, currently in its second year of funding, seeks to increase faculty expertise in multicultural education and infuse professional preparation curricula with content and instructional strategies appropriate to today's schools. Results of the Initiative's first-year evaluation will be discussed and elements key to structural change will be identified.

Preliminary data indicate strong faculty participation and perceptions of impact. Key elements contributing to success include identification of multicultural infusion as a College imperative; participatory planning and decisionmaking; joint faculty and administrative leadership; accommodations for individual- and department-specific needs; provision of an open forum for discussion of issues related to multicultural paradigms and goals; and recognition of faculty activities.

ISSUES AND TRENDS IN CURRENT DEVELOPMENT OF TEACHER EDUCATION IN CHINA

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In the past ten years, the Chinese Government has tried every possible measure to raise the social and economic status of the teaching profession; and consequently teachers' social status has been in fact greatly improved and their economic income notably increased as compared with 10 years ago. But if compared horizontally rather than vertically, it is not difficult to find that the real incomes of those engaged in other professions or occupations have increased much faster and thus teachers' income is still relatively low among all walks of life, which certainly does not make the teaching profession attractive. The problem of teachers' low pay has currently become the major obstacle in development of teacher education and the teaching profession, for it not only has direct negative effect on the admission of teacher training programs and the pre-service training, but also on-the-job assignment on graduation and the management of school teachers.

Another major issue in the current development of teacher education is the serious shortage of qualified teachers, which is not only an issue today, but one that will remain a big issue for a certain period of time "tomorrow," especially in remote or rural areas. The main task of the current development of teacher education in China as a whole is still to attain balance between the demand and supply of academically qualified school teachers. Therefore, it is quite impossible to require that the elements of the teacher education system be well linked or articulated as part of the common target to improve the quality of basic education — not while expansion in quantity is still a main task of teacher education development.

What are the problems we'll have to meet after the balance between demand and supply of teachers is attained? We can approach this issue in the current trends of teacher education development in some educationally developed areas, especially in coastal regions and inner cities, where teachers of some specialties or subjects have already become over-supplied. They are now facing the challenge that most areas in China will meet tomorrow.

THE DEMOCRATIZATION OF ACCESS TO EDUCATION IN THE FIRST DECADE OF ZIMBABWE'S INDEPENDENCE 1980-1990

Samuel C. Mumbengegwi
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This paper is a comparative study of the education system in Zimbabwe during the colonial era and the first ten years of the country's independence. It analyzes the educational policies and their impact on enrollments, prior to independence and it does the same for the postcolonial era. What emerged under colonial policies was a dual educational system, one for the Europeans as the ruling oligarchy and the other for Africans as the underdogs. While the former system was generously provided for, the latter received scanty resources from the state. The Africans, despite their unmitigated poverty had to construct their own schools and pay fees for their education. Consequently, only a small number of African children had access to education, and even among those few who enrolled for school, dropouts were very numerous.

After discussing African reactions to the colonial system, the paper also analyzes postcolonial policies. Racism was dropped, and a unitary system was established. Free primary education was introduced, which resulted in phenomenal growth in enrollment at all levels. This overnight democratization of access to education created many problems and strains on the system. Inadequate teacher supply, text books and stationery shortages and allegations of declines in the equality of education were some of the problems the expanded system confronted. The government's response to these challenges is examined and tentative conclusions are drawn.

THE ROLE OF FIELD EXPERIENCES IN PREPARING TEACHERS FOR URBAN SCHOOLS

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USA

Growing numbers of students attending schools in urban areas worldwide have created a shortage of qualified teachers to meet the demands of inner-city schools in many countries. Many prospective teachers view inner-city teaching with apprehension. The present study, conducted over two years, documents the success of an eight-week field practicum for pre-service elementary teachers aimed at improving candidates' knowledge of and attitude toward urban school teaching and students from diverse cultural and socioeconomic backgrounds. Data were gathered on 175 university undergraduates enrolled in a program leading to elementary certification who completed the field practicum in either inner-city or suburban schools. Pre- and postcomparisons were made between their attitudes toward inner-city teaching and their perceptions of potential problems encountered in urban or nonurban schools (e.g., student ability, motivation, discipline, language proficiency, etc.).

Statistically significant differences were obtained in participants' attitudes as a result of the field experience and the setting in which it took place. Analysis of written narratives produced by the undergraduates were used to explain variability in the effect of the field experience. Characteristics of the field experience intervention that lead to its success and recommendations based on the findings will be presented.

THE DEVELOPMENT OF NEW IN-SERVICE AND FURTHER EDUCATION PROGRAMMES IN AN ERA OF CHANGING SOCIAL AND POLITICAL CONDITIONS — A CASE STUDY OF NATAL/KWAZULU (SOUTH AFRICA)

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The education of the Black people of Southern Africa is probably the most critical and immediate problem that confronts us. In an era of rapid political change the main battle will be fought in the classrooms and not with AK-47 rifles. If this crisis is not resolved it will lead to further discord and political and economic instability in the years that lie ahead. Black education is now to a very large extent in the hands of teachers who are unqualified, underqualified, inappropriately qualified and who possess only limited academic and professional training. The system of apartheid has left a legacy that may take several decades to eradicate unless a bold and innovative strategy is adopted.

This paper puts forward a proposal for the implementation of a meaningful In-Service and Further Education programme in the Nata/KwaZulu region of South Africa. The authors firmly believe that this model could be applied successfully to any other region of South Africa as well as to many other countries with similar educational challenges. It also explores new ways of delivering information to teacher educators and empowering them through the pursuit of the democratization of education.

PREPARING TEACHERS FOR CLASSES OF LEARNING DISABLED AND EDUCABLE MENTALLY HANDICAPPED AFRICAN- AMERICAN CHILDREN

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USA

A study by the American Association of Colleges for teacher Education entitled "Teacher Education Pipeline: Schools, Colleges, and Departments of Education Enrollments by Race and Ethnicity" found that the proportion of Black, Hispanic, Asian and American Indian/Alaskan native elementary and secondary students is far greater than that of the future teaching force. The study shows that 33 states have elementary and secondary minority enrollments of 20 percent or more; however, only six have higher education institutions with schools, colleges, or departments of education with minority enrollments greater than 15 percent. By 1995, it is predicted that the American school-age population will be more than 30 percent minority while the minority teacher population is predicted to be five percent of the teaching force.

Franklin (1987) and Cooper (1988) cite the need for African-American teachers and administrators to serve as role models for young African-Americans. These professional adults serve as "significant others" for African-American children; that is, they are persons who act as appropriate role models and who are capable of enhancing the self-concept of young African-American students. This is especially important in the lives of inner-city and rural children who may otherwise lack contact with educated, intelligent, successful African-Americans.

This paper discusses a project designed to prepare African-American teachers for learning disabled and educable mentally handicapped African-American children at Southern Illinois University at Carbondale.

TEACHERS IN RURAL SCHOOLS: THE "EXTRA" THEY NEED

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Halimaton Halaliah Mokhtar
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More than half the primary schools in Malaysia are found in rural areas. How prepared are teachers to teach in these schools?

This paper discusses the findings of a study which was carried out recently on 287 primary teachers and 24 principals in a rural Malaysian district. The intention was to gain a profile of the teachers, their perception of school facilities, students, parents, principals and the adequacy of teacher training. Interviews were conducted and questionnaires administered.

The data show that generally teachers are satisfied with the basic facilities available in their schools. They find their work challenging, and they are committed to serve rural communities. However, they are constrained by lack of parental involvement, low motivation among pupils, inadequate residential facilities and teaching aids. They perceive their teacher preparation as generally adequate, but indicate that more needs to be done, for example, a longer pre-service exposure in rural areas, teaching methods and subjects tailored to rural needs, skills in producing teaching aids and carrying out suitable co-curricular activities. However, they agree that guidance and support given in schools are more important than college preparation.

The paper discusses implications for teacher education (pre-service and in-service) and school support for teachers.

THE SYSTEM OF TEACHER TRAINING IN LITHUANIA REBORN: WAYS AND CONDITIONS OF DEMOCRATIZATION AND MODERNIZATION

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The March 11, 1993, act mandating the restoration of independence makes it imperative to change the social functions of the school in the direction of fostering democracy. The school education of the younger generation must be the guarantor of progress and constant renovation of state democratic

structures. It must become a strong foundation for the progress of morality and national mentality. The main constituent part of this process is democratization and modernization of the teacher training system. That is why the legitimately elected state and government structures of Lithuania seek the creation of political, economic and social conditions conducive to the process of democratization in education.

We base our quest for democratization and modernization upon three factors. First, the task to revive Lithuanian pedagogical thought, which bolshevism was sent to oblivion or forcefully annihilated. Lithuania had a rather profound pedagogical thought and experience of its own (16th–17th century, V.J. Agripa, the ideas of Viinius University; 18th century — J. Boreika, K. Narbalas; 16th century — A. Daugirdas, L. Reza, M. Valancius; interwar period of independent Lithuania — K. Puida, St. Salkauskis, A. Maceina, etc.). Second, the task to accumulate the teachers' spiritual resistance manifested during the period of bolshevik occupation. This resistance maintained and fostered empirical pedagogics, free of coeval antirational ideology. Third, the task to make use of the methodological experience of European and world democratic educational systems, the task to acquire the contemporary technology and techniques of teaching.

Reorganization of teacher training goes along definite lines; teaching content and curricula are being made free of ideology, and contemporary teaching structures are being created. An attempt is being made to enhance the humanitarian content of teacher training, making use of the history of the nation, its ethnic culture, traditions and their understanding against the world background.

New social, economic and legal conditions for training a new generation of teachers are being created. The Supreme Council of Lithuania passed the laws of science and studies, on education aimed at the democratic system. The higher educational institutions of Lithuania, which train teachers, acquired academic autonomy accepted in the free world. The Lithuanian government, even under the difficult economic conditions of the transitional period, tries to refute the principle of the residual funding of education and science.

In solving the problem of teacher training modernization, acquiring contemporary teaching equipment, much hope rests upon the cooperation with western European and world educational establishments, international educational organizations, integration in the diverse structures of education and science. In 1991, the association of the higher educational establishments of the Baltic countries was founded. Heartfelt help comes from the Scandinavian countries, Germany, and other countries.

RE-FRAMING ART: A GLOBAL PERSPECTIVE ON VISUAL CREATIONS

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Across cultures, past the boundaries of time and place, human beings have created visual images, giving expression to beliefs and hopes and fears.

These creations have been defined as "art" or "not-art" primarily through the concepts and language of the West, without regard to how the creation or creator were defined within their own context.

Investigation into the rules and customs governing creation of visual imagery within varying traditions raises serious and, as yet, unanswered questions on how to teach about these creations with integrity. Evidence suggests that while there may be a universal drive toward the esthetic, there does not seem to be an esthetic which is universal.

Even the term "esthetic" is problematic when applied across cultures, since there are traditions in which nothing can be beautiful without representing the morally good. Innovation and self-expression, valued in the modern West, are not universally shared values.

The contradictions and inconsistencies which prevail must be acknowledged and explored. If art is to be taught from a genuinely global perspective, new concepts and language which translates across traditions must be developed.

MAKING MULTICULTURAL GLOBAL EDUCATION WORK: THE ROLE OF THE TEACHER EDUCATOR IN THE 1990s

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USA

The goals of our educational reform movement are to prepare all students to function as informed and effective citizens in a democratic society, in order to function effectively in our everchanging global community. Today's classroom teacher will work with increasingly diverse groups of students. The need has never been greater to understand the cultural dimension of teaching and learning, and for teachers to apply knowledge of diverse cultures to curricular decisions they make every day.

This paper will address issues relative to building teacher education programs that model multicultural education as a force to improve educational equity; integration of multicultural global education concepts across curriculum areas; and multicultural education as a bridge to global education. This article will provide a theoretical framework for implementation of multicultural global perspectives highlighting the benefits of a successful teacher education program through the collaborative efforts of university, state, and public schools.

