DOCUMENT RESUME

ED 394 856 SO 025 085

AUTHOR Gregorio, Lucille C.; And Others
TITLE Education in Asia And The Pacific: Reviews, Reports, and Notes.
INSTITUTION United Nations Educational, Scientific and Cultural Organization, Bangkok (Thailand). Principal Regional Office for Asia and the Pacific.
PUB DATE 94
NOTE 104p.
AVAILABLE FROM United Nations Educational, Scientific, and Cultural Organization, P.O. Box 967, Parkanong Post Office, Bangkok 10110, Thailand.
PUB TYPE Collected Works - General (020) -- Reports - Descriptive (141) -- Collected Works - Serials (022)
JOURNAL CIT Education in Asia and the Pacific; n27 1991-92

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Asian Studies; *Educational Technology; Foreign Countries; Higher Education; Secondary Education; Teaching Models
IDENTIFIERS *Asia; Technology Integration

ABSTRACT

Adequate technological education among schools in Asia is a major concern for educators and administrators. Many worry that the lack of knowledge about technology may make them obsolete. Other concerns include the cost of maintaining up to date technology and training. Many Asian educational systems today struggle to provide current technology such as software, hardware, and other electronic devices that students will need for their future. This publication reviews recent publications related to technological education by focusing on areas where educators are trying to upgrade their systems. The volume examines the topics of education perspectives, world education, innovations of information media, environmental education, Indonesian education, adolescence education, educational culture, and vocational education in developing countries. Annotated Asia/Pacific documents are listed and a 32-item bibliography of additional documents is presented. (JAG)

EDUCATION IN ASIA AND THE PACIFIC

Reviews, Reports and Notes

This publication contains special reports on information technology and teacher education, together with reviews and reports of recent documents selected from the collection of the UNESCO Principal Regional Office for Asia and the Pacific. We invite officials of Member States in the region, members of international organizations and all interested readers to send recent publications for possible review or mention in future issues, as well as special reports on new education policies or major programmes

Education in Asia and the Pacific: reviews, reports and notes (27):
1991-1992. Bangkok, UNESCO Principal Regional Office for Asia and the Pacific, 1994.
91 p.

1. EDUCATIONAL DEVELOPMENT - ASIA/PACIFIC.
I. UNESCO Principal Regional Office for Asia and the Pacific

379.5

EDUCATION IN ASIA AND THE PACIFIC

Reviews, Reports and Notes

Number 27 . 1991 - 1992

UNESCO PRINCIPAL REGIONAL OFFICE
FOR ASIA AND THE PACIFIC
Bangkok, 1994

Published by the
UNESCO Principal Regional Office for Asia and the Pacific
P.O. Box 967, Prakanong Post Office
Bangkok 10110, Thailand

Printed in Thailand

BKR/94/M/30-400

C O N T E N T S

CONTENTS (cont'd)

REPORT

INFORMATION TECHNOLOGY TOWARDS QUALITY IMPROVEMENT OF TEACHER EDUCATION*

by Lucille C. Gregorio

Introduction

It is believed that information technology is going to influence people's lives in the coming century, the "information-centred century". Our education systems will be strongly influenced by new high technologies such as electronic boards, televisions, microfilms, compact discs, VCR's satellite communications, computers and others which are yet to come.

Because of the new technologies coming up so fast, and flooding the market at reasonably affordable prices, educational planners find it difficult to cope, resulting to a mismatch or gap between the existing school curriculum especially at the basic level of schooling, and at the teacher education level. Teachers, teacher-trainers, and educationists who are not familiar with the new technologies find themselves being threatened by "professional obsolescence", a feeling that one is no longer useful in his profession. A big curricular/technological gap is taking place, and if this is not adequately looked into at the educational levels, our countries will suffer serious consequences in the quality of the human resources.

In 1990, a group of experts from OECD countries (OECD 1991) were given the task of examining "the great potential importance of the new technologies for "growth, jobs and welfare". Of the nine recommendations, one refers to technology in education, made on the premise that "technological change cannot be realized without changes in the education of a more highly skilled and educated work force".

Information Technology in Education

The importance of the statement above was recognized before it was put forward. In 1989 at the International Roundtable on "Qualities Required

---

* Paper prepared for the Asia and Pacific Seminar on Educational Technology, Tokyo, 29 September - 7 October 1992

of Education for the 21st Century" held at Beijing, China (Roundtable Report, 1989) the issue of educational technology aroused some reactions. These were: one educational technology is providing new opportunities for high quality interactive learner-driven learning, and this is expected to increase dramatically before the end of the century; and two, it is now possible to be a lifelong learner even if one is illiterate.

Roy Singh (1991) believes that the new technology is an outgrowth of the technology of information processing, and is hailed as a "learning rather than a teaching technology". He further stated that in its computer form, it will replace the printed book and bring more information and more flexibility in use; and the technology will individualize learning pace and process.

The application of information technology relevant to education is likely to create greater awareness and skills of the technologies involved; to provide greater responsibility assumed for ones learning; and to offer an opportunity to teachers to review the curriculum they are teaching along with appropriate delivery modes. Collis (1989) wrote about using information technology to create new situations. He remarked that new resources in software could (a) support learning by individualized instruction; (b) bring the outside world into the classroom; (c) access vast amount of information; (d) process complicated data; and (e) provide the microworlds, e.g. some kind of bounded universe for student exploration.

UNESCO-PROAP:APEID (1991), reported that the use of communication technology such as the radio and educational television could be a way to overcome problems of distance and time. Furthermore, access to technology by the learners will increase the efficiency and effectiveness of their learning and even after leaving school will take their proper niche in an information society because of the skills that they would have acquired.

There are various issues, however, which could limit the use of information technology. Those are:

1. Staff development and education personnel training;
2. The impression that information technology could be an additional load to an already overloaded system. It is not seen as a compliment or supplement to other traditional resources;
3. Software development and evaluation. As hardwares become available at reasonable cost, (though still prohibitive in many developing countries because of importation cost), the critical component is the availability of software for the various subjects that could supplement the school curricula as well as fit the hardware available;

4. Equity of access to the new technology especially on computers. Not all schools can afford to buy computers and other hardware, and even in schools that have these facilities are not able to cater to the needs of the big student population especially of developing countries. Also the computers are used for school administration and management, while other hardwares may be kept locked-up in cupboards; and

5. Countries have other educational priorities and government concerns which can affect decisions regarding the use of new information technology for teaching and learning. For example, putting up additional school buildings and upgrading of rural education (Malaysia); University and Technical Education (Brunei); upgrading literacy and nationwide teacher training on the new curriculum (Indonesia); and political and economic stability (Philippines).

Educational technology in teacher education

Educational technology has assumed special importance in an effort to renovate teacher education. The level of sophistication in its use ranges from simple indigenous technology to high technology. The use of sophisticated technology like radio, television, video recording systems, compact discs and computers have been shown to enhance the teaching-learning process. However, in many countries, the use is confined to elite schools. This means that only children belonging to affluent families have access to the technology. It is also in these schools that teachers are found who have received better training in various aspects of educational technology. These findings are recorded in the reports of studies conducted by SEAMEO-RECSAM (1989), on "Computers in Education" in Southeast Asian countries.

Not all primary and secondary schools or even teacher training institutions can afford to have state-of-the-art educational technology because of the prohibitive cost. While a number of teacher training institutions have acquired computers, the non-availability of the computers in a large number of schools influences the nature and extent of computer use.

The rapidly changing computer hardware also affects the capital outlay of schools. A long wait for models which are compatible with any available software may mean a big educational gap in relation to developed countries with computers-in-education programmes.

As earlier mentioned, the lack of software for the different subjects, including science and mathematics, affects the decisions of institutions to include educational technology e.g. computers in their training programmes. No doubt, several commercial softwares are available in the market, but many schools cannot simply afford to acquire them.

The use of local language is another problem related to software especially in countries where the medium of instruction at all levels is the national language. This is true for example in Indonesia, Malaysia and Thailand, wherein the computer programmes for the different subjects need to be translated into the national language to be understood by both trainers and learners.

Majority of teachers in developing countries have not been trained in the use of educational technology. The use of educational technology requires proper technological skills and the right attitude on the part of the teacher trainer, in order for the trainee to internalize the value of what the training is about. Learners will not derive benefits from computer-based lessons if the teacher himself is not well-trained and motivated.

For those teachers and teacher educators who are motivated to use computers in their training, Hummel (1990) proposed a new interactive computer simulation technology, called "Prototype Simulation-Centred Intelligent Computer Based Training (CBT) System". It is implemented using an expert system technology which provides (a) an environment in which trainees can learn and practice complex skills; (b) a computer-based coach or mentor to critique performance, suggest improvements and provide a role model; and (c) simulate the teaching of concepts and prescriptions using traditional CBT to deliver content and evaluate mastery.

The challenge for educationists and teacher educators

The challenge facing educational planners, decision makers and teacher educators, in view of the increasing pervasiveness and importance of information technologies, is not a question of whether we should include information technology in the teaching learning process, but how best to prepare the learners, especially the children for the coming information century. Because of this, we need to be prepared all the time to expect what is coming next.

A useful start in stock taking of the increasing body of knowledge was made by UNESCO-PROAP (1985) and SEAMEO-RECSAM (1989). The reports are available from the agencies.

As information technologies get more sophisticated, so do educational technologies which are essentially applications of information technologies in the classroom. The rapid growth of information technology, specifically computer technology has been placing new problems to teacher-educators, school administrators, and planners who need to adopt policies and programmes to assist teachers. As a consequence, the speed by which governments, and specifically educational bureaucracies, can formulate policies, plan forward or simply react has been put to a test.

The earliest use of computers in schools, in many countries was made in mathematics courses. In the latter years, computers were used in science courses especially in simulating scientific experiments. Today, computers are used as aids in learning other subjects as well. Therefore, the state of use of computers in these school subjects is a good gauge of the extent of computer use in schools in general.

The realization of computer illiteracy is gradually rising among teachers. It does even happen that a primary school pupil coming from an upper middle class family knows the basics of the computer, while his/her teacher may be completely ignorant. Because of this, many countries have recognized the importance, and have adopted computer literacy courses in teacher training and retraining programmes. It has been observed, however, that the overriding aim of such programmes appears to be centred still in students.

Introducing a computer course into the curriculum, integrating computer topics into regular subjects or using computers as teaching aids require the full support of the school administrators and the teachers.

The problem however, is that available CAI/CAL (Computer Assisted Instruction/Computer-Assisted Learning) programmes which are described as "user friendly" refer to the student as the user), but there is scarcely any mention of making available programmes that are "teacher friendly".

It must also be recognized that the pervasive growth of microcomputers and introduction of CAI/CAL produce stress or even threats on school teachers who had never received any training in the use of computers. This "technophobia" on the part of many teachers and school administrators can influence the attainment of a balanced perspective on their part as regards the role of computers in teaching/learning.

Requirements in adopting information technology for teaching/learning

The following are suggested criteria on what to look into before the adoption of information technology in teaching/learning:

1. Adequacy of infrastructures such as telecommunication system;
2. Adequacy of market supports such as repair and maintenance services;
3. Institutional capabilities to retrain teachers who are in the service;
4. Availability of expertise to develop relevant/appropriate software; and
5. Research capabilities of research personnel, especially on the effectiveness of the use of information/educational technology in teaching/learning of different subjects for different target groups.

Teachers need to be initially introduced to computer programmes similar to their teaching style and those which make their task easier, such as formulation of test items and development of test item banks.

In an international seminar organized by UNESCO, in Paris in 1988, a report on educational software clearinghouse was presented. Six conclusions were put forward. These are enumerated in Annex, with some commentaries from the reviewer.

Nishinosono (1987) puts forward his recommendations on how to design education in order to get prepared for the coming information age. These are:

a) Developing a system of education which will truly prepare society for the coming information age;

b) Applying the potential of these new information media to the activities of educational institutions at all levels; and

c) Compensating the evils of the information age, by emphasizing the humanization of the educational environment.

Action areas in UNESCO-APEID's work plan

Recognizing the coming information era, the participants during the APEID Regional Consultation Meeting held in Chiangmai, Thailand in 1990, identified two action areas in the programmes for the fifth programming cycle, 1992-1996: (i) "Science and Technology Education (including Science for All)", and (ii) "Reorientation and Qualitative Improvement of Secondary Education (including General Education and Vocational/Technical Education)".

For the science (mathematics) and technology education programme, the RCM recommended "Use of Information Processing Technology Including Computer Technology". In secondary education, RCM recommended action to promote "the Use of Educational Technology (including computers) to enhance efficiency, effectiveness and quality of secondary education. The rationale, status of the problem/programme, long-term and short-term objectives, specific outcomes, planned activities and monitoring and evaluation for both action areas are described in the RCM Report (UNESCO-APEID, 1991).

Concluding remarks

The last decade of the 1990s is considered a transition period in information technology. Though rapid changes are taking place, we are still expecting more inventions to come. Our problem therefore, is how to influence our governments and educational authorities to take long-term measures in order to realize the potentials of information technology in improving education. Our education systems have to continuously innovate programmes especially in teacher education in order to prepare the teacher educators and teachers to cope with the hardware which is not yet known, and the software that goes with it. The curriculum also needs continuous review, upgrading, strengthening or even revision.

REFERENCES

Collins, B. (1989). *Using I.T. to Create New Educational Situations.* Paper presented at the UNESCO International Congress on Education and Information. Paris.

Hummel, T.J. (1990). *Coached, Interactive Computer Simulations: A New Technology for Training.* Paper presented at the Annual Meeting of the American Educational Research Association. Boston, Massachusetts.

International Symposium and Roundtable Report. (1989). *Qualities Required of Education To Meet Forseeable Demands of the Twenty-First Century.* Beijing, China.

Nishinosono, H. (1987). *Country Report of Japan.* UNESCO Regional Seminar on the Evaluation of Computers in Education Melbourne.

OECD. (1989). *Information Technologies in Education: The Quest For Quality Software.* Reviewed by Williams, David J. Educational Technology Research and Development. [39:1 (91)].

OECD. (1991). *New Technologies in the 1990's: A Socio-Economic Strategy.* Reviewed by Beth Walden. Educational Technology Research and Development [39:1 (91)].

Roy-Singh, R. (1991). *Education for the Twenty First Century: Asia and Pacific Perspectives.* UNESCO-PROAP:APEID. Bangkok.

SEAMEO-RECSAM. (1989) *Computers in Education. Country Reports from SEAMEO Countries.* Penang, Malaysia.

UNESCO-PROAP:APEID. (1991). *Preparing ASEAN For the Information Century: A Comparative Study of Policies and Programmes on Computers in Science and Mathematics Education* (Research Report of Dr. V. Talisayon, published with permission from Institute of Asian Studies, Singapore).

UNESCO-PROAP:APEID. (1991). *Work Plan of APEID for the Fifth Programming Cycle, 1992-1996.* Bangkok.

UNESCO-PROAP APEID (1985). *Computers in Education: An Outline of Country Experiences.* Bangkok.

Annex

CONCLUSIONS OF THE INTERNATIONAL SOFTWARE CLEARINGHOUSE SEMINAR

1. We cannot afford not to provide teachers with information about available teaching and learning software.

   [Information in this case means information not just about the existence and quality of software, but also about how each package can be used in the classroom].

2. Although opinions apparently differ, there is, in fact, a broad degree of agreement on the feasibility and value of review and evaluation of educational software.

   [Some of the differences in opinion are the results of differences in terminology. In some countries "review" and "evaluation" are used interchangeably, while in others the terms have very different meanings].

3. There is a continued need for agencies and mechanisms to provide information about the quality of software to teachers.

   [In many countries, such information is not readily available to the teachers].

4. Teachers need training in the selection of software as well as prior training in the pedagogical uses of computers.

   [In most OECD countries, only a minor percentage of teachers have received in-service training in the educational use of computers].

5. There are opportunities for international cooperation in the review and evaluation of software and in access to educational software.

   [Although the cultural differences between countries pose some major difficulties, co-operation is possible].

6. The quality of software depends on a number of interrelated, evolving variables; its review and evaluation should, therefore, be considered in the light of past and future developments.

Reference

Information Technologies in Education: The Quest for Quality Software, by Organization for Economic Co-operation and Development. Paris, 1989. Reviewed by David J. Williams.