HELPING THE DISABLED SCIENCE STUDENT (GETTING A GRIP ON SCIENCE)

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In England and Wales, the official approach to the education of children with special educational needs changed in response to the recommendations of the Warnock Report 1978 and the subsequent legislation of 1981. Segregation was replaced by integration and access to a full secondary curriculum including science became the right of many special needs children. Nevertheless, the apparent inability of some children to handle apparatus and the anxiety of staff over their safety meant that too many physically disabled children were still deprived of full participation in laboratory activities.

A generous grant from the Wolfson Foundation enabled a project team (drawn from Nottingham University's School of Education, its Department of Mechanical Engineering and Nottingham Polytechnic) to analyze problems encountered by both disabled and normal children and to design, field test and develop clampstand adaptations to facilitate those clamping, holding and pouring tasks common in practical science classes.

Several examples of the final design are currently in use in Nottingham schools.

While there is some training (initial and in-service) for science teachers in the area of laboratory tasks for special needs children there is need for sharper focus. There is also further need for related research and development projects and for a wider circulation of successful classroom initiatives.

LA EDUCACION PRIMARIA RURAL EN EL ESTADO DE SAN LUIS POTOSI, MEXICO

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Mexico

La problemática educativa de esta entided federativa no es ajena a la problemática educativa nacional, ya que influye determinantemente el alto endice demográfico, el desempleo, la desintegración familiar, el alcoholisms, la dorgadicción y los problemas sociales en general; ésto demuestra que es necesario reforzar la acción educativa con programas cada vez más eficientes.

Es necesario expresar que desde 1980 se aseguró la Educación Primaria para todos los niños potosinos, lo cual representó un extraordinario esfuerzo en cuanto a recurses humanos y económicos, esto de ninguna manera significa que se haya solucionado la problemática en este nivel; por el contrario, la calidad académica es baja, habiéndose quedado rezagada con respecto al crecimiento del servicio educativo.

Podríamos preguntarnos: ¿Cuál es el motive por el que no se cumple con los planes y proyectos educativeo? ¿En quién estriba la deficiencia? ¿Porqué nuestros alumnos no alcanzan el perfil deseado?

La problemática de la insuficiencia es culpa del Sistema de Gobierno que establece los planes y programas de estudio; o somos los maestros los culpables de esa deficiencia. ¿Es que acaso, la mejor educación es sólo para la clase privilegiada? ¿Qué se ha hecho por la Educación Primaria Rural? El trabajo de esta investigación nos lleva a reflexionar sobre nuestra práctica educativa a fin de presentar posibles alternativas de solución.

TEACHERS' ATTITUDES TOWARD THE MAINSTREAMED LEARNING HANDICAPPED STUDENTS IN THEIR CLASSROOMS

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Previous studies have shown that teachers hold negative attitudes toward mainstreamed students. These studies used vignettes or general questions rather than real mainstreamed learning handicapped students when investigating teachers' attitudes. The researchers assumed that teachers with negative attitudes toward mainstreaming would reject handicapped students. This investigator completed a study to explore teachers' attitudes toward their mainstreamed learning handicapped students. A sample of 44 fourth through sixth grade teachers completed attitude questionnaires about selected learning handicapped and nonlearning handicapped students in their classrooms, personal data forms about themselves, and behavior profiles for each student selected from their classrooms.

Teachers were more rejecting toward learning handicapped students as compared to nonlearning handicapped students, but they reported attitudes of concern for their mainstreamed students significantly more often than attitudes of rejection. Teachers' successes with students were significantly correlated with positive teachers' attitudes. Students whom teachers perceived as exhibiting less ideal student behaviors were more likely to be rejected by teachers, without regard to handicaps. Since teachers' general attitudes toward mainstreaming did not relate to teachers' specific attitudes toward real students, teacher training should focus on providing teachers the expertise to be successful with learning handicapped students rather than changing teachers' attitudes toward mainstreaming.

DEMOCRATIZING THE EDUCATIONAL ORGANIZATION: THE NEW LEADERSHIP COMPETENCIES

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USA

Democratization of education begins with restructuring the bureaucratic organization. Peters's In Search of Excellence (1982) and the U.S. Secretary of Labor's report, "The Secretary's Commission on Achieving Necessary Skills" (1991), state that such restructuring is occurring in business and industry and in leading organizations throughout the United States. Educational institutions are calling for restructuring as well, in order to serve diverse populations and to develop critical thinking and problem solving skills for all.

A pilot study of three contrasting organizations involved in restructuring was carried out in order to describe competencies needed by their leaders. Naturalistic methodologies were employed and investigators were participant observers within a Fortune 100 company, a medical center and a college of education.

Preliminary findings suggest that leadership behavior was dramatically different in these settings as contrasted with bureaucratic structures. Leaders needed to be highly competent in communicating a vision; establishing structures for self-directed work teams; critical and reflective thinking; and in maintaining positive human relations. Professional development and support was needed for leaders as they engaged in the restructuring process.

Findings of this study strongly suggest that today's educational leaders would benefit from developing these competencies.

CHINA'S TEACHER EDUCATION IN THE PERIOD OF TREMENDOUS CHANGE IN RURAL AREAS

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Under the guidance of the policy of realizing modernization, a vast rural area with a population of over 800 million is undergoing a profound change, i.e., a transition from traditional agriculture to modern agriculture and a diversified economy.

To carry out the strategy of promoting agriculture by science and technology and education, to transfer agriculture development to the track of depending upon scientific progress and improvement of the workforce quality — all this leads to the combination of agriculture, science and education, pushing forward the education reform in the vast rural area in China.

The combination of agriculture, science and education, and the development of vocational education, general education and adult education require large numbers of qualified teachers and call for reform in teacher education.

To carry out the reform in teacher education, we must foster a guiding ideology, i.e., "to educate according to need" and proceed from the local situation. We must keep contact with schools of various

kinds and departments in charge of agriculture and science and technology. We must also take an active part in the great practice of "promoting agriculture by science and education" so that "the function of machine tool" of teacher education can be brought into play in education activities.

In the great practice of "promoting agriculture by science and education," institutes of education should play a distinctive role.

USING FAMILY HISTORY TO STUDY GLOBAL ISSUES

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The magnitude, complexity and often unpredictable course of global issues challenge teachers to find new ways to engage students in studying these issues. Webster University and several elementary and secondary schools collaborated on an in-service program aimed to make global issues relevant by linking those issues to students' personal experiences and family histories. Topics such as environmental degradation, over-population, and international conflict and war were addressed.

The method involved five steps: (1) Identify a family member whose life was touched by a global issue. (2) Interview that family member and others close to the experience. (3) Find the meanings and conclusions the family members have drawn. (4) Compare the family's response to the community, national and international responses to the issue. (5) Develop personal meanings and plan for short-term and long-term action.

The teachers first applied the method to themselves, connecting their own family histories to global issues before they required students to do the same. The intimacy of family experiences stimulated personal concern and new commitments regarding the topics studied. Teachers and students found commonality between their families and similar experiences of both neighbors and foreigners. The strategy also raised awareness of family legacies, expanded self-knowledge and enhanced self-esteem.

WHERE WE HAVE BEEN AND HOW WE MUST CHANGE: THE WESTERN TRADITIONS AND A MULTICULTURAL RECONSTRUCTIONIST FUTURE IN EDUCATION

Louise M. Tomlinson
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Literacy must be defined, understood, and developed to its maximum capacities. Instruction must focus on the interests and ideas that emanate from the learner — particularly in early education. The "intent" of curriculum is crucial and warrants close scrutiny with regard to diversity in content, relevance to the learner, and expectations for the learner.

The Scholar Academic, Child Study, Social Reconstructionist, and Social Efficiency ideologies all have value and can benefit a variety of teachers if used interchangeably or combined in an eclectic approach. However, to meet our most pressing world needs, curriculum reform must be largely guided by the Multicultural and Social Reconstructionist movements.

If we do not embrace the best interests of all of our people(s), then we will remain a world at risk. Nations of the world that are now on the cutting edge of our global economy are, each, considerably homogeneous in population. If we continue to enforce the kinds of patriotism, nationalism, and isolationism that perpetuates cultural discrimination, the world will face its demise.

Biases and inequities have been both intentionally and unintentionally practiced. Many individuals and institutions have exercised biases as naturally as involuntary reflexes. Biases must be unlearned. Respect for and appreciation of differences must be infused into curriculum at all levels and all phases of education and higher levels of learning must be expected and developed for everyone.

NEW SYSTEMS OF INSTRUCTIONAL DEVELOPMENT

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Methodological suggestions for dynamization of knowledge in the CREN classroom in Iguala, Guerrero, México.

Justification: "The Banking Education" attacked by Freire must be changed by a concept of education participation on which thinking and action of students and teachers are combined to build the knowledge needed for the group, the family, the social class and the community.

TEACHING CYCLE ORGANIZATION

Planning:

- The academy elaborates its integration plan by semester
- The group and the professor elaborate the internal strategy of each unit

Construction of knowledge:

- Contents problems
- Referential and field investigation
- Comparing results
- Developing a "scientific" report

Generalization of knowledge (socialization):

- Group sessions to discuss team reports

Evaluation:

- Environment conditions
- The program
- The resources
- The professor
- Teaching test

The pupils and lecture coordinator participate directly in everything.

UNITED STATES SCHOOL DISTRICTS' RESPONSES TO THE EDUCATION OF HOMELESS CHILDREN

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The Stewart B. McKinney Act, passed in 1987, requires that each state educational agency assure that homeless children and youth be provided access to a free, appropriate public education. This study reports the results of a nationwide survey conducted to determine the extent to which the Stewart B. McKinney Act has been addressed by school systems.

The survey results represent 102 school districts in the 50 largest U.S. cities. Sixty-six percent of the school districts reported that homelessness is nonexistent or minimal. In the remaining school districts, enrollment of homeless children in schools has risen steadily since 1987. Thirty-three percent of the school districts revised residency laws which were a barrier to school entry. While 43 percent of the school districts have received funding specifically for the education of homeless children, 50 percent of the school districts have made no plans to assist. Special provisions made for school systems include transportation, clothing, school supplies, teacher in-service, and afterschool and summer programs. Various models for educating homeless children were identified. These include placement in regular classrooms, transportation to school of origin, and special classrooms or schools. Small school districts and low SES school districts report that homelessness is a problem and have responded more extensively to the problem.

ABSTRACTS OF ALL ACADEMIC PAPERS BY TOPIC

World Assembly Topic Two

THE PROFESSIONALIZATION AND STATUS OF TEACHER EDUCATION AND THE TEACHING PROFESSION

Studies related to the professionalization of teacher education and teachers; efforts to make the teacher and teacher educators into a professional cadre that corresponds to other professions that serve the physical, mental, legal and social health of society; assessment of the current status of teachers and teacher educators according to prevailing and future criteria of professionalism; local and national studies of teachers' status.

TOPIC TWO, INDEX OF ABSTRACTS

Alphabethical by Author

BEIT BERL COLLEGE, 1980-1990: A CASE STUDY OF THE PROFESSIONALIZATION OF TEACHER EDUCATION IN ISRAEL

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The study examines a decade of transition in the professionalization of teacher education in Israel through the recent history of the largest teachers college in the country. The processes which marked this decade were defined externally, but set in motion unanticipated internal dynamics.

Specifically, the process of change was initiated by a series of national reports and the decision of the Council for Higher Education to turn some of the teacher education colleges into academic institutions. The goals of this policy were fully achieved: an extended pre-service program with a more rigorous curriculum, higher admission requirements, and a more qualified faculty.

More interesting, however, were the unanticipated outcomes of this academization process at Beit Berl College: (a) the internal academic structure and decisionmaking procedures had to be modified; (b) the relationships between the academic course of study and the apprenticeship/practicum component became strained; (c) new school-college partnerships and models of interaction between the college and the field became necessary; (d) internal evaluation studies were started; (e) collaborative research with other institutions emerged; (f) networking with teacher education institutions in Israel and abroad became imperative.