REVIEWS OF RECENT PUBLICATIONS

EDUCATION: ASIA-PACIFIC PERSPECTIVES

Roy Singh, Raja. *Education for the twenty-first century: Asia-Pacific perspectives.* Bangkok, UNESCO, 1991. 93 p. (Asia and the Pacific Programme of Educational Innovation for Development)

by Charatsri Vajrabhaya

The author, Dr. Raja Roy Singh, was one of the eminent speakers invited by the UNESCO Principal Regional Office for Asia and the Pacific (PROAP) to address a gathering at the Regional Symposium on Qualities Required of Education Today to Meet Foreseeable Demands in the Twenty-First Century (Bangkok, Thailand, 16-18 August 1990). The author indicated that both the discussions during the Symposium and the personal and informal discussions were a stimulating experience to which he owed the first impulse to write on the subject. Added to the ideas and viewpoints expressed by all the speakers were Dr. Raja Roy Singh's own extensive and varied experience in education, first as India's State Director of Education and Educational Adviser at the Federal Ministry of Education, then as Regional Director of Education and later Assistant Director-General of UNESCO in Asia and the Pacific. His services with UNESCO for 20 years enabled him to be deeply involved in international co-operation for the promotion of education in the region of Asia and the Pacific. Hence his book provides a rich and valuable resource on education in the past and present, and more importantly, on the role of education for the future, based on the perspectives and prospects of change. In the book, educational redirection and reform is not seen in the extended time-frame of the new century, but rather in a generational span of two or three decades.

The presentation in the book is in two parts, the first entitled *Perspectives of Change*, and the second *Prospects*.

The main theme in Part One is that of "change", which implies choice. Education may be seen as at the crossroads of development choices. Before proceeding to analyze the forces which bear on these choices, the author begins Chapter One by discussing "future" which, he says, is not a single, unidirectional track, nor a void, but rather multiple possibilities; not a single future, but a number of possible futures. The view of the future in

involving decisions regarding the choice of the "Preferred" future in the range of multiple possibilities gives a totally different orientation to planned action from the one implicit in the usual forecasting methods. Educational development becomes more consciously future-oriented rather than being only a medium for the transmission of the past. The setting of goals for education becomes a crucially important strategy in effecting change. In terms of education, the future is now. The setting of goals in a human system is not merely a matter of techniques, but fundamentally a function of judgement, of insight, of visioning the society, for without vision, the future may be only an illusion.

The author points out that education is at cross-roads of societal development and knowledge, and importantly, of dynamic change processes and the capacity to make choices. The key to understanding the situation of education, he says, is to recognize that it is not an isolated phenomenon nor a dependent one; it receives and contributes; it creates and is created. It is at its creative best when it is interwoven with the total social-human-knowledge environment of the future. The future-oriented education is actively promotive of innovation and dynamically evolving social goals. Chapter One ends with the following words: To know is to question and to exercise choice and discernment about the future and to act accordingly".

Chapter Two deals with the framework - emerging growth points and problems. The author states that the prospects of education in the future cannot be foreseen in terms of precise predictions. However, one can discern certain manifold trends in the domain, which will not only set the future direction of education, but will also chart the pathways for general societal development. Based on the general agreement among educational thinkers in the Asia-Pacific countries, the broad-range central trends of development which have a bearing on the choices that may be ahead in changing eduction are:

1. *Knowledge explosion*, particularly in science and technology in the latter half of the present century. Both theoretical knowledge and applied knowledge have increased exponentially, and each scientific and technological advance marks a new level of integration in the knowledge domain. Education is central to the knowledge-based society because it is the human being who is the creator, the preserver and unfortunately sometimes the destroyer of knowledge. Science and technology are one of the important sources of empowerment of education to deal with and respond to the demand and the unpredictabilities of the changing world.

2. *The development quest*, which marks in essence the heightened periods when the societies make choices of their future. In the

developing countries, development has served as a magnet for national aspirations. It is now recognized that development cannot be less than the realization of the potential of human personality. As education is a vision of the individual, so development is a collective vision of a society for itself. The development quest is a quest for new forms of growth which are designed around improving the quality of life of the people, and not merely in terms of economic gains. This humanistic development will bring about the ending of marginalization, a unique resurgence of human spirit, and will determine for mankind the educational, cultural, economic and political institutions of the future. Education is at the heart of such development.

3. *The emerging interdependent world*, through communication, travels, the market system and the common concern for the environment. The movement towards a One World vision is essentially of the different parts coming together in new networks of relationships serving the differentiated growth of all. It is the sense of unity through diversity that is the main characteristic of the emerging interdependent world, which calls for profound social consensus and new values orientation. The national societies also have to face up to the challenging issue in the diversities of cultures, religions, ethnic groups and languages.

4. *The looming problems*, created by technological progress and bound up in various ways with the realm of human attitudes, perceptions and values. The major problems are those related to the environment and population growth.

5. *The crisis of human value*, as a result of (a) the powers derived from the unprecedented capabilities for doing things, the know-how, and the economic forces which in conjunction with technology have created new configurations of power, organization and material wealth, and a set of "economic values" that are basically in conflict with "human values".

Part two entitled *Prospects* begins with Chapter Three on *Envisioning Future Education*. The author presents his concept of "integrative education", which is derived from the fact that education is an activity of the human spirit, and that implicit in all forms of education, except those which are ritualistic and repetitive, are some integrative assumptions about the human personality,

the nature of knowledge and human society. The process of envisioning education is but to project into the future the unified image of human being in his and her potentialities and possibilities. The future of education may be viewed as a series of issues of choices to be made, and educational goals as embodying the choices so made. Educational goals have to be envisioned as choices relative both to the social purposes and to the individual empowerment and development. Education, beside being a transforming force in intellectual development, has also to be a force which nourishes and strengthens social commitment expressed in caring for other people, specially the weak and the needy. The chapter provides contrasting models to illustrate what is involved in the questions *What kind of education in what kind of society, and what kind of society in what kind of education*?".

Chapter Four deals with education systems, which, according to the author, are being exposed to new challenges arising from a rapidly growing enrolment explosion, an expansion of the formal education systems, tension and dysfunctionalities due to the mismatch between the enrolment explosion and the purposes and goals to which the education systems work, and education systems which tend to be crisis-driven rather than development-oriented. In changing education for the future, the restructuring and reorientation of the education system is critically important. More and more the education system will have to evolve towards an "open system", with a variety and diversification of the institutional structure and new types of institutions serving a wider range of educational purposes. The formal systems will continue to expand with the impetus of enrolment explosions, at the same time the development activities outside the education system, i.e. the general societal environment, are likely to expand even more rapidly, resulting in both systems being more "open", the role of human agents in these systems is crucial. Hence the educational personnel and not educational technology will be the energizing force of the system.

In discussing the knowledge-base of education, which is the focus of Chapter Five, the author foresees that the role of education can no longer be limited to transmitting a fixed body of knowledge, but has to extend to a leading role in defining what knowledge is most worth and the uses thereof in the context of human striving and aspirations. For this purpose, education itself may need to be knowledge-oriented in a more comprehensive manner and develop the skills and capacities to respond to the emerging future. Given the central role of the formal education, any change and transformation of education must be focused in the main on the formal system, although the author stresses the importance of other forms and modes of education as well.

The author identifies qualitative transformation as the key concept in changing education for the future, particularly in relation to the developing countries of Asia and the Pacific. The urgent need is underlined by the widening gap between what the formal education does in terms of its goals, content, process, and, on the other hand, the new horizons of knowledge and of life that are defining the prospects of the present as well as of the future. There is need for learners to be exposed not only to a broader range of disciplines but also to new generative analysis and new areas of inquiry. Broad-based learning implies not only cognitive but also intellectual, physical, emotional, social and moral development of the learners. Hence the first level of education would provide learning for caring, for personal physical and health development, and for acquisition of basic learning skills by all children. The author warns against interpreting "basic education" as being limited only to a few essential skills of reading, writing and numeracy, i.e., the "minimalist" education which will make learning sterile.

At the post-basic stage, learning should be guided by the principle that the streams of knowing and development continue together and are not to be prematurely separated, i.e. the way of knowing the humanities and creative expression is not separated from the way of knowing of the scientific-technological. The author then emphasizes that the human sciences and language have the potential of a very high order for changing and redirecting education. Language, or the ability to communicate effectively orally and in writing, will continue to distinguish an educated person. The study of languages will be an important source of curricular enrichment. In terms of the broadening horizons of the interdependent world, the area of humanities and social sciences will provide the most fertile ground for curricular change in the next decades.

The author presents his view that the responsive educational change has to be along two lines: firstly, the world context should receive greater emphasis in all school subjects from the very beginning, especially foreign languages; and secondly, the study of world history and cultures at the secondary level should be introduced, not as chronicle of dates and events, but rather in terms of the great movements of human affairs. Science and technology education has to be broad-based and accessible to all students at all stages, and not designed merely for further studies at the higher, specialist levels. Science and technology should be integrated, and this integration of theoretical knowledge and its application with the associated skills should be at the heart of a qualitative change of science education at the schooling stages. Furthermore, environmental science should be closely ..nked to science and technology education so as to nourish in the young people a caring understanding of the interdependence of all living things, and of the delicate life-sustaining balances which hold the living and the inorganic together.

Another knowledge domain to be considered for qualitative change in education comprises the development-oriented disciplines, notably economic-social. Currently the economic studies at the school stage are either not provided at all, or are weakly developed. Issues linking education and work are to be considered also. The education for the work place in the coming decade will need to be broadly based in terms of learners' abilities, to include cognitive, manual, technological and inter-personal. The distinction between general schools and vocational training schools will become less sharp. The author forecasts that the demand for re-education and continuing education for the adults will grow rapidly in the next few decades as a result of rapid economic, social and cultural changes.

Another aspect dealt with in this chapter is information technologies for education. There appears to be two opposing views on this subject, one for and one against, the former claiming that instructional technology can make up for the lack of qualified teachers, while the latter advocating human interaction. The new technology is an outgrowth of the technology of information processing, and has not emerged from any developments or knowledge about how people learn and what human learning is all about. Whatever the viewpoints, the information technology will create a whole new world of visual pedagogy in which what matters is not subject matter but the skill, professionalism and persuasive power of the presentation. The basic question raised is whether these new technologies are changing fundamentally our models of knowledge, learning and teaching. Can technologies replace human learning characterized by enquiry, questioning, diverging, synthesizing?, asks the author.

After having discussed the content of education, the author stresses that when a change occurs in any one element in education, it affects the entire educational environment including the teaching-learning process, institutional organizations and the basic framework of beliefs and value assumptions. Consequently, he proceeds to advocate learner-driven learning, i.e., the individual learner as both the subject and end purpose of the educational process. The recognition of the learner as an active, indeed driving, force in the knowledge-learning process is crucial in the reorientation of education.

As important as the learner-centred process is learning for developing creativity. The pursuit of creativity in teaching and learning helps to bring the knowledge-learning process to its rightful base, that is, within the human being. To operationalize the concept of "learner-at-centre and creativity-as-goal", to use the author's own words, certain approaches and methods are advocated, e.g. active and participatory learning/teaching; constant interplay of thought and action, theory and application; teaching methods which treat knowing-learning as an integrated process; the recognition that the ways of

knowing and the sources of knowing-learning are various; and the principle that different learners learn different domains of knowledge differently.

The "will-to-change" and the quality of teachers are crucial in any effort to reorient education. Educational initiative which has its roots in the commitment of the teaching force has prospect of success and also of constancy. A teacher is the learners' guide, counsellor, role model, not a narrow specialist but a knowledge-worker, a lifelong learner.

To conclude the chapter, the author highlights the concept of a "learning society", stating that the ideas which are centred on lifelong learning form the core of future-oriented education. The motivation and the ability for continuing learning are realized in the style and habit of learning that are nourished in the learner. The author foresees that as human capacities begin to dominate the development process, education and training will lose the sharp distinction separating the two, and training centres will also be education centres, and all educational activities will be training activities. Similarly, the artificial distinction between formal education and non-formal education will cease. Knowledge networks are emerging as the new educational structures, as mechanisms of co-operation for sharing information and expertise, exchanging and even creating new skills and knowledge. Equally important are networks of persons - of fellow workers, of knowledge personnel, of learning groups.

The title of Chapter Seven - *Values: The Centre That Holds*, is quite thought-provoking. The general crisis in human values obviously reflects a crisis in education also. In spite of the fact that education is not and cannot be value free, increasingly it is treated as if it is. Education systems appear to be confused in responding to the learners in values development. Both the school and the home share the responsibility of education in values. In the early years, the "values" are centred on the formation of habits and manners. Then the adolescent years are marked by a high degree of awareness in the young person and of doubts, questionings, search of meaning and purpose - a growing sense of personal autonomy. This is the stage at which education with a commitment to values has to participate in the young person's development, in developing in the young minds a moral sensibility and discernment. To that end, the young people should be exposed to the great ideas and great expressions of values, ideas of human dignity and freedom, of individuality and social responsibility, of kindness and compassion. The teaching of moral values will not be "instructional", but dialogic, the conversation between the teacher and the taught and the ideas.

Chapter Eight, the final chapter of the book, deals with implications for planning of education. The author is of the view that the current educational planning tends to be more pre-occupied with inadequacies and shortfalls of the past rather than exploring the needs of the future; in other

words, it is seen as a way of resolving a "crisis", hence a short-term solution. Educational planning, therefore, has not found a mission of envisioning, stimulating and facilitating educational change and transformation. Since the 1980s most countries in Asia and the Pacific have recognized the need for a more comprehensive approach to education, and have been engaged in developing educational reforms with a much wider focus. To the author, a generation or so ahead is a reasonable time-frame for envisioning education for the future, reflecting upon and assessing alternative educational goals for the future, contributing to alternative societal futures, exploring the complex qualitative aspects of education and learning, and of the individual's growth in knowledge, marking new paths, new institutions and new structures of learning systems.

The author identifies three major elements which help define the educational futures: firstly, variables outside the domain of education and embedded in the larger society, economic-political, developmental, technological, socio-cultural, institutional; secondly, factors endogenous to the educational process, e.g., the human factor, issues of quality, knowledge and learning, the means and systems of education: and thirdly, issues of values, expressing the society's aspirations for that which continues and endures. The image of education for the future, conceived, defined and described systematically and clearly, becomes the starting point located in the future from which to view and assess the present. The approach brings into relief the alternative paths and possibilities from which the policy as well as the programming choices need to be made. The future-oriented education approach compels a continuous scrutiny and appraisal of the existing education systems and institutions. One of the key areas of educational innovation is institutional reform and renewal, for which educational planning is a powerful impetus.

Education in the perspectives of the future is essentially education in the process of deep qualitative transformation. Innovation lies at the heart of the change process, and its role is not only making incremental changes, but in delineating the strategy of change. The growth points of innovation are in areas where the transformation is deepest from the present to the future.

The final paragraph of the book touches upon the question of international co-operative action. While the main focus of future-oriented education and its planning and development is at the national level, international co-operation and participation have an important contribution to make. Firstly, the international communities can provide support for the changes of the global nature, such as environment and the process of globalization. Secondly, national initiatives in policies and programmes for reforms and renewals must be linked to a wider framework provided by the future-perspective in education, for example, through inter-country joint projects, exchange of experiences and insights, joint deliberations and

thinking, and exchange of well designed information, data and personnel. The international communities co-operation is "as important for the integrity of their intellectual mission as it is for the support of the countries" says the author

It is not often that one comes across a book about education for the future, let alone the future of education in Asia and the Pacific as envisioned by an Asian with first-hand and first rate knowledge and experience of education in the Asian and Pacific countries. It is not only the actual knowledge and insights that make the reading of this book stimulating, but also the vision of the author about the future which extends beyond the realm of education, the deep understanding of human nature and humanity, and his sincere concern about the education of the coming generations. The author continuously reminds readers that for education, the future is now, and urges educators and educationists to conceive education in its wider, global context of the future scenarios, rather than merely coping with crises on a short-term basis. Only in so doing can education become pro-active and not re-active, leading and not following social development of the future. Numerous quotations from the papers presented by other Asian scholars invited to the 1990 Regional Symposium manifest common trends of thinking in the region. The book does not only present problems and issues, but also possible alternative solutions for action, at the national, regional and international levels. Having dedicated a long period of his professional career to the services of an international organization, UNESCO, the author expresses his firm belief in international co-opetative effort, ending his writing with the following words. *The new year of a new decade can well be the start of a new trail in international co-operation centred on education for the future; it need not be a one time interest in ringing out/ringing in a century.*

WORLD EDUCATION DEVELOPMENT: RECENT TRENDS

UNESCO, *World Education Report 1991*. Paris, UNESCO, 1991. 149 p.

by Pravoj Promkasetrin

In the following-up to the World Conference on Education for All, Jomtien (Thailand), March 1990 and to International Literacy Year (1990) and some twenty years after the last edition of the UNESCO World Survey of Education, the Report is the first in a new biennial series commencing on periodically taking stock of progress worldwide towards the objective of education for all.