The nature and the implications of the above processes are identified and discussed.

COGNITIVE CONFLICT AND PERSONAL TEACHING EFFICACY: THEIR USES IN PRE-SERVICE AND IN-SERVICE TEACHER TRAINING

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Personal teaching efficacy, the individual's assessment of his or her own teaching competence, both affects student achievement and contributes to the teacher's satisfaction with choice of career. Based on Albert Bandura's model of self-efficacy, a teacher's sense of being able to influence the learning of students is situational, varies greatly by individual, and is alterable. Feeling either empowered or powerless directs the actual classroom behavior of teachers and their choices of curriculum, strategies and methods. Every teacher should have the background to recognize and analyze the effects of efficacy in the classroom and to seek assistance when their sense of teaching capability is negatively affecting student learning.

The constructs of personal efficacy and personal teaching efficacy are first presented and delineated along with recent findings of their impact on teacher behavior and student achievement. A description of how skill acquisition can affect low efficacy which is also associated with learned helplessness follows. Next a training methodology employing cognitive conflict, self-reflection, and practice is described. This training has increased the personal sense of teaching competence for a group of preservice teachers. Finally, projected uses of this and similar training methodologies are described.

UNA EXPERENCIA DE FORMACION DE INVESTIGADORES CON PARTICIPACION DE DOCENTES DE EDUCACION PRIMARIA

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Este trabajo constituye fundamentalmente el relato de la ejecución de un programa dentro del proceso de formación de investigadores en una Escuela Normal, mediante la participación de personal académico de la propia escuela en el diseño y desarrollo de proyectos en los que se involucró también a docentes de escuelas primarias y jardines de niños, en calidad de auxiliares para tareas de investigación.

El programa abaró siete proyectos a través de los cuales los formadores de docentes, a la vez que incursionaban en el ámbito de la investigación, se acercaban a la cotidianidad de las escuelas, en las cuales habrin de desempeñarse los profesionales que se están preparando en la Escuela Normal. Asoma aqui la búsqueda del pretendidónexo docencia-investigación.

A través del programa se atacó del rezago en la titulación de los profesores que fungieron como auxiliares y se propició la elaboración de documentos recepcionales, para que incluso los catedráticos responsables de los proyectos pudieran acceder en este caso al grado de licenciatura.

Se hicieron confluir mediante determinado mecanismo dos aspectos especialmente problemáticos: Investigación y titulación. Coyuntar ambos aspectos dió margen a la construcción de una alternativa de desarrollo curricular a partir de la resolución de problemas derivados de las propias circunstancias institucionales.

NEW PARTNERSHIP — INITIAL TEACHER TRAINING IN THE UK

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There has been much debate and experiment over the last few years in respect of the relative roles of theoretical study and practical experience in the formation of teachers in England and Wales. Paralleling this has been a debate on the relationship between the training institutions and the schools in which trainee teachers practice their skills.

Early in 1992 the Secretary of State for Education announced his intention of increasing the school-based element of initial training, in secondary schools in the first instance, to 80 percent of the students' time. Furthermore, responsibility for training would in future pass largely into the hands of the headteachers in the schools.

The paper will discuss the implications of these proposals for the professional training and status of teachers as well as presenting and analyzing some of the newer developments in the partnership process in the Sheffield area.

TEACHERS' PROFESSIONAL ETHICS AS RELATED TO STUDENTS' EDUCATIONAL OUTCOMES AND ORGANIZATIONAL CHARACTERISTICS

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Professional ethics are believed to be critical components of professionalization of teachers. In order to foster educational professionalism, recently, representatives of teachers, principals, school management and sponsors from 63 educational organizations in Hong Kong have prepared a code for the education profession. Even though the people in Hong King are still working on organizing a professional governing body for implementation of the Code, it should be interesting to investigate how professional ethics based on the Code are related to students' learning and teachers' job attitudes in schools. Furthermore, if we believe that ethical climate can be fostered in schools, it is also important to explore how teachers' professional ethics are related to school organizational characteristics such as leadership, social norms, and organizational structure.

This study aims at studying the above questions. It is a cross-sectional survey. The measure of teachers' professional ethics was developed based on the Code for the Education Profession (1990, Hong Kong). The students' educational outcomes were assessed by seven indicators including self-concept, attitudes to peers, teachers, schools, learning, feeling of homework overload, and intention to dropout. The teachers' job attitudes were described by seven indicators and the school organizational characteristics were assessed by 16 indicators of principals' leadership, teachers' social norms, and organizational structure.

There were 60 primary schools, 60 principals, 1,476 teachers and 7,969 students involved in study. Multivariate analyses were used to analyze the data. It was found that the measure of teachers' professional ethics were strongly related to most indicators of students' educational outcomes and teachers' job attitudes. Among the organizational characteristics, principals' leadership seems to be the critical predictor of teachers' professional ethics. The implications for future study and for fostering professionalism in schools were also discussed.

BEGINNING TO MAKE A DIFFERENCE: LEARNING TO QUESTION SCHOOLING THROUGH STUDENT-TEACHERS' PERSONAL THEORIES AND CRITICAL REFLECTION

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and
Deakin University
Australia

All teachers have strongly held, but not necessarily conscious, "theories" about teaching and learning, which influence their teaching practice. These "theories" have been formed over many years as learners, if not as teachers, and as such, tend to perpetuate the system. Therefore, if in the future, education is to become better able to contribute to liberation and democratization; if teachers are to be able to enhance the life chances of all of their students, then I believe that these "theories" must be confronted. With this intent we have developed a program in which we work to enable our students to

become aware of the theories which inform their practice, and to critically reflect upon how schooling has been structured. After a brief description of what we see as an "evolving" program, this paper focuses on two elements: the first is some of the difficulties which our student-teachers experience as they try to come to grips with different ways to conceptualize their chosen profession; the second is the role of tutors when they work with, and through their students' resistance. I conclude with what we see as necessary conditions for students to question their own "theories" and the school system.

PERCEPTION OF OUR FUTURE WORLD: AN IMPERATIVE FOR TODAY'S TEACHER EDUCATION PROGRAMS

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Nowadays, the world undergoes rapid changes in several facets. Certainly, the impact of scientific, technological, political, economic and sociological changes on education is remarkably significant. Consequently, our nations are facing serious future educational challenges. Can we provide fruitful solutions for our educational future?

One can claim that the realization of our educational objectives in a rapidly changing world necessitates accuracy of perception of our future world. Distortion of social perception is misleading in the process of modifiying or redesigning today's Teacher Education Programs.

A questionnaire has been administered to a sample of in-service teachers who are pursuing a postgraduate course in education. The questionnaire aims at detecting the teachers' awareness of current and future world changes, role expectations and role conception, their probable acceptance or refusal of role changes, and the impact of these variables on role performance.

Accuracy of teachers' social perception, i.e., their insight into future world changes has been estimated and compared with their efficiency and effectiveness in the classroom as evaluated by school inspectors and university supervisors. The results of statistical analysis indicate the influential role of perception of our future world in today's Teacher Education Programs.

THE ROLE OF THE TEACHER IN YOUNG CHILDREN'S PLAY

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USA

This paper reviews literature on teachers' roles in children's play, discusses implications for teacher education, and proposes ways to help teachers better understand and perform their roles. Discussion focuses on research identifying four teacher roles: observer, organizer, participant/leader, and trainer. Research also shows that large numbers of teachers seem ill-prepared or unwilling to assume some or any of these roles, perhaps because of inadequate training. Discussion concludes with six suggestions for teacher programs working to incorporate the teacher's role in children's play as a basic program component.

PUBLIC SCHOOLS AND UNIVERSITIES: PARTNERS IN THE PROFESSIONALIZATION OF TEACHING AND TEACHER EDUCATION

Teresa Turner Field
West Virginia University
USA

Creating connections between the colleges of teacher education and the institutions where they will begin their teaching career is one goal of the Holmes Group, an organization of over 100 American universities interested in education reform. Curricular reform in both higher education and public schools and collaborative partnerships that support the use of "best of practice and the best of research and theory" in both institutions are being instituted throughout the United States.

One such project is the Benedum Project of West Virginia University. For the past three years, over 350 educators — 110 from higher education and 150 from the public schools — have worked to redesign the teacher education program at West Virginia University and to establish a Professional Development School (PDS) to address the professional concerns of in-service teachers and provide for the training of pre-service teachers and other undergraduate teacher education students.

This presentation will describe the processes used to establish collaborative relationships between public schools and higher education. Components of the new teacher education curriculum will be discussed. Also provided will be examples of projects and activities in each which have helped create new institutions whose mission is to create the best possible environment for teacher development and professionalization.

LA PROFESIONALIZACION Y ESTATUS DE LA EDUCACION DE MAESTROS

Ganett Saleh Gattas
Bertha Estela Garcia Gonzalez
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Escuela Normal Federal de Educadoras
México

El desarrollo económico, politico y social de un pais se manifiesta cuando la educacion cumple con los preceptos filosoficos o productos culturales que emanan del Estado, máximo exponente del poder politico de una nación, éste se alimentade todos los grupos que lo componen, al quedar reconocido se convierte en Estado; el Estado acostumbra fácilmente a estar al servicio de un grupo de la sociedad, convirtiéndose en el instrumento de intereses particulares de ahi que un profesor no tiene por que ponerse al servicio del estado sino de la nación, transmitiendo la cultura de éste y no la doctrina de aquél; es decir maestros innovadores, reflexivós, analiticos, transformadores, trayendo con ello un ascenso de estatus profesional ya que utilizando la investigación educativa como proceso sociológico, su quehacer cotidiano obtendrá resulta dos o productos que beneficien a la comunidad en la que se en cuentra inmerso.

Las escuelas formadoras de docentes por consecuencia seguirán la misma tónica en un pérfil de egreso donde se pongade manifiesto la profesionalización cientifica, tanto de las educadoras como de las educandos, futuros docentes, sin perder de vista la politica de nación como sociedad cambiante y deseosa del desarrollo social, equiparando esta noble labor de las profesiones más hermosas que van de la mano de otras; las escuelas normales de México en todas las especialidades como variables dependientes de la historia de las sociedades puedan competir en el arte de educar como un reto especialmen te en el momento critico de la vida social de nuestro pais.

A Summary of the Six Year Research About Teacher Education (RATE) Study of Programs of Teacher Preparation in the United States

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USA

This is a summary of a six-year ongoing major study of pre-service teacher education in the U.S.A. Drawing upon survey data collected in a national probability sample stratified by institutional size and mission, both problems and progress in program development during this period of time are reported. The unique research design also trained institutional researchers annually to collect institutional and contextual data at each site. Perceptions of deans, chairs, faculty members and students in the classes taught by these faculty members were recorded. Each year different program areas (elementary, secondary) or program components (foundational study, general methods, student teaching) were the focus of the study. A core of these items and respondents remained stable each year of the study with additional items added as well as an extended sample. This allowed for trend data as well as focus on a new and expanded array of topics. The study not only reports on the quality of programs but organizational and structural changes and progress in such areas as cohort designs, portfolio development, pedagogical laboratories, case study and cooperative arrangements with K-12 schools.

An Evolving World Order: A Challenge to Education

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The University of Lapland
Finland

This paper seeks to understand the nature of world order first by approaching it from a historic viewpoint: human history is viewed, not as the traditional chain of events randomly leading one to another and creating processes, but as a function-oriented evolution of social organization where mankind reaches for, and successively attains, higher and more complex levels of order and collective welfare from the tribe society all the way to a world community. The present tendency and aspiration to create international forms of governing human affairs and security, often referred to as the New World Order, can be seen as the latest development in this evolution of social history.

The paper further examines the trends that show possible scenarios of a new global order by examining some of the views of futurist, social anthropologists, politicians and world leaders, philosophers, and opinion makers of the last few decades. Also the tendencies of latest developments in international politics as well as the radical shifts of the world's political poles are cursorily reviewed.

Some theoretical speculations on the nature of unification and its relation to human plurality and diversity are presented established on the postulate that "the whole is always more than the sum of its parts" and retaining the potential of diversity to produce, in a favorable social order, the very dynamics of a mutually beneficial form of unification.

The paper continues to examine the practical claims that the evolving global order has on the behavior of the individual and society. Presupposing the necessity of relevant goals for any systematic and manageable change, the paper proposes the keenness of vision as a holistic approach to such relevant goals. A new theoretic setup for consultation is introduced based not on the traditional consensus approach, but on generating completely new concepts and ideas through the interaction of different thought and world views. The paper also shows a connection between such a consultation setup and the present interaction of the world's different sets of value and thought.

Finally the paper challenges the ability of present educational approaches to meet the requirements of the evolving global order and outlines some proposals on the levels of value, content, and method to stir a need for transformation and serve in the updating of human education.

THE CURRENT STATUS AND FUTURE DIRECTIONS OF TEACHER EDUCATION IN KOREA

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Korea

Since september 1990, there have been dramatic changes for the teacher education system in Korea. Also there has been much argument for these changes pro and con. In accordance with these changes, many universities and colleges can't take freshmen any more in the fields of teacher education. Also the quality of teachers cannot be certain. But some universities, especially private universities, can profit much from the new system.

After liberation from Japanese rule in 1945, Korean teacher education started with the foundation of Kyungsung Teachers College in September 1945 which became the College of Education at Seoul National University. By 1990, there had been 11 national colleges of education and 26 private colleges of education founded in Korea. Also in the general colleges, for preparing enough teachers for junior high to senior high school, the courses for teacher education have been open for a long time. Therefore, the number of certified teachers increased very rapidly. And the blame for the quality of teachers occurred in the fields of education.

This is the time for changes in the content of teacher education not in the system in Korea. In this paper, the researcher will introduce current status of Korean teacher education, and insist new directions for better teacher education content of Korea.

FIELD-BASED TEACHER EDUCATION: MEETING THE NEEDS OF SOCIETY

Mark Littleton
Jim Boyd
Tarleton State University
USA

In an effort to develop a teacher education program which would prepare teachers to teach in the technology-based global society of the 21st century, Tarleton State University has developed a field-based alternative certification program. This public school/university collaborative program is designed to utilize the theoretical knowledge base of the university professor and the real world work experience of the "public school practitioner." The university, the public schools, and the program interns all have significant financial stakes in the success of the program.

The preparation program requires that trainees serve a year-long internship where they are supervised by a public school mentor teacher and a university supervisor. The university supervisor, through on-site visits and electronic telecommunications, works in collaboration with mentors to provide support services and university linkage for the intern.

Prior to the internship, students complete an intensive summer at Tarleton where they are introduced to instructional and classroom management strategies, as well as curriculum design/development. The interns return to the university campus the following summer for course work based on needs identified in the internship.

Evaluation data indicate the interns perform significantly better on the state mandated licensing examination than teachers prepared through traditional programs. Additionally, performance evaluations in the classroom indicate interns meet or exceed performances of their counterparts in traditional programs.

HIGH SCHOOL STUDENT ATTITUDES ABOUT THE CHARACTERISTICS OF THEIR "BEST" TEACHER

Faite Royjier-Poncefonte Mack
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Grand Valley State University
USA

The purpose of this investigation was to survey the attitudes of high school seniors in regard to perception of the characteristics of their "best teacher." The survey was designed to contribute to the professional literature which is abundant in its collection of material on university and teacher observations of the "best teacher" but deficient in the views of high school students in contributing to the concept of "best teacher." The survey group was limited to high school seniors enrolled during the 1991-1992 academic year in the Grand Rapids Public School District. The total number of surveys administered was 650 with a 95 percent return rate. Data is analyzed by gender and/or ethnic representation of the respondent. In general, conclusions may be established that suggest high school students' characteristics of a "best teacher" may vary greatly from the training efforts suggested by institutions of higher education and representatives of the teaching profession. The findings of the study will contribute to the professionalization and status of teacher education and the teaching profession in the United States of America, and may lead to survey replication in other nations.

Presentation materials include handouts and the use of materials displayed by the use of an overhead projector.

TRAINING FOR RESEARCH AND DEVELOPMENT OF TEACHING

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México

Miguel Albarrán
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The paper presents the origin, development and the results of an educational strategy which is centered on the practice of educational research. The aim of this project is to create research abilities in teachers who are working at kindergarten and elementary schools. This strategy was used on two training programs of the Institute of Educational Research of the Durango State School for Teachers.

Some important advances are reviewed in regard to training for research and its vinculation with the continuous teachers' education, who lay the foundations of the reported experiences. The methodical process of the educational strategy is explained, which is integrated by three basic items: theory, methodology and application.

Finally the achievements are discussed, including the perspectives of this program type, on the context of more specialized models of teachers' training and teachers' participation versus the approach of efficiency, and its relation to academic productivity.

EXPERIMENTAL LEARNING AS A CREATIVE AND INNOVATIVE PARADIGM FOR CONTINUING TEACHER EDUCATION

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Opportunity for renewal is an important aspect of a profession and this is particularly true for the teaching profession. Continuing education for the upgrading of the competencies of staff remains a vital component of teacher educator programs in most parts of the world. However, there is a concern that the teacher education profession has not focused as much attention on the concept of teacher renewal.

This concept is one in which the teacher is viewed in a holistic manner. It recognizes that over time the individual changes emotionally, socially and psychologically and that certain life triggers occur with an accompanying period of transition, which requires the persons to be reflective about the ways in which they may approach the teaching profession and the rest of their life activities.

This study is designed to lay out a paradigm that suggests ways to use an experiential learning process to enable the profession of teacher educators to promote programs of self-renewal. The example includes strategies which enable the person to be aware of various options for renewal and to create plans of action in which lifelong learning is viewed as a continuous process of renewal. The model has its focus on teachers as self-directed professionals.

SOCIAL PROGRESS, PEDAGOGICAL EDUCATION AND INTERNATIONAL PARTNERSHIP

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Two systems of education — one of which is adequate to the postindustrial type of society and based on the pedagogical ideas of I.A. Comenius, and another which is adequate to the industrial type of society and based on the pedagogical ideas of J. Dewey — are considered in the paper. The analysis of the corresponding systems of pedagogical education shows that although the industrial type of education is actual for developing countries, for the successful solution of complex social and economical problems, it is already necessary to lay the foundation of transition to the postindustrial type of pedagogical education. One of the main conditions of such transition is international partnership, and its possible trends and forms, conformable to the countries of the CIS, are considered in the paper.

THE AFRICAN TEACHER OF THE 21ST CENTURY

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Teachers had a status in precolonial and colonial Africa. Teaching was seen as a profession in those days and teachers also showed evidence of professionalism. These traits diminished during the postcolonial period, as a result of a number of socioeconomic factors and the influence of these on education, on teachers, and consequently, on teaching.

Thirty years after independence, Africa seems pressed for changes. From within, socioeconomic and political forces have given rise to agitations for change. From without, there have been unforeseen challenges, propelled by technological and scientific advancement, revolutions in information and communication technology, and the "wind of democracy."

Faced with these crises, and the changes to which they have given rise, the whole world came together in March 1990 and adopted a framework for action for the attainment of basic education for all by the year 2000.

Teachers are a key instrument in promoting Education for All, as the dream of the 21st century. What type of teacher will be needed to cope with the rapid social changes expected by the 21st century? How should such teachers be selected? What forms of pre-service and continuing education programs will be needed for such teachers? What type of profile should the teachers of teachers have? How best can a teacher education program for 21st-century Africa avoid the errors of the educational reform fever of the past?

PROFESSIONALIZATION, STATUS AND CAREER, RESULTS OF 10-YEAR INTEGRATED TEACHER TRAINING FOR THE TECHNICAL SUBJECTS

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In the past, technical subject teachers for secondary education were trained in evening courses. They were experienced technicians and craftsmen having many years practice in industry.

In 1979, a Teacher Training College for the technical sector was established to provide a full-time education similar to the other Teacher Training Courses with an extra year for practice in industry. This College should provide for better conditions as an answer to the qualitative and quantitative needs expressed by the technical schools and at the same time raise status and professionalism.

An investigation among 335 ex-students concerned mainly two aspects:

a. What was their career; how many are actually teachers or do other jobs in trade or industry?

b. What is retrospectively their judgment on the teacher education program in terms of its usefulness?

The results are not encouraging:

1. Only a small part (32 percent) of the former students are fulfilling jobs as teachers in regular education.

2. Their judgment on the professional components of the training is related to their actual position, but not sufficient positive.

A conclusion is that bad working conditions in schools and better perspectives in industry affect professionalization negatively.

EVALUATION OF A ONE-YEAR INTERNSHIP PROGRAM FOR STUDENT-TEACHERS (INTERNS) AT BEN-GURION UNIVERSITY OF THE NEGEV

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Batia Bleicher
Department of Education, Ben-Gurion University
Israel

Field experience has been identified as a key component to improving teacher education. In order to assess the effectiveness of the one-year internship program at Ben-Gurion University of the Negev, a research project was conducted in several comprehensive high schools in Beer Sheva in 1987. The purpose of the study was to ascertain the patterns of interaction between mentors and their interns and to determine how mentoring affected the work of both mentors and interns. The questions addressed five areas: planning and implementation of supervision, communication between mentor and intern, integrations of interns into teaching and other school activities, expectation and fears of mentors and interns, and evaluation of different aspects of the internship year by mentors and interns. Content analysis was performed on data collected by means of interviews and questionnaires, which were administered at the beginning and end of the year. Our findings indicate that efficient supervision is based on good communication between mentors and interns, and that the longer the training period, the better the intern will be prepared for teaching. Suggestions for further research and implications for teacher education will be discussed.

ALTERNATIVE CERTIFICATION OF TEACHERS, A QUESTION FOR THE PROFESSION

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For nearly ten years, the reform of public schooling in the United States has been on the political agenda. Changing education in the public schools extended to the belief that teacher education had to be drastically altered before real reform could occur. President Reagan's administration urged the reforms and state governors began to lead their legislators in bringing about the changes. Texas was a reform leader in the nation and served as a model for other states. In the state of Texas, rapid reform came in the school systems, school curricula, teacher evaluations, and teacher education programs, and in most cases, the reforms were mandated by the state legislature. Politicians rather than educational agencies became the reformers. It was thought that those intimately associated with schools either at elementary, secondary, or university levels were too involved in the old system to have credibility in this revolution. The major reform which challenges the profession is the alternative certification program.

This paper will describe this and other current reforms in Texas teacher education which threaten the concept of professionalism. Also, it will describe survey results of teachers' attitudes toward these changes.

THE ILO/UNESCO RECOMMENDATION CONCERNING THE STATUS OF TEACHERS

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Switzerland

Rita Lakin
Division of Higher Education and Research, UNESCO
France

The only international normative instrument for the teaching profession was adopted by a Special Intergovernmental Conference, convened by UNESCO, in association with the International Labour Office (ILO), in Paris in 1966. The 146 clauses of the Recommendation call for the provision of quality education through improvements in the professional standards and the working conditions of teachers.

The challenges for providing quality Education for All are great, given the disparities in teachers' status in and among the different countries of the world as measured by the 1966 Recommendation. How far are the clauses of the Recommendation being implemented? What are the main trends and contemporary issues affecting education and teachers that have implications on the 1966 Recommendation? How can ILO and UNESCO and organizations of the teaching profession assist in improving the professional status and working conditions of teachers?