The focus of the report is mainly on education at the first and second levels, which continue to be the major preoccupation of educational policy-makers in the majority of UNESCO's Member States.

World educational growth since 1970

Adult literacy. The estimated number of illiterate adults in the world in 1990 was 948 million. UNESCO's projections indicate that the number will fall over the course of the present decade to around 935 million by the end of the century, though the numbers in sub-Saharan Africa, the Arab States and Southern Asia are still rising. The adult literacy rates in all regions of the world are rising and the global rate is expected to go above 75 per cent before the end of the century; in Southern Asia and sub-Saharan Africa the rate is expected to be lower; and in the least developed countries the rate is projected to be 49 per cent.

Around three-quarters (705 million) of the world's adult illiterates in 1990 are accounted for by just ten countries (India, China, Pakistan, Bangladesh, Nigeria, Indonesia, Brazil, Egypt, Iran, and Sudan). The highest rates of illiteracy are generally to be found in the least developed countries.

The main obstacles to faster progress in improving world literacy are economic conditions in the majority of countries which have low literacy rates and social factors in most countries hindering the educational participation of women and girls.

First level education. UNESCO's latest estimates show that the gross enrolment ratio in first level education is close to 100 per cent. However, this figure does not mean that there now exists a sufficient number of places or seats in first level education in the world to accommodate all children in the first level age-group. The first level enrolment ratios in some regions are still significantly below 100 per cent and the enrolment figures, especially in developing countries, include large numbers of over-age children, many of whom are repeating their grades. It is still the case in some regions that a substantial number of children never get to school at all. Moreover, large numbers of children who do get to school do not participate long enough to acquire literacy and other basic skills. In the developing countries generally, the trend in school drop-out rates is downwards but the rates are still high: nearly one-third of the children who start the first grade are estimated to drop out before completing Grade 4. The drop-out problem is especially serious in Latin America and the Caribbean.

Second level education. Enrolment growth rates in second level education during the 1970s and 1980s generally were higher than at the first level in all regions. The overall gross enrolment ratio in second level education in developing countries almost doubled between 1970 and 1990. In some regions there were changes in the balance of second level enrolments between general, vocational and teacher-training institutions but the majority of second level pupils in every region continue to be enrolled in general education institutions.

Third level education. Growth of enrolment in third level education in all regions over the last two decades was even faster than in second level education. In the 1970s there was an explosive growth of third level enrolments in developing countries. Growth slowed in all regions during the 1980s. In all regions, the expansion of third level education was accompanied by increasing diversification of post-secondary and higher educational institutions.

Teachers. Between 1970 and 1988 the total number of teachers employed in formal education in the world increased from 25.5 to 44.1 million. The proportion of teachers in the economically active population is considerably higher in developed than developing countries.

Finance. Teachers' salaries and allowances constitute the largest single component of expenditure on education. The overall share of teachers' emoluments in total public current expenditure on education is around two-thirds. The share is stable over time, with little difference between developed and developing countries.

Total world public expenditure on formal education increased to over a trillion dollars in 1988 - equivalent to around 5.5 per cent of world GNP.

Only one-eighth of the total was spent in the developing countries of Africa, Asia and Latin America. Total public expenditure on formal education in sub-Saharan African declined throughout the 1980s; there also was a decline in Latin America and the Caribbean in the first half of the 1980s.

Continuing challenges

Rising literacy thresholds. Literacy continues to be central to concern about the outcomes of increasing access to, and participation in formal education. The original literacy threshold of being able to read and write a short simple statement about one's everyday life is now attained in those countries by virtually everybody, yet it seems that there are higher and more diverse thresholds of literacy competence which substantial proportions of the educated adult population do not attain. Everyday life is constantly changing and literacy competencies which were considered adequate in an earlier era may no longer be so today. Such findings in a number of industrialized countries during the latter part of the 1980s have caused questions to be raised not only about the effectiveness of education, but also about the naure of literacy itself and its acquisition. Answers to such questions have implications for the design of strategies to ensure that everybody may acquire the literacy skills needed for full participation in modern life.

Out-of-school youth. There were an estimated 130 million out-of-school youth in the 6-11 age-group in developing countries in 1990, and 277 million in the 12-17 age-group.

Out-of-school youth represent a qualitative and not merely a quantitative inadequacy of the formal school system, insofar as the latter is unable to provide a sufficiently meaningful and useful learning experience to retain participants. Significant numbers of the out-of-school population typically belong to socially disadvantaged groups: the urban and rural poor, ethnic, racial or religious minorities, nomadic communities, populations living in isolated geographical areas, refugees and other displaced populations. Over the long term, as enrolment ratios in formal education steadily increase, the out-of-school youth population in developing countries is likely to be confined increasingly to population groups that can only be reached by non-formal approaches - communities living in remote rural areas, nomadic pastoralists, fishing and forest communities, street children in large cities and their special categories.

Girls. The majority of the world's out-of-school youth is female; in most regions, girls are under-represented in enrolments at every level of formal education. However, the situation is improving. In a global

perspective, the challenge of equal educational opportunity for girls is gradually becoming less a question of access to any education at all than that of access within education to the same range of opportunities open to boys. The global policy climate today is more supportive of measures designed to expand the educational horizons of girls than it was twenty years ago. In most countries, greater awareness of the extent of discrimination towards women has helped to focus attention on educational opportunities for girls as critical for any long-term solution of the problem.

In most of the developed countries, the quantitative disparities between males and females in educational access and participation have largely been removed and current debate is focused mainly on issues of socialization and the relationship between the type of education received and gender differences in labour-market opportunities. In both developed and developing countries, it is widely agreed that technical and vocational education generally are areas where more could be done to facilitate female participation.

Children with special educational needs. Children with special educational needs are more numerous than is commonly realized. It is generally estimated that this category typically accounts for around 10 per cent of any given age-cohort. Traditionally, the approach has been to place such children in separate groups or institutions for different categories of disability, with the aim of providing the best possible treatment by specialist teachers. It is now more widely realized that most children with special educational needs do not need to be placed in costly special schools and centres, which in any case encourage a feeling of segregation. Regular schools, it is felt, must play a part by developing their teaching and curricular so as to cater for a greater diversity of pupils than at present and allow for the integration of pupils with special educational needs who are not severely handicapped; experience in several countries has shown that this approach enriches the learning of all pupils.

Duration of compulsory education. Gradually in a global perspective, the duration of compulsory education is being extended. Currently, in 169 countries or territories for which UNESCO has relevant data, the median duration of compulsory education is between seven and eight years, ranging from around six years in Africa and Asia to around ten years in Northern America and Europe and the USSR.

There now are more countries where compulsory education extends to at least the first cycle of second level education than countries where it only covers the first level. Gradually, as resources permit, countries are adding the lower stage or part of second level education to first level education to form a compulsory 8-10 year basic education cycle.

Diversification. In extending the duration of compulsory education, a critical educational policy issue has been whether to provide for a diversified range of types of education - general, technical and vocational - in the upper part of the compulsory cycle. Most extensions of compulsory education beyond the first level have involved the incorporation of an already diversified lower - secondary structure and in practice the question has been whether to retain or modify that structure. In a global perspective, the tendency over the long term in a majority of countries has been towards the consolidation of the compulsory cycle into a common general education - including both academic and technical/vocational components - for all pupils, while at the same time postponing diversification until the post-compulsory stage.

Relationship to employment. The basic argument in favour of assigning some pupils to a specific category of vocational education at the second level has always been in part a deterministic one about pupils' learning abilities and future employment while counter-arguments have pointed to the possible injustice in assigning some children to educational programmes which close off or reduce the possibility of promotion to the next level of education before they have had a full opportunity to develop their learning potential. With the emergence of large-scale youth unemployment or underemployment, both in countries with diversified educational structures and those with undiversified ones, it becomes unclear on what basis pupils should be channelled into one type of second level education rather than another.