THE "ACADEMIZATION" OF COLLEGE EDUCATION IN ISRAEL AND ITS CONTRIBUTION TO THE TEACHING PROFESSION: THE LEVINSKY COLLEGE CASE

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Since the mid-seventies an increasing number of colleges, which were nonacademic in the past, have granted academic degrees to their graduates. This trend has developed, with the approval of the Council of Higher Education, as a result of processes in the Israeli society. It involves twelve colleges which are not universities, six of which deal with teacher education (B.Ed.) and six with other specializations, such as art (B.F.A.), music (B. Mus.), technology (B.Tech. and App. Sci.).

This paper will concentrate on teacher education colleges that have gone through the process of "academization." Today they qualify 70 percent of the teachers in Israel.

- The first assumption, underlying "academization," is that the teaching profession becomes an academic profession. College teachers become academically qualified.
- The second assumption is that the process of "academization" promotes the social status of those involved in teacher education.
- The third assumption relates to the anticipation that "academization" advances teaching, namely results in better teachers.

After ten years, in which the "academization" process has taken place in Israel, meaningful changes have been marked in three areas of teacher education:

(1) The curriculum of colleges

(2) The level of staff members

(3) The level of applicants

Being a highly positive process that reinforces teaching as a profession, "academization" has created a model that enables in-service teachers to continue their studies for an academic degree. Furthermore, a new policy has been adapted by the professional organization of teachers, encouraging in-service teachers to study for the academic degree.

"Academization" has also made a meaningful impact on research in the field of teacher education in Israel: four official bodies are currently involved in studies, surveys and experimentation with a model of teacher education.

RESTRUCTURING THE STUDENT TEACHER EXPERIENCE: PILOT PROJECT TO MEET THE CHALLENGES OF THE FUTURE

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Petey Young
William E. Ruck
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Share the results of a Pilot Project designed to enhance the status and professionalization of teachers by breaking out of the traditional model of a single classroom, one-cooperating-teacher, one-term-duration student-teaching experience, where placement and the student-teaching experience occur with little cooperative feedback from the education community. Beginning Spring 1989, public school personnel, principals, and teachers from our four largest local school districts collaborated with student teachers and college faculty to create a cadre for restructuring student teaching.

By Fall 1991, the project had

- developed and tested a variety of restructuring options, including

  extension of the student teacher experience beyond the classroom, involving resource personnel and other professional services;

  use of cooperating teacher "teams;"

  creation of "Student Teacher Position Descriptions" and interview procedures for specific school needs;

  matching student teaching more closely to the public school calendar;

  optional continuation of student teaching within the same building or classroom for more than one term; and it had

- provided a collaborative structure for increased communication between college and community.

Results of the Pilot Project have led to innovative, professional practices that will help our program meet future challenges.

External Assistance in In-Service Training of Teachers: the Haitian and the Brazilian Experiences

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Canada

In-service training has been described by Fullan (1982) as a change strategy through which teachers can increase their sense of confidence and competence, can upgrade and adjust their skills in response to curricular, technological and social new demands and finally can encourage the evolvement of a positive professional image through one's ability to reflect on one's own practice. While the benefits of in-service training are well recognized, what is the status of in-service training when it comes in the form of external foreign assistance, from one country to another one that requires help in upgrading the skills of its higher education instructors.

The goal of the communication will be to offer a personal appraisal of the importance of in-service training as a change strategy through the comparative analyses of two experiences in offering in-service teacher training: one with Haitian teacher trainers at Les Cayes, Haiti, and the other with a group of Brazilian university instructors at Recife, Brazil.

Teachers' Status in Iran

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Iran

To improve the education process, the main target should be the teachers themselves. No command can make teachers more effective. They need to be satisfied, motivated, and committed for their profession, so that they can perform their professional tasks. Looking for high status for teachers is an endeavor in this regard.

Some 115 questionnaires were distributed among teachers from 19 schools which were drawn randomly out of 111 schools. Ninety-seven returned questionnaires were analyzed. The questionnaire was composed of 18 questions; 8 questions referring to information about the teachers and 10 questions referring to their opinions on the factors related to teachers' job satisfaction, and priorities among them. This questionnaire was developed using issues raised in the literature and popular beliefs, and was intended to find out different teachers' opinions on these questions.

The data shows that 75 percent of teachers believe that *high status* is the most important factor in their job satisfaction after high salary, and 30 percent of them stated that high status is even more important than salary. The author believes that the second group of teachers — professionals — should be recognized on the basis of professional qualification. Then they should be given the opportunity and responsibility to lead the process of education. Recognition of professional teachers and the granting of their demands eventually will lead to higher status for all teachers.

REFLECTIVE REVIEW AND REVIEW OF TEACHER EDUCATION IN "ASEAN" COUNTRIES IN AN ERA OF GLOBAL CHANGE

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A re-examination of the state-of-the-art reviews of teacher education in five ASEAN countries suggests a number of assumptions which underpin the practices, problems and prospects of teacher education. In the light of global changes, such as socioeconomic, intercultural, technological, environmental and geopolitical changes, the need to develop strategies for innovations in teacher education is underscored. Specifically, four possible strategies are discussed, namely,

- **Surface Strategies**, which appear to preserve the *status quo* but actually progress incrementally by capitalizing on relative strengths.
- **Structural Strategies**, which establish collaborative links with institutions or agencies that could provide additional or alternative avenues for innovations in teacher education.
- **Substantive Strategies**, which concentrate on improving the professional or substantive aspects of academic courses or research projects within the control of teacher educators.
- **Systemic Strategies**, which involve the total system of teacher education as well as the network of related institutions and stakeholders.

THE PROFESSIONALIZATION OF TEACHERS: DIFFERENTIATED MENTOR MATCHING

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Recent studies indicate that teacher education institutions do not adequately prepare new teachers for their first year of professional experience. Those same studies provide evidence that new teachers would have been more effective in raising student achievement if they had been working with experienced teachers. The matching of new teachers with mentor or master teachers is an area with powerful potential for improving the effectiveness of the teaching/learning process. This paper investigates nine areas critical to the development of mentor matching models.

A Study of the Career Patterns and Professional Problems of Teacher Education Graduates

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Australia

In an effort to gain more detailed information on the career patterns and professional experiences of beginning teachers, a study was made of teacher education graduates of the University of Canberra, Australia. Questionnaire data were obtained from a random sample of graduates who had completed their teacher education courses between 1986 and 1991, the instrument focusing on the subjects' employment histories, teaching and nonteaching career experiences, career support structures and the suitability of pre-service programs as career preparation.

Analysis of the data revealed that over two-thirds of the graduates were currently employed as teachers although only a little over half of the respondents stated that they would choose teaching again if making a career selection. Though comparisons of findings from this study with international data on teaching experiences showed some similarities, differences were apparent in respect to their experiences of classroom discipline, motivating students and relationships with parents. Major areas of concern that provide guidance for teacher educators related to in-service education, support structures in early teaching careers and perceptions of the value of pre-service courses.

This paper gives an overview of the study and discusses how the information obtained can assist teacher educators to make inputs into the professionalization of teaching.

Who, What, Why, Where: The Professionalization of Teachers and the Teaching Profession for a Global Society

Douglas Warring
Margaret Reif
Eleni Roulis
University of St. Thomas
USA

Richard Simms
Minnesota State Department of Education
USA

For continued professionalization, teacher education must evolve, reflecting the dynamic complexity and heterogeneity of our society. Collaboration of state licensing agencies and university/college and local school personnel is essential to pursue creative options in the professionalization of the teaching profession. This requires a careful examination of the roles these groups play in teacher preparation at the pre-service and in-service level. Minnesota has developed a new document (Vision Document) that will result in the professionalization of the teaching profession.

Induction and in-service models outlined by the Vision Document are initiatives of Minnesota's State Board of Teaching that led to the development of new rules to redesign teacher education. As in other professions, teachers must acquire knowledge, skills, and dispositions and be prepared to apply these on an ongoing basis. Professional standards and rules for the teaching profession must reflect teacher preparation and teaching practice particularly in this era of global change.

The presenters will share perspectives from local, higher education, and state levels relating to the preparation, induction, and in-servicing of teachers based on Minnesota's Vision for Teacher Education. The results will be a more professional teacher education program and profession.

STUDENT PERCEPTIONS OF THE "QUALITIES OF A GOOD TEACHER": SOME IMPLICATIONS FOR THE DESIGN OF THE TEACHER EDUCATION CURRICULUM

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Curriculum proposals for teacher education programmes in recent years have been mainly concerned with producing a model that will enhance teacher effectiveness, thereby improving the quality of learning. However, improving teacher effectiveness through training is not only related to the acquisition of specified quality-based features. Further insight and information on student perceptions of effective teaching is needed before offering them an "ideal type" at which to aim. This study is concerned with student constructs of a model of "good teaching" in a South-East Asian context. Differences in perception were found to be related to age, gender, previous experience of teaching and subject specialisation. Factor analysis indicates that for UBD students, three main concerns are that teaching be seen as an important social task, that teaching is a dynamic pedagogical activity and that teachers need to be flexible in their practice and beliefs. The social role of the teacher is most important. The implications of these findings for Ihe construction of more relevant and effective pre-service and in-service programmes in UBD will be discussed.

CHINESE TEACHER AND TEACHER EDUCATION

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About 11 centuries ago, China had already established a comprehensive school education system. The world renown scholar, Confucius (551 BC - 479 BC), was the most famous teacher in that time and was respected as "the Ancestor of Intellectuals" and as the "teachers model" by the later generations. In the thousands of years of Chinese feudal society, people thought that the role of the teacher was concerned with the country's prosperity or decay; the leglity's living or dying and good or evil of people's heart. They elevated the teacher's position to the same position as the Heaven, the Earth, the Emperor or the Ancestor. People often took a teacher who had perfect personality and who was respectable as the example to correct their manners. It made great contribution to the formation of our Chinese colorful culture.

In Chinese modern and contemporary history, the teacher is the first one to accept and propagate the advanced thinking. Many great politicians, thinkers, educators and scientists originally were teachers. They were the cream of our Chinese nation.

After the foundation of the People's Republic of China, our country has made teacher education an "educational hen," and raised it to the superior stage and called on the whole nation to respect teachers and to pay much more attention to education. The Chinese educational administration has been taking measures to reform and enforce teacher education and to improve teachers' education level so as to further educational quality and science and technology development, and to make great contributions to the world civilization and human progress.

ABSTRACTS OF ALL ACADEMIC PAPERS BY TOPIC

World Assembly Topic Three

THE IMPACT AND ROLE OF SCIENCE AND TECHNOLOGY ON EDUCATIONAL CHANGE

Research studies and programs that describe advances in science and technology and their impact on science teacher education; studies that indicate the impact of environmental issues on teacher education and the impact and role of the information age on teacher education and teaching; examples of curricular innovations that relate to science and technology, including pre-service and in-service teacher education; potential of emerging information technology for improving teacher education and teaching; use of technology in evaluating student performance and progress in teacher education.

TOPIC THREE, INDEX OF ABSTRACTS

Alphabetical by Author

IMPLICATIONS FOR CHANGE IN TEACHER EDUCATION STRATEGIES OFFERED BY THE NEW INFORMATION TECHNOLOGIES

Mike Aston
The Advisory Unit: Computers in Education
United Kingdom

Samir Q. Fakhro
University of Bahrain
Bahrain

The authors will examine the rationales for the introduction of computers into classrooms and the consequent threat to the old order of the teacher-student relationships as a consequence of the new order. A number of significant changes that are taking place in the methodology and content of training courses for teachers in the advent of the use of computers and communications in the classroom will be assessed. The paper addresses both pre-service and in-service training.

A number of case studies will be evaluated encompassing national strategies in developing countries, the Middle East and Europe. The case for educational technology transfer and the consequences for teacher education is critically examined together with the possible erosion of national culture.

The paper concludes with recommendations for future action in the development of teacher education that exploit the advantages of the new information technologies.