Partly as a consequence of the current uncertainty concerning the relationship between second level educational structures and employment, more attention is being given in some countries to the employment side of the equation, and in particular to the needs of employers. This shift in focus has been accompanied by a growing interest, notably in Western Europe but to some extent also in North America, in developing closer links between the schools and employers. Such links are easier to build in countries which have a highly organized industrial structure than in those where agriculture and the informal sector provide the major sources of employment.

Beyond the question of job-placement, there are more complex issues of what kind of training to provide: formal or non-formal, in the schools or at work, or both, and in what combination? There are arguments which suggest that the real need is to develop job-related training systems outside of the schools, but much depends on the attitudes of employers.

Some employers, within the limits of their resources, will try to provide whatever training is necessary in order to ensure the competitiveness of their enterprises. The growing fear, especially in some of the

perspective, the challenge of equal educational opportunity for girls is gradually becoming less a question of access to any education at all than that of access within education to the same range of opportunities open to boys. The global policy climate today is more supportive of measures designed to expand the educational horizons of girls than it was twenty years ago. In most countries, greater awareness of the extent of discrimination towards women has helped to focus attention on educational opportunities for girls as critical for any long-term solution of the problem.

In most of the developed countries, the quantitative disparities between males and females in educational access and participation have largely been removed and current debate is focused mainly on issues of socialization and the relationship between the type of education received and gender differences in labour-market opportunities. In both developed and developing countries, it is widely agreed that technical and vocational education generally are areas where more could be done to facilitate female participation.

Children with special educational needs. Children with special educational needs are more numerous than is commonly realized. It is generally estimated that this category typically accounts for around 10 per cent of any given age-cohort. Traditionally, the approach has been to place such children in separate groups or institutions for different categories of disability, with the aim of providing the best possible treatment by specialist teachers. It is now more widely realized that most children with special educational needs do not need to be placed in costly special schools and centres, which in any case encourage a feeling of segregation. Regular schools, it is felt, must play a part by developing their teaching and curricular so as to cater for a greater diversity of pupils than at present and allow for the integration of pupils with special educational needs who are not severely handicapped; experience in several countries has shown that this approach enriches the learning of all pupils.

Duration of compulsory education. Gradually in a global perspective, the duration of compulsory education is being extended. Currently, in 169 countries or territories for which UNESCO has relevant data, the median duration of compulsory education is between seven and eight years, ranging from around six years in Africa and Asia to around ten years in Northern America and Europe and the USSR.

There now are more countries where compulsory education extends to at least the first cycle of second level education than countries where it only covers the first level. Gradually, as resources permit, countries are adding the lower stage or part of second level education to first level education to form a compulsory 8-10 year basic education cycle.

Diversification. In extending the duration of compulsory education, a critical educational policy issue has been whether to provide for a diversified range of types of education - general, technical and vocational - in the upper part of the compulsory cycle. Most extensions of compulsory education beyond the first level have involved the incorporation of an already diversified lower - secondary structure and in practice the question has been whether to retain or modify that structure. In a global perspective, the tendency over the long term in a majority of countries has been towards the consolidation of the compulsory cycle into a common general education - including both academic and technical/vocational components - for all pupils, while at the same time postponing diversification until the post-compulsory stage.

Relationship to employment. The basic argument in favour of assigning some pupils to a specific category of vocational education at the second level has always been in part a deterministic one about pupils' learning abilities and future employment while counter-arguments have pointed to the possible injustice in assigning some children to educational programmes which close off or reduce the possibility of promotion to the next level of education before they have had a full opportunity to develop their learning potential. With the emergence of large-scale youth unemployment or underemployment, both in countries with diversified educational structures and those with undiversified ones, it becomes unclear on what basis pupils should be channelled into one type of second level education rather than another.

Partly as a consequence of the current uncertainty concerning the relationship between second level educational structures and employment, more attention is being given in some countries to the employment side of the equation, and in particular to the needs of employers. This shift in focus has been accompanied by a growing interest, notably in Western Europe but to some extent also in North America, in developing closer links between the schools and employers. Such links are easier to build in countries which have a highly organized industrial structure than in those where agriculture and the informal sector provide the major sources of employment.

Beyond the question of job-placement, there are more complex issues of what kind of training to provide: formal or non-formal, in the schools or at work, or both, and in what combination? There are arguments which suggest that the real need is to develop job-related training systems outside of the schools, but much depends on the attitudes of employers.

Some employers, within the limits of their resources, will try to provide whatever training is necessary in order to ensure the competitiveness of their enterprises. The growing fear, especially in some of the

industrialized market economies, that what today's school-leavers bring to the job is not enough derives in part from a growing realization that in today's emerging global economy employers who cannot find the school-leavers, or more generally the labour force, that they want in one country may take their capital and technology to another. Inexorably, it seems, education is assuming a global economic dimension that challenges the purpose of education itself.

Contents and purposes. Quite apart from changes in the overall economic and political environment for education, the expansion of participation in formal education itself over the last two decades has outpaced the revision and updating of the contents of education. Major areas of concern have been scientific and technological literacy, and understanding and respect for the environment.

The concern that all young people should acquire at least a basic knowledge and understanding of science and technology has increased with the growing presence of science and technology in daily life, and with the emergence in most countries of 'citizen's issues' related especially to health, food and nutrition, energy and the environment.

Two aspects of the on-going scientific and technological revolution have strongly influences approaches to science and technology education over the last two decades: first, the fact that so many advances in both science and technology have been made at the interfaces of traditional disciplines, and second, the reciprocal or symbiotic relationship between science and technology, with advances in science leading to new technologies which themselves permit further advances in science. These aspects of the recent development of science and technology have encouraged the trend over the last two decades in most regions of the world towards the teaching of science and technology in an integrated way.

However, several issues have not been resolved and remain the subject of continuing debate among educators. One is the weight or share which should be given to science and technology in the curriculum of compulsory education, others concern the way in which integrated science and technology should be taught, the age or stage at which disciplinary specialization should begin, and the meaning or interpretation which should be given to the 'technology' component of 'science and technology' education.

While the principle of an integrated approach to the teaching of science and technology in compulsory education is now widely accepted, the recent focus of concern of many leading educators has been on the need for more attention to be given to real life problems. The progress made in many countries in incorporating environmental components into the science curriculum has partly responded to that concern.

Implicitly guiding the trend towards integrated science and technology education and a greater emphasis on real life problems is the principle of accessibility - the idea that mathematics, science and technology can and should be made accessible to all and not just to a minority.

International education. The potential contribution of education to international understanding and peace, and to respect for human rights and fundamental freedoms was recognized from the earliest days of the United Nations system and was the subject of a Recommendation adopted by the Member States of UNESCO in 1974. Most Member States have reported that their educational policy statements reflect the aims and guiding principles of the Recommendation. Much more needs to be known, however, about the practical ways in which the aims and guiding principles of the Recommendation can be and are translated into actual learning experiences in and out of school. Basic background data are lacking at the international level on the share of total teaching time devoted to foreign languages at the different levels of education; likewise in regard to the teaching of other subjects such as civics, geography, history, music and the visual arts, all of which in different ways can and often do contribute towards a better understanding and appreciation of other peoples and their cultures. Many countries are actively engaged in efforts to translate such aims and objectives into concrete, practical form: for example, research activities and experimentation being carried out for the purposes of developing specific programmes, curricula, textbooks and other educational materials related to international education. A large number of countries are carrying out activities of an international character designed to further the aims of international education through increased human contacts, including exchanges of students and teachers, youth camps and study visits, twinning arrangements between schools in different countries, joint study and exchange of textbooks and other educational materials.

Emerging prospects and issues

Teacher requirements

Teaching is a larger profession than is commonly realized; 44 million or so teachers are currently employed in the world's formal education systems. In addition, there are many other persons engaged in teaching activity outside of the formal system: in the community, in the media, in place of work. Progress towards education for all will require additional teachers.

Growth of pupil enrolments. From a global standpoint, the main needs for additional teachers in formal education through the remainder of the present decade will be in the developing countries of Africa, Asia and Latin America.

By the year 2000, it is projected that there will still remain deficits in access to formal education at the first level in sub-Saharan Africa, the Arab States and Southern Asia. The feasibility of the projected enrolments depends critically on trends in pupil/teacher ratios and on the availability of teachers. If the recent downward trend in the former - in all regions except for Southern Asia - continues, then the global needs for additional teachers in first level education in developing countries by the year 2000 (7.8 million) will be 50 per cent greater than if pupil/teacher ratios remain constant at their 1988 levels (5.2 million). Trends in policy regarding class prize - the main determinant of the pupil/teacher ratio - therefore are fundamental for the prospects of progress towards education for all.