EXPERT SYSTEMS: A TEACHING TOOL FOR THE INFORMATION AGE

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Webster Groves School District
USA

Roy T. Tamashiro
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USA

The demands of the Information Age require schools to develop students' skills in critical thinking, problem-solving and learning how to learn. New computer tools known as "expert systems" are ideal for developing these skills. A year-long professional development institute called "Using Expert Systems in the Science/Interdisciplinary Curricula" trained 24 elementary and secondary school teachers to integrate expert systems and other technology tools into their instruction.

Although expert systems are used mainly in industry, science and medicine to help solve complex problems and conduct difficult analyses and diagnoses, one system called *Knowledge Works* was usable by teachers and pupils. The expert system enabled students to concretely see their own mental processes, such as their thinking paths and decisionmaking procedures, which teachers often find difficult to illustrate. Students showed increased precision in analyzing data and evaluating reasoning processes, whether they were working with an expert system that helped to identify a flower or refugee support organizations, or one that recommended colleges, investment opportunities, or even a restaurant. Teachers reported that students felt most knowledge-empowered when the students themselves conducted the research, designed the knowledge based and involved other students in consulting their expert systems.

THE IMPLICATIONS OF THE REMOVE AREA TEACHER EDUCATION PROGRAM (RATEP) FOR TERTIARY DISTANCE EDUCATION

Patrick Brady, Pam Santo and Richard Smith
James Cook University of North Queensland
Australia

The Remote Area Teacher Education Project was funded by the Queensland State Government in 1989 to pilot the delivery of professional teacher education courses to Aboriginal and Torres Strait Islander students living in remote communities in Far North Queensland. These students for family commitments or other reasons could not attend on campus for three or four years at a distance of over a 1000 kms from their homes. The chosen mode of program delivery was through interactive computer assisted learning (CAL). All courseware was prepared on campus at the James Cook University in Townsville using Authorware Professional on Macintosh II computers. Now two years later the students are within one semester of graduating with a 100 percent success rate so far. Over 400 megabytes of computer programs (a full three-year course has been produced — 25 semester units in all).

There are serious implications for distance education. Motivation for students is very high and success rates challenge orthodox methods of delivery. The preparation of materials in CAL mode has challenged and transformed course preparation by tertiary lecturers. The clarity of presentation and the team mode of production offers a revolutionary alternative to lecture-tutorial methods. The use of Authorware programs has made staff development of curriculum writers and designers much less of a mystery. The interactivity of the materials has enhanced students' roles in learning and significantly changed the teacher-student relationships to the mutual benefit of both.

This presentation will attempt to illustrate these points using demonstration materials from the actual programs in a CAL mode.

PROVIDING EDUCATION TO STUDENTS-AT-A-DISTANCE VIA LIVE TELEVISION

Loretta R. Konecki
Grand Valley State University
USA

Interactive, live television permits universities to deliver education to students or teachers hundreds of miles from the university campus. Grand Valley State University has offered early childhood education and learning disabilities programs via satellite to hundreds of students across Michigan.

This paper includes a discussion of the advantages and disadvantages of using live television as an instructional delivery system; reactions and experiences of students taking courses on-campus and at distant regional down-link sites; ideas on how institutions can initiate such programs; and recommendations on how to teach via live television. Means of assuring academic quality by requiring distant students to come to campus to meet some requirements, sending faculty to distant sites, or by identifying local mentors to work with students are covered, as are student work and class participation.

The experiences of Grand Valley State University indicate that students would be unable to gain essential coursework without the interactive televised programs. Students evaluate the courses and instructors very highly. Comparisons of students' grades show no significant difference between on-campus and distant students' performance.

THE NORTHERN LIGHTS TELEGEOGRAPHY PROJECT

Marlene LaCounte
Eastern Montana College
USA

Marlene Zentz
Riverside Middle School
USA

This program is a model for geographic education which engages students in real world problem-solving. It connects students in two remote, rural states in the United States (Alaska and Montana) via telecommunication technologies, allowing them to form an interpersonal, educational network which helps them overcome the geographic and cultural barriers to full citizenship. Enrollment in the participating schools includes a variety of Americar Indian, Alaska Native, Euro-American, and other cultural groups living in geographically remote areas who historically have not communicated with each other or the larger world.

This program restructures classroom organization and practices to empower learners; develops an interactive model for teaching geography using modern technology; and provides training and resources for teachers. Students become active creators of knowledge, formulating and exploring real world problems. In cooperative learning groups linked through telecommunication networks which cross spatial and cultural barriers, students explore such topics as global warming, poverty, or population growth. The issues are analyzed in terms of the students' own lives and regions. Using aesthetic as well as analytic representations created with hypermedia, students infuse personal perspectives into their work, thus generating discussions cf those critical issues which divide and unite peoples, i.e., freedom, equality and power.

UNIVERSITY, SCHOOL DISTRICT, IBM, AND THE UNITED STATES DEPARTMENT OF EDUCATION: COLLABORATING TOGETHER TO EMPOWER SCIENCE AND MATHEMATICS TEACHERS

James E. O'Connor
California State University
USA

This paper shares the results of the first two years of the Mathematics and Science Partnership Project (MSPP), a cooperative effort by California State University Bakersfield, Kern High School District, IBM, and the United States Department of Education to facilitate the improvement of science and mathematics teaching throughout the school district and the state of California.

MSPP teachers used networked computers and multimedia teacher workstations provided by IBM in their mathematics and science instruction. Through a three year grant from the United States Department of Education, project teachers received extensive in-service education and ongoing support from university faculty as they learned to develop multimedia lessons, materials, strategies and activities. Examples of curricula which were developed are detailed in this paper.

An important aspect in the dissemination of the curricula developed by project teachers is to provide training to pre-service mathematics and science teachers enrolled within university teacher credential programs.

The project stresses integration of content and emphasizes the use of manipulative mathematics, science materials and technology as tools to develop higher order thinking skills for all students. The project especially focuses on providing opportunities for females and Limited English Proficient (LEP) students to actively participate in mathematics and science.

CHANGES IN THE HIGH SCHOOL EDUCATION OF INDUSTRIAL WORKERS REQUIRED BY ADVANCING TECHNOLOGIES: SELECTED CASES

C. Richard Paulson
College of Business, Mankato State University
USA

This paper identifies advancing technologies by which firms have successfully increased productivity and shows why those technologies require higher level academic preparation and different socialization in the high school education of production workers. Based on the actual experience of firms, the paper presents conclusions which identify the specific operating needs for higher ability in applied mathematics, reading and writing. And it also identifies a need for alternatives in socialization in order to increase competence in independent problem-solving, group interaction and leadership, for all students, but especially those in the middle and lower quartiles. Advancing technology also raises the need for remedial education for the existing workforce. From those actual demands we derive expectations for high school curricula with some implications for the curricula of countries with vocational or apprenticeship tracks. Although the majority of cases are from firms in the United States; the requirements are a function of specific technological processes and generally apply wherever such technologies are advanced.

MASSIVE INTERVENTION IN ELEMENTARY AND MIDDLE SCHOOL MATHEMATICS INSTRUCTION

Fredricka K. Reisman
Drexel University
USA

A major problem exists in the United States regarding the mathematics content-knowledge of teachers in grades one through eight. Many teachers have had a single course in teaching arithmetic during their university preparation. The nation has discovered that you can't teach what you don't know.

The goal of this ongoing project is to develop *Mathematics Teacher Facilitators* who will have responsibilities for all mathematics instruction in all elementary and middle schools whose students feed into a single high school. The program includes coursework in mathematics content, including modeling of mathematics, teaching for the grades one through eight classroom teachers. In addition to increasing mathematics content and pedagogy knowledge, additional goals include developing diagnostic mathematics teaching and diagnostic assessment skills and encouraging the use of available outside resources.

These resources, whose purpose is to enhance teachers' pedagogical skills by providing real world applications in mathematics, include the Franklin Institute Science Museum and second career teachers including aerospace scientists and engineers enrolled in Drexel University's Teacher Preparation Program.

Expected outcomes include greater understanding and grasp of fundamental mathematics concepts by teachers and their students, positive attitudes toward mathematics instruction and mathematics learning, and development of new evaluation techniques for mathematics assessment by teachers, e.g., log analysis, performance assessment and use of portfolios.

A COLLABORATIVE ACADEMY FOR RURAL EDUCATORS

Celeste Burns Sexauer
Mansfield University of Pennsylvania
USA

This paper will describe a project for faculty development carried out by a public university and a local school district in a very rural mountainous region of Pennsylvania. Schools in the district, from 13 to 42 miles away from the university, wanted to develop alternative means of interaction for pre-service and in-service training and development. Traditionally, few opportunities have existed for teachers and faculty to learn from each other about innovative methods or experimental programs which have been successful in rural schools. It was believed that distance technology (telephone, facsimile machines, video, audio and audiographic conference equipment) could be used effectively to bring teachers and professors together for mutual faculty development activities. Research was conducted to determine areas in which teachers and faculty either wanted to share their expertise or to improve their skills or knowledge and to determine the distance technology which teachers found to be easiest to use and most effective in fostering faculty development activities. This project was funded by the Pennsylvania Academy for the Profession of Teaching of the State System of Higher Education.

RELATIONSHIP BETWEEN TEACHERS AND TALENTED STUDENTS "IN AN ERA OF GLOBAL CHANGE"

Anton Sirota
Department of Inorganic Chemistry, Slovak Technical University
Czecho-Slovakia

The present technical era requires from teachers a purposeful education of the young so that they will be able to solve complicated tasks of everyday life and technical practice. More now than before, special care should be devoted to gifted students who have the ability for creative thinking and work.

The research project at our university and applications of its results are focused on two problems.

- **PROBLEM NO. 1: How to identify who is talented in chemistry and who is not.** Special tests, called "creativity tests" and "stress tests" have been worked out which help us to pick out talented students with a high reliability and, moreover, very rapidly even in a large group of students.
- **PROBLEM NO. 2: What to do with talented students in order to develop their talents.** New methods of pedagogical work should be introduced into the teaching process. Our research results have been applied to the work of the "Club of Teachers and Talented Students" which has been established at our university. The activity of the Club seems to be very effective in working with talented students and new possibilities are given both to the teachers and students, especially in the field of international cooperation.

CLIMATE AND LATITUDE AS DETERMINANTS FOR LEARNING STRUCTURE

Martin W. Sivula
Johnson & Wales University
USA

This paper examines the relationship and implications of climate and latitude as possible determinants for global learning system structure. This relationship is supported by two major works. First, Huntington's theory that life in cold and changeable climates has stimulated mental capacity and efficiency more than life in warmer regions. Second, Hofstede's Power Distance Index (PDI) which examines the degree to which power, wealth, and prestige are unequally distributed in a culture. Countries with lower PDI scores are more democratic and at very high latitudes. Contrastingly, countries with high PDI scores are at lower latitudes and have control and influence in the hands of a few. PDI was found highly correlated with individualism ($r = .72$) and negatively correlated with latitude ($r = -.62$).

In colder and harsher high latitude climates, technology is needed for survival. Consequently, a chain of events occurs in which children are less dependent on learning from authority figures. This suggests teacher-centered authoritarian-based learning might be inappropriate in high latitude countries; simultaneously, learning systems which diffuse power in the classroom, and ultimately produce more technology, (e.g., personal computers and individualized instruction), should meet with greater success. Also, individualism, climate and culture might be contributors to technology transfer and invention.

THE RADIO AS A MEDIUM IN TEACHER EDUCATION

Louis J. van Niekerk
University of South Africa
South Africa

Since 1987, the University of South Africa (Unisa) has been investigating the possibilities of the radio as an educational medium in distance education. The research was initiated by the Department of Didactics which is primarily involved in teacher education. This paper briefly reports on the extent, research methodology and results of the research project as well as the possibilities of the radio for teacher education in Southern Africa. The research was aimed at exploring the possibilities that radio presented and not so much at proving the effectiveness of the radio in distance education. The basic premise being that learning results are influenced more by the quality and content of the programs than by the attributes of the medium. The problem of interactivity is also addressed and a possible strategy for interactive radio is suggested.

In the second part of the paper, attention is focused on the radio in educating teachers. In this context the radio should be evaluated in terms of the current educational situation in South Africa. It is generally accepted that the poor state of education is the grim legacy of decades of apartheid. Inadequate facilities, shortages of textbooks, lack of properly trained teachers and political factors lead to a chaotic situation in education. It has become clear that a *culture of learning* needs to be established in the classrooms. In this respect a strategy is discussed whereby the radio can be implemented to democratize teaching and learning and to develop students' metacognitive skills.

TECHNOLOGY EDUCATION FOR ELEMENTARY PRE-SERVICE TEACHERS

Charles H. Wentz
Patricia J. Wentz
The University of West Florida
USA

Technology Education in elementary school programs has the potential for being used as a means of more effectively implementing the existing curriculum as well as preparing today's youth for tomorrow's world. This paper presents the rationale for including technology education in pre-service teacher education programs. Such an inclusion may not only provide a higher state of readiness for technology for students in the future but may also provide new and stimulating media for teaching and learning the standard content of the elementary program.

Through such training, pre-service students will be able to do the following:

- Demonstrate computer literacy and applications,
- Apply basic skills in Language Arts, Mathematics, Science, Social Studies, Health, and Fine Arts appropriate to technological content and learning activities,
- Demonstrate proper and safe procedures in using technological tools and equipment and how to apply technology to protect the environment,
- Identify evolving technologies in our technological world,
- Perform special skills unique to electricity, computers, and technology systems of communications, manufacturing, construction, energy, power, and transportation, and
- Employ the technological processes of problem-solving, creating, and designing.

Through training in a pre-service course of this nature, new teachers will be better able to offer to their students a study of technology such as that recommended by Boyer in the Carnegie Report and by the National Science Board's Commission on Precollege Mathematics, Science, and Technology Education.

ABSTRACTS OF ALL ACADEMIC PAPERS BY TOPIC

World Assembly Topic Four

THE POTENTIAL FOR INTERNATIONAL COOPERATION AND PARTNERSHIPS IN EDUCATION

Research studies and programs to institutionalize the internationalization of teacher education programs; examples of efforts to cooperate nationally, regionally or internationally to improve pre-service and in-service teacher education, examples of multinational, multisectoral, interinstitutional and international cooperation in research, policy development, evaluation and technical assistance in teacher education; the role of educational and/or international associations in improving the quality of teacher education.

TOPIC FOUR, INDEX OF ABSTRACTS

Alphabetical by Author

COMPARATIVE RATINGS OF TEACHER IMAGE BY PRE-SERVICE TEACHERS IN THE UNITED STATES AND IRELAND

G. Michael Barry
University of West Florida
USA

This recently completed study of 453 Irish and U.S. pre-service teachers includes two aspects related to descriptions of teacher image as measured by (1) attitude toward the profession and (2) comparisons of occupational prestige. Included is an extensive literature review conducted in Ireland and in the United States related to the status of teaching and the profession.

Significant differences were found in the way participants evaluated teaching. Gender was a factor. Overall results indicated that the mean attitude score of U.S. subjects was significantly greater. Also, based on a significant interaction effect, Irish males in this study tended to have a more positive attitude toward teaching than did Irish females. The reverse was true for U.S. participants. Differences were also found on how subjects ranked teaching on a list of 15 occupational classifications.

Educational leaders trying to improve the profession will benefit from the historical context in which the occupation of "teacher" has been described in this study. Where teaching ranks among other occupations and how pre-service teachers see their future provides information related both to satisfaction with the profession and recruitment of members.

THE POTENTIAL FOR INTERNATIONAL COOPERATION AND PARTNERSHIPS IN EDUCATION

Tatiana Butorina
Pomorsky State Pedagogical University
Russia

The development of teacher education in Russia is now defined by the character of modern reforms aiming toward the formation of market economics. Sudden changing social and political conditions have aggravated the contradictions in the existing system of education between the planned admission of students and the quality of their proficiency; the obligation to follow instructions and the aspiration for democratization; the traditional system of education and new technologies in teacher education.

The high dynamics of social development have determined the transition from narrow specialized training to fundamental education at the university level. This has given birth to a new type of educational institution in Russia — the Pedagogical University. We have worked out the conception of a regional pedagogical university, such as Pomorsky Pedagogical University in Arkhangel'sk. It offers a wide range of courses, mainly in the humanities. It is remarkable for its flexible structures permitting the introduction of advanced technologies of education (e.g., multilevel training), the use of historical and cultural potential of the Russian North and the traditions of Pomorsky people's education.

We set our hopes on international cooperation in education. We are experiencing interinstitutional cooperation in teacher education with USA (University of Southern Maine), Norway (Tromso and Alta Universities), and Germany. From these experiences we know how many common problems we are facing. They can be effectively solved by united efforts of international associations.

IMPROVING TEACHER EDUCATION THROUGH INTERNATIONAL COOPERATION AND PARTNERSHIP: SWEDEN AND THE UNITED STATES

Helen L. Carlson
University of Minnesota, Duluth
USA

Lena Stenmalm-Sjoblom
Vaxjo University
Sweden

Teacher education programs at Vaxjo University in Sweden and the University of Minnesota, Duluth, have established a three-part, collaborative, research-based international project. This six-year-old project and its impact will be discussed in the presentation.

- ***Part One.*** There is a two-tiered student exchange. Undergraduate (pre-service) students attend classes at each other's universities during the regular academic year. Graduate (in-service) students attend intense seminar courses at each other's campuses during the summer. New insights have been gained through lecture, discussion, comparative papers, and observation of practice.
- ***Part Two.*** There is an ongoing collaborative faculty research project. Survey and interview research studies among parents and practicing professionals have been completed and published in each of the countries. Findings indicate a more innerdirected, group-oriented approach to teacher education in Sweden compared to a more outerdirected, individualistic approach in the United States, raising significant issues which have impacted teacher education programming.
- ***Part Three.*** A combination of student exchange and research has been developed. Advanced students who are currently teaching have become involved in action research where questions of mutual interest (parent involvement, integrated curricula) have been studied in each country and the results shared. Further, raw data from the faculty's cross-cultural research have been used in exchange classes to generate discussion and deepen understanding.

TEACHER EDUCATION: A WORLD VIEW

George A. Churukian
Illinois Wesleyan University
USA

Craig Kissock
University of Minnesota, Morris
USA

If teacher education is to gain authority through a shared vision and commitment, it is necessary to include the multicultural dimension. Teachers, now and in the future, must become more aware of the peoples, cultures, and events from around the world that affect our lives daily. They must be prepared to meet the challenges of students with very diverse backgrounds. The purpose of this paper is to bring together some of the issues, trends, and innovations in teacher education from a global perspective. This paper shows that teacher education is becoming restructured in many places throughout the world. It shows that we all have a similar vision and commitment to preparing excellent teachers to meet the demands of the future in our rapidly changing multicultural world.

Through this bringing together of ideas, issues, trends, and innovations in teacher education, perhaps we will encourage the expansion of existing networks and the creation of new networks among teacher educators worldwide.

The paper is based on a summary of papers submitted by over forty teacher educators from approximately twenty-five countries and all continents except Antarctica.

THE DEVELOPMENT AND USE OF PARALLEL INTERNATIONAL CASES OF TEACHING

Frank Cramm
Royston Kelleher
Memorial University of Newfoundland
Canada

There is a growing awareness among those involved in teacher education that a desirable next step in the evolution of the field might be the development of an instructive case literature akin to that in other professions. This paper documents the development of parallel "cases" of four outstanding teachers in Canada and England as they planned and taught the same curriculum unit/topic to their classes of 10-year-old pupils. It will also include a description of four half-hour videotape documentaries which were produced to detail the teaching practices (classroom behaviors) and the undergirding practical knowledge (teacher thought processes) of each of the teachers involved. The session will conclude with an analysis of the use and impact of such comparative international cases of teaching in pre-service teacher education.

A UNIVERSITY OF PITTSBURGH MANAGEMENT TRAINING PROGRAM FOR 40 ECHELON II, III AND IV EMPLOYEES OF THE INDONESIAN MINISTRY OF EDUCATION AND CULTURE

Nicholas F. DeFigio
Joseph S. Werlinich
University of Pittsburgh
USA

The University of Pittsburgh and The Indonesian Ministry of Education and Culture developed a training program designed to provide in-service training for 40 Echelon II, III and IV employees. This was a 10-week program; 5 weeks at a University in Indonesia (IKIP Jakarta) and 5 weeks at the University of Pittsburgh. The main objectives of the program were to provide the participants with updated information on the expectations and plans of the Ministry of Education and Culture and the updating of knowledge in the field of administration with an emphasis on personnel administration, finance and logistics. Instructional procedures included large and small group sessions, team teaching, modeling, traditional lectures, field trips and action plans that were used when the employees returned to their assigned positions.

This paper presents the results of a carefully planned program for in-service training of practicing administrators. It includes a description of the planning process, the content and activities of the program, the outcomes, and the evaluation processes used to collect data. In addition, the information gleaned from this project will provide valuable data for developing nations and others interested in developing short training activities. This project has important implications for the improvement of education in developing nations.

ACTION RESEARCH AS A PARTNERSHIP STRATEGY IN THE TRAINING OF TEACHERS: REPORT OF AN EXPERIENCE

André Dolbec
University of Quebec in Hull
Canada

In order to develop a better collaboration in the training of students who want to work in the pulp and paper industry, researchers from the Univérsite of Québec in Hull have initiated an action research in September 1991 in partnership with a School Board and a Pulp and Paper Mill in Western Quebec. The research is systemic in its goals and methodology. It intends to evaluate the 900 hours of training offered by a School Board and to ensure that the program answers the specific needs of a Pulp and Paper Mill. Taking this goal as a means, the research aims to change the thinking of the other Pulp and Paper companies of this region and wants to influence them so they develop a new partnership with the School Board in order to have a better qualified manpower. The researchers intend to change the actual practice of the industry in which new employees receive "on the job" training because the companies do not trust the school system to offer relevant knowledge to the students.

The following paper will report the first phase of the action research which has allowed the university researchers to train three teachers in charge of the professional training in the School Board. They were first trained in research methodology; then, with the help of the school principal, in curriculum and pedagogical supervision. This training intended to provide them with the means to assess the curriculum and to make sure that it was delivered as planned. The conjunctural diagnosis used allowed the team to modify it when needed to better answer the needs of the industry instead of waiting until the end of the school year.

MOVING FROM DOMESTICATION TO INTERNATIONALIZATION: TEACHER EDUCATION IN PAPUA, NEW GUINEA

Robert G. Elliott
Queensland University of Technology
Australia

Until recently Community School teachers in Papua New Guinea were trained within a two year program based on an apprenticeship model. The emphasis was on reproductive techniques of teaching and learning resulting in the domestication of teachers.

Reports in the 1980s by Matane, advocating a more reflective attitude, and McNamara, proposing a move to College autonomy and revised teacher education programs, culminated in a new program which was introduced into the nine Community Teachers Colleges in 1991.

Within this context the Australian International Development Assistance Bureau (AIDAB) is funding a five-year project (valued in excess of $3 million) aimed at developing the competence of lecturers in these Colleges and enhancing the work of the Colleges. The project is managed by Queensland University of Technology, Australia.

This paper outlines cooperative research, associated with this project, designed to develop critically reflective attitudes in college lecturers. The research aims to develop such attitudes in a self-sustaining manner, thus encouraging the lecturers to understand their teaching in terms of economic, social and political contexts within an international perspective. The paper discusses approaches by which this understanding is encouraged.

Evidence is discussed indicating the success of the research effort in internationalizing teacher education in the country.