Recruitment and training. Analysis of regional and global trends in the recruitment and retention of teachers is handicapped particularly by the absence of systematic information on turnover in the teaching force. In the industrialized countries, where pupil enrolments are stable teacher turnover could account for teacher shortages and surpluses. In all regions, the feminization of the teaching force has implications which are not yet fully understood.

Regional and global trends in the education and training of teachers also are difficult to identify, but certain broad patterns are evident. One is the trend towards a more highly educated teaching force. A second broad trend, less easily documented at the global level, is the expansion and diversification of in-service training.

Systematic global data are unavailable on the proportions of the teaching force at the various levels of education that have not received any pre-service training, but there is little doubt that the proportions are substantial in many parts of the world. It is possible that there is declining confidence today in the value of received pedagogical theory, compared to some twenty years ago; the readiness of some education systems in recent years to recruit untrained teachers could partly reflect such a decline.

Assessing learning outcomes

The increasing concern in many countries for the quality of schooling has focussed on learning outcomes or achievements. The assessment of students' learning achievement is likely to be the subject of much educational discussion and debate during the 1990s. Three sets of issues are identified in the context of current trends and developments in assessment practice.

Teaching to the test. If, as is common, the knowledge and skills assessed by examinations are the ones that teachers, students and parents concentrate on to the exclusion of what else is in the curriculum, then there occurs the biggest single unwanted side-effect of external assessment.

Proponents of 'measurement-driven' or 'assessment-led' instruction have argued that if 'teaching to the test' produces higher test scores, then at least some learning has occurred. Critics have questioned whether those higher test scores represent useful and enduring learning which will convert into future achievements - as opposed to mere memorization of facts which are quickly forgotten. Despite the amount of testing going on in the world, many scholars probably would agree that there still is very little known about whether preparing for and taking tests actually causes useful and enduring learning to occur.

School-based assessment. It is now common for the school-based or teacher-assessment to be blended with that of external test or examination. The teacher-assessment is often scaled against the examination, suggesting the secondary nature of the teacher's judgement as teachers are sometime thought not to adhere to common criteria. Some researchers who are convinced that teaching and testing are inseparable have advanced the 'dynamic assessment' - literally 'teaching through testing'. From that standpoint, teachers are regarded as central to any meaningful assessment activity. The practical problem is to ensure that they have appropriate up-to-date assessment skills.

`Diagnostic' approach. The main argument which is given in favour of tests as instruments to help improve learning is the 'diagnostic' one. There is some justification for this argument in the informal 'diagnostic' testing carried out by the conscientious teacher who is continuously monitoring the learning progress of his or her students and adjusting the teaching as necessary in order to help them to learn. The merit of the teacher's testing is its direct relationship to the specific circumstances of the class. In tests and assessments devised by specialists outside of the school, the link with the class is not there; the test designers do not have the same information about the students' learning that the teacher has. The whole issue of how the results of such tests are to be assimilated into lessons and into the teacher's characteristic teaching style and disposition is still not fully resolved. It is not only teachers who need to be convinced of the value of the tests, but parents also.

Changes in assessment practice. The International Association for Educational Assessment (IAEA) has identified several developments which are likely to improve assessment practice. One is the increasing interest in extending assessment strategies to cover a wider range of tasks - e.g., oral tests, listening tests, project work and practical tests - than can be covered by the traditional pencil-and-paper examination. A second development has been the incorporation of school-based and descriptive assessments so that the total assessment of a particular student provides a more comprehensive picture of the student's achievement. A third development has been the growing use of tests which define levels of achievement in terms of typical tasks on which a

person at particular level is likely to be successful. Other developments identified by the IAEA include the design of better assessment strategies for complex behavior, the provision of special training programmes in assessment for teachers, the use of technology to assist in collecting, processing, and interpreting assessment information, and consideration of student participation in assessment.

The Report includes Appendix on World Education Indicators - giving a country-by-country summary of key aspects of education in over 160 countries.

The World Education Report should become a useful source of reference for policy-makers whose primary responsibilities lie in the field of education or in other strategic areas of national development

INNOVATIONS IN TEACHER EDUCATION: PROGRESS AND ACHIEVEMENT

UNESCO PROAP. *Innovations and initiatives in teacher education in Asia and the Pacific region.* Bangkok, 1990. 2 vols. - v.1 Comparative overview of 15 countries. - v 2 Case studies of 15 national systems. (Asia and the Pacific Programme of Educational Innovation for Development)

by Prayoj Promkasetrin

This two-volume publication identifies new initiatives and innovations in teacher education now emerging in Member States in Asia and the Pacific region, enabling a comparison between the current situation and that which was described in the 1972 report published by the UNESCO Regional Office for Education in Asia, in association with the Asian Institute for Teacher Educators, University of the Philippines, entitled *Teacher Education in Asia: A Regional Survey*.

While the 1972 survey was limited to the training of primary and general secondary school teachers the present survey extends to include the training of teacher educators, teachers for vocational, technical and other diversified streams in secondary education, or teachers at agricultural, trade, industrial and engineering schools at the secondary level.

Volume 1 of the Report entitled "Comparative Overview of fifteen Countries" reviews and summarizes the main issues, innovations and initiatives in teacher education emerging in the region, and relates these to emerging trends and developments in education in Asia and the Pacific; Volume 2 - Case Studies of fifteen National Systems provides more detailed case studies of innovations in teacher education.

The current innovations and initiatives in teacher education that are occurring in member states in Asia and the Pacific are presented under the following headings.

Pre-service teacher education. The initial preparation of teachers is critically important in teacher development and should reflect both the expectations which the community holds about the role of the teacher and the

skills and abilities of individuals who enter the profession. This approach to teacher education supports the widely held view in the Asia-Pacific region that teachers have a significant social development function which is far greater than the simple transmission of knowledge.

There is a general concern within the region over the supply and quality of entrants to teacher education institutions. There has been a tendency in recent years for standards of entry to be raised and more specific academic qualifications to be required of applicants. In many countries, interviews are an important part of assessment procedures.

All countries have selection procedures during pre-service training, but some countries are reluctant to terminate students. Supply and demand factors are responded to by changes in entry age, level of qualifications and duration of courses. Responses vary among countries.

Teacher education. Some countries already recognize the need for newly trained teachers to receive assistance and supervision. This provides the new teachers with an opportunity to consolidate their understanding of theoretical issues and the application of practical teaching techniques in a supportive and encouraging school setting. Schools are sometimes staffed to allow time for some senior staff, selected for their exemplary teaching, to conduct induction programmes. Some education authorities assign senior officers to be responsible for the supervision and induction of recent graduates.

In-service teacher education. In all the countries surveyed, emphasis is placed on teacher education and development as a process that extends throughout an individual's career.

It is also recognized that teachers at all levels of education (primary, secondary, vocational and non-formal) require regular opportunities for further study, for both personal and professional growth, so that they can maintain their commitment and motivation, update knowledge and skills, be exposed to new curricula and teaching materials, and have access to a reorientation programme if they wish to move into a different field of teaching.

Specialized teacher education. Innovations and initiatives in this particular area include, for example, the overseas training of primary teacher educators, the development of a structure of professional post-graduate teacher qualifications as an alternative to academic study at a university but with the same salary recognition as university qualifications, and advanced and higher diplomas offered through distance study. In addition, whenever necessary, universities are allowed to provide special one-year or half-year teacher education courses for university students and other adults who have not earned credits in the required professional subjects but wish to obtain teaching certificates.

Teacher recruitment and admission. It is recognized in the national studies that tension exists between issues associated with teacher supply and demand and entry qualification levels to teacher training programmes. National systems of education should recognize the importance of having general studies in teacher training for the promotion of national or community expectations. Such studies will improve the level of teachers' general education and thus the quality of the teaching force. Innovations in admission include for instance - use of television, radio and newspapers in the recruitment campaign to attract candidates into teacher training; an extended first-year intake into training to allow for selection process during the first year; and a lowering of entry qualifications into teachers' colleges for minority groups. Further innovations in teachers' recruitment and promotion include: the practice of contract-based recruitment; the establishment of a promotion system; and the practice of teacher certification as a basis of recruitment.

Structural changes in teacher education. A common theme in the country reports is that teacher education institutions should develop close links between one another, and between themselves and the school systems which they serve, to improve the relationship between theory and practice. The absence of such links in the past has led to many difficulties. Schools in certain country are often reluctant to receive students for practice teaching sessions because universities have not given careful consideration to the personal qualities of students before sending them out. To rectify this situation, a network between the university, the local board of education and the schools has been proposed. The forging of these types of links has occurred in a number of countries and has met with considerable success.

Systems links/cohesion, ways to organize teacher education. Consistent with the view that the education of teachers must be seen as a continuing process, a number of countries have sought to develop links between pre-service courses and in-service programmes.

Rigidity in the specialization of teacher training has also been regarded as a problem in a number of countries. There have been some notable attempts to overcome this through the development of links between primary and secondary training. Some country included a 'primary education package' in the training of lower secondary school teachers to make them more flexible in terms of development in schools.

Policy changes relating to teacher education. There have been important innovations and initiatives in Member Countries as regards policy changes involving teacher education. They include, for instance: granting teachers a leave on full salary to undertake post-graduate training in teaching the handicapped, teacher librarianship, guidance and counselling, and

reading recovery; and introducing flexibility into the teacher certification system to enable it to better cope with the diversification of upper secondary-school education, as well as to attract competent people to teaching positions in vocational and other practical subjects.

Training of teacher educators. The relationship between education and the role of the teacher educator, as well as the facilities required to organize relevant activities for teacher education, need careful attention. Teacher educators, because they are adequately educated in most countries and quite small in size, have never received the attention that classroom teachers have received. Theirs is the case of self-learning and self-improvement. Several countries have given attention to some of these problems and have initiated action, such as: establishing special comprehensive courses for the preparation of teacher educators; setting up special centres to remedy the deficiencies that occur in education of teacher educators, including the conducting of research; and the initiation of special programmes for primary level teacher educators.

Research on teacher education. Research data are essential both for planning and programming teacher education activities. It is, for example, necessary to have information on teacher demand both in general and in particular subject areas. Research is also required to enable teacher education institutions to evaluate the effectiveness of their programmes to enable them to achieve what they are intended to achieve. Innovations in the area of research on teacher education include:

- Collaborative research undertaken between teachers' colleges and universities concerning the perceptions of the 'actual' and the 'ideal' teacher, the relation between teacher attributes, qualities and skills and student behaviour in the classroom, and the usefulness and effectiveness of a foundation/professional course in pre-service teacher education programmes.

- Research conducted on teaching practice - identifying a set of teaching skills and examining their characteristics - and perceptions of head teachers/senior assistants, as regards the placement and supervision of trainees.

Developments since the 1972 Teacher Education Report. When a comparison is made between the material contained in the last comprehensive review of teacher education in Asia - the 1972 UNESCO study entitled Teacher Education in Asia - A Regional Survey - it is found that, apart from the expansion in teacher education systems referred to above, several problems and issues continue to be the same.

Balance of male and female teachers. In a few countries in the region, there is a predominance of female teachers (e.g. the Philippines). In other countries (e.g. Nepal, Pakistan), there is a dearth of female teachers. In these countries, the absence of female teachers has been one of the factors for the non-enrolment of girls, especially in remote and tradition-bound communities.

Education of disadvantaged groups. In some countries girls are viewed as destined for the home, while boys have priority not only for primary but also for secondary and tertiary education. In a few countries, however, boys and girls have equal opportunity and access for schooling at all levels. In many countries, children living in remote rural areas or residing in slum areas constitute the disadvantaged. Some countries, which are at an advanced level of development, also have packets of disadvantaged which include ethnic minority groups who are living in remote mountainous areas. These disadvantaged groups are generally neglected when countries in the region plan teacher education programmes and curricula.

Low status of teachers. In many countries, the status of teachers vis-a-vis other occupations in society is relatively low, a contributing factor to this social attitude being the relatively low remuneration of teachers. The low status of teachers has two adverse implications for the teaching profession and the welfare of learners. First, in many countries the better students do not opt for teaching. Second, since in many countries many teachers are mediocre, there is a trend towards deterioration of the teaching in schools.

Quantity vis-a-vis quality in teacher education. In a few countries, as in Thailand, there exists a surplus of teachers. In these countries, teacher education institutions can be very selective in determining and administering the admission process. A shortage of qualified teachers exists in some countries. What is urgently needed in many countries are teachers who are effective in reaching out to the disadvantaged groups, one of the main reasons being that teacher educators often have little exposure to the abject living conditions of the poor and therefore they lack empathy.

Use of educational technology. In an effort to renovate teacher education, educational technology has taken on a special importance. The level of sophistication of educational technology ranges from simple indigenous materials to the use of radio and television and computer technology. The use of sophisticated technology has been shown to enhance the teaching learning process. However, in many countries, the use of sophisticated educational technology is confined to elite schools.

Assessment methods and standards. Many countries are moving away from a scheme wherein there is a single external final examination. However, in some countries, the practice of continuous assessment (e.g. class

participation, homework, term papers, etc.) has contributed to the deterioration of standards of teacher training institutions; because students obtain assistance from tutors, parents and friends, their performance may not accurately reflect their own efforts and abilities.

Responsibility of teacher education institutions. In most countries, the responsibility of the teacher training institution ends with the awarding of a degree/diploma. Very few teacher education institutions obtain systematic feedback from their graduates.

Tenure, efficiency and in-service education. Without tenure, teachers and teacher educators feel insecure and this adversely affects efficiency and effectiveness. However, many teacher educators and teachers have no drive for self-improvement and professional growth after they obtain tenure. In some countries, there are no incentives for participation in in-service education, while in other countries the remunerations of beginning teachers and senior teachers are very similar.

Lack of research into teacher education. What seems to be lacking is research identifying exactly what constitutes effectiveness or work success interims of teacher behaviour, attributes and qualities. Research concerning in-service teacher education seems to be severely lacking in terms of governing, delivery, substance and mode. Most of the research available is the result of one-shot surveys or research dealing mostly with the types of problems teachers face in teaching a particular subject. There has been little research, however, of substantive aspects of teacher education that could be used in redirecting it.

TECHNOLOGY AND ADULT LITERACY: THE USE OF INFORMATION MEDIA

Anderson, Jonathan. *Technology and adult literacy*. London and New York, Routledge, 1991. 219 p.

by Prayoj Promkasetrin

The book grew out of a report on the use of technology in adult literacy programmes conducted under the auspices of the Adult Literacy Action Campaign as part of the Australian Government's National Policy on Languages. It examines how technology is used in adult literacy teaching and what are the reactions of those involved. It describes some of the ways in which technological tools are being used in conjunction with more traditional learning materials to assist the development of literacy skills. It attempts to gauge the effectiveness of the newer approaches, as well as to evaluate the potential of technologies for literacy teaching and learning. The evaluation could serve as a guide to teachers and administrators who might be contemplating the purchase of equipment and associated teaching and learning materials.

Chapter One analyses what is implied by the term literacy. It also defines the terms like technology and the new technologies. It discusses the magnitude of the adults literacy problem and kinds of educational provisions available for adults who lack basic educational skills.

According to the book, literacy learning embraces not only the integration of listening, speaking, reading, writing, thinking and numeracy but also the interpretation of the many diverse ways of rendering information in today's world - visual, aural and tactile - that new technological tools are making possible. It also involves information, knowledge and understanding needed by adults in order to live full and rich lives. Literacy learning thus includes functional, cultural, critical and technological literacy.

The book identifies different types of adult groups who need literacy:

1 *Native English adult speakers*

A high proportion of the professional literature deals with the use of technology in promoting adult literacy among native English speakers as, for instance, in apprenticeship and job training skills.

2. *Aboriginal adults*

Aboriginal adults, particularly in non-urban communities, are another group for whom occasional broad educational projects are undertaken. These programmes often include wider aspects of literacy encompassing what was identified above as cultural and critical literacy.

3 *Adults with disabilities*

The field of special education has always taken advantage of technological developments in helping those with disabilities. Much of the literature pertains to the use of technology with younger subjects. To a lesser extent, technology is used to enable physically disabled adults to acquire literacy, thus empowering them to live richer lives.

4 *Adults from non-English speaking backgrounds