CULTUREFAX: INTERNATIONAL TRAINING RESEARCH PROJECT

David G. Gueulette
Keith Collins
Northern Illinois University
USA

In the Spring of 1990 a team of researchers began to compile findings from a study investigating the most critical effects of cultural traits on the design of instruction for use by other cultures, delivery of instruction to other cultures, and learning of instructional content designed and delivered by one culture for other cultures in industrial and higher education settings.

Results of early findings provided a direction for additional inquiry that is still ongoing on the problems and potentials that face both learners from other cultures and their instructors in both corporate training and university environments.

Findings have already been incorporated in small bulletins that are being distributed to private training and public higher education institutions nationwide. These bulletins note special cultural factors for individual internationals that may prompt an American instructor to become more sensitive and thus more effective in multicultural classrooms. These bulletins might highlight, for example, if a certain nationality is generally more comfortable in group or team learning activities or in more individualized programs.

We will discuss the findings of the studies and comment on methodologies, success and weakness of the techniques and usefulness of the results. The studies will be examined in some detail and comments on the procedures invited from the participants.

CEUs PROMOTE INTERNATIONAL COOPERATION AND PARTNERSHIPS AMONG TEACHERS

Rachel Haynie
Barbara Gibson
University of South Carolina
USA

Information technology, the demand for expanded perspectives made by a global economy, and international meetings and other travels are linking continents of independent learners, from educators to members of business communities, in a knowledge network of lifelong learning. Simultaneously, community business-education partnerships are emerging at the same time that educators are exhibiting, more and more often, spirited initiatives for their own continuing professional education.

The awarding of continuing education units, since the early 1970s an effective incentive for the private sector to undertake nonacademic continuing education, is now being considered as an equally effective as incentive for teachers and other educators in the public sector to continue their professional education as well.

Following established examples of their collegial counterparts in business associations and other private entities, educators have begun earning continuing education units to satisfy, at least in part, recertification points requirements established by their accrediting authorities. Their participation in continuing education offerings is also satisfying their professional curiosity relevant to the trends and issues within disciplines and businesses that impact education, and also serves as a means of fostering partnerships.

Current research is indicating that choosing for themselves from among the wide array of continuing education courses available is positively impacting their self-awareness and is affording them renewed opportunities for valuable reflection.

By applying the criteria set forth by the Council on the Continuing Education Unit, educators from around the world can self-direct aspects of their professional development to enhance their global perceptions.

A model for CEU course selection, application and self-assessment will be presented along with a review of research leading to this advancement and a very brief history of CEUs.

TWO GLOBAL EDUCATION STRATEGIES FOR TEACHER EDUCATION

Elaine Jarchow
University of Nevada, Las Vegas
USA

This paper explores two global education strategies for teacher education: A World Classroom Linkage and A World Cultures Camp.

World Classrooms Linkage — Modern communications technology provided a unique partnership experience for over 100 children from two nations, their teachers, parents, and principals, two university faculties and two business groups. The partnership participants included

- Sixty children, ages 5-10, four teachers, parents, two New Mexico State student teachers, and a principal at Newstead school, a small rural school in New Zealand.
- Sixty children, ages 8-10, four teachers, parents, and a principal at Loma Heights School, an urban school in Las Cruces, New Mexico.
- Faculty at Hamilton Teachers College, New Zealand, and at New Mexico State University.
- Business personnel at Olivetti in Wellington, New Zealand, and Optel in Denver, Colorado.

For a period of three weeks, the children studied each other's culture through an interactive student-centered approach.

In addition to reading, listening, playing games and cooking, the children used the computer to exchange "instant" messages and pictures with each other on such topics as the games we like to play; the houses we live in; the things we learn at school; the ways we celebrate special occasions; the food we like to eat; and the stories we like.

World Cultures Camp — Because American youth are often accused of knowing little about geography and cultures other than their own, a World Cultures Camp for elementary school students taught by College of Education faculty and foreign students was instituted. Each session focused on a different country, and elementary school students worked with foreign students to explore geography, art, music, dress, food and customs.

NEED FOR INTERNATIONAL COOPERATION AND PARTNERSHIPS IN EDUCATION IN AN ERA OF GLOBAL CHANGE

George Kallingal
University of Guam
USA

This is an era of change in individuals and their collective entities. People are devoting efforts to extricate themselves from constraints from within and without. They are questioning their essence and existence, and they are embracing notions of freedom for pursuing goals and making efforts to coexist with their fellow human beings. Alliances are being built up for mobilization of resources. However, common vision and values are necessary to produce beneficial effects, which can only be achieved through cooperation and collaboration in education.

An international study revealed that in the areas of achievement and self-concept, the focus of education is varied; efforts are not being made to achieve desirable common outcomes. This study attempted to find out in which of the following categories students from the various countries fell: doing good and feeling good; doing bad and feeling bad; doing good, but feeling bad; and doing bad, but feeling good. The data indicated that most of them fell in the undesirable categories.

Through global cooperation and partnerships, nations can share their strengths and collaborate in eradicating weaknesses. Through collaboration in varied educational activities, students everywhere can be helped to move toward "doing good and feeling good." But to achieve this, education must embrace common themes: universal access, freedom and responsibility, individuality and collectivity, and uniqueness and universality. These seem important for global education today.

RECASTING THE MOLD FOR TEACHER EDUCATION PROGRAMS SPECIFICALLY GEARED TOWARD THE PREPARATION OF MINORITY POPULATIONS IN THE UNITED STATES OF AMERICA: LESSONS TO BE LEARNT FROM A THIRD WORLD INITIATIVE

P. Rudy Mattai
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USA

The traditional practice of exporting practices and programs in teacher education, from the developed countries to the underdeveloped, undeveloped, and developing areas of the globe has been coming under much attack within recent years. While the brain drain has been one of the more noticeable phenemenon of this kind of relationship, there has been a constant stream of criticisms that such practices and programs are in many more ways dysfunctional and inapplicable. Despite the vast body of literature that draws some similarities between the socioeconomic, political, and cultural realities of the traditionally underrepresented minorities in the United States of America and the peoples of the Third World, little has been done to show how some programs which have had some measure of success among peoples of the Third World may be employed in the developed countries so as to improve the socioeconomic, political, and cultural conditions of the traditionally underrepresented minorities in the United States of America. This presentation looks at a program conceived by the Bishop Regime geared primarily towards the increase of teachers in the classrooms in Grenada, West Indies, and discusses the merits of such an application in the United States so as to increase the presence of minority teachers particularly in inner-city areas.

INTERNATIONAL PARTNERSHIPS FOR IMPROVED TEACHER EDUCATION

John W. Miller
Georgia Southern University
USA

The primary purpose of this presentation is to explain a full range of efforts made by a regional American university to provide global, multicultural experiences for faculty, staff, and students involved in teacher preparation programs.

Georgia Southern University is a regional multipurpose university in Statesboro, Georgia. It has a student population which combines a number of rural high school graduates, many of whom are first generation college attendees, urban-metropolitan area students from the middle and upper middle classes, with a significant number of graduate, part-time students. All three of these groups are very limited in international experiences.

Four years ago, the School of Education embarked upon specific concerted efforts to create international, multicultural experiences for this student body and faculty. Generally speaking, the efforts to internationalize the education programs have centered on four foci. These include

1. Extensive faculty exchanges (e.g., South Africa);
2. Faculty and student study-travel programs (e.g. Russia, England, Greece);
3. Study abroad programs (England, Scotland); and
4. Recruitment of international faculty members (Russia).

Thus far, these initial efforts are creating much greater diversity and appreciation for the global context of teacher education. Hopefully, these experiences will increase geometrically as additional networks are developed.

PREPARING TEACHERS AS GLOBAL CHANGE AGENTS

Kamran Namdar
Vaxjo University
Sweden

Audrey E. Wright
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The second half of the twentieth century has produced a totally different kind of world from that of generations past, one which faces problems and challenges which are not limited to a specific people, country, or even region of the globe. These changes demand a radical change in the role and training of educators.

Traditionally, the teacher's role has generally been limited to imparting information which is quantitative in nature and reflective of the value-orientation of their local environment. In deed, their pedagogical training has been determined by the social and political demands of the state and country in which they reside. Further, in most university settings, faculty are limited by their own enthnocentric viewpoints in attempting to develop teacher education programs.

The transition of the world from one of separate units into a globally integrated whole requires a new vision of the teacher's role and pedagogical preparation. A working conference of educators from 25 different countries held in St. Petersburg in the summer of 1991 provided the catalyst for the development of courses which might be offered in a host country and at the local level. The conference led to a greater understanding of the concerns faced by educators wouldwide and increased international cooperation toward the preparation of teachers as global change agents.

RECIPROCITY IN STUDENT TEACHING: A KEY TO UNDERSTANDING IN TEACHER EDUCATION

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Overseas student teaching is a common phenomenon in American teacher education. Most U.S. colleges provide opportunities for their students to complete practicum experiences in a non-U.S. setting. International student teaching programs are typically one-way streets, however. While American student teachers flood foreign schools, the number of non-U.S. student teachers in American schools is miniscule.

Like other universities that offer teacher education programs, Boston College places student teachers in overseas settings (as well as in American Indian reservation schools) to broaden their cultural perspective. Unlike other universities, however, Boston College is involved in bringing student teachers from other countries to work in schools in the United States. In its "Wider Horizons Program," for example, Irish student teachers — both Catholic and Protestant from Northern Ireland and the Republic — student teach in an American urban school system, while they attend classes and otherwise learn about American cultural and educational values. Similar cooperative ventures with student teachers from other countries are currently being set up.

International cooperation and partnerships require this joint, two-way effort. Research on the advantages and effectiveness of this reciprocity for developing mutual understanding, as well as a description of ongoing programs, will be presented.

CROSS-CULTURAL ADAPTION AND COMMUNICATION TRAINING FOR INTERNATIONAL EDUCATORS

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A growing number of highly qualified, international sojourners are in positions where they can make significant, and perhaps unique, contributions to science, to development and to international understanding. Canada has a long tradition of sending technical cooperants to "developing" countries on short- and long-term assignments. Some are teachers or teacher educators in the traditional sense of the term, while others address the training component which now forms an integral part of virtually every international development project.

Successful adaptation to a new society, and to a new professional culture, in particular, is a prerequisite for cross-cultural effectiveness. Despite the multicultural nature of Canadian society, Canadians

posted abroad frequently experience difficulties in cross-cultural adaptation and communications. Trainers and those involved in the preparation of teachers face special pedagogical and methodological challenges.

This paper reports on recent approaches to predeparture briefings for international trainers and teachers. It draws on the author's research on cross-cultural adaptation in Asia and Africa, and his ongoing work with Canadian cooperants overseas.

A Cooperative International Pre-service Teacher Education Program: University of Nebraska at Omaha and the Education Center for Afghanistan

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The University of Nebraska at Omaha (UNO) has had a strong and consistent commitment to teachec education and to international education and programs. The UNO and the Education Center for Afghanistan (ECA) Cooperative Pre-service Teacher Education Program has been operational since 1986.

The principal objectives for the program are

1. To strengthen the ECA by improving its central capabilities in planning, budgeting, and policy development.

2. To strengthen the primary school network by improving its key elements, including curriculum, textbooks, instructional aids, and teacher training.

3. To increase the incidence of adult literacy by providing textbooks, instructional materials, and technical guidance to groups engaged in literacy training.

The teacher training accomplishments to date in this program are

1. Four teacher training professional development seminars have been conducted by UNO teacher training specialists: two on the development of teaching guides and two on the planning of teacher training programs.

2. During 1990-91, 17 Master Teacher Trainer (male) participants and 15 school-based (male) Teacher Trainer participants from inside Afghanistan (ECA schools) completed their teacher training programs.

3. Five female teacher trainers have completed their training.

4. Thirty-seven, 24-day, in-service training seminars were scheduled in 1990-91 for teachers from ECA schools in Afghanistan.

UNO has mobilized the resources necessary to begin the tasks of curriculum and textbook revision, and the development of teacher's guides, resource books and evaluation instruments.

NOTES

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
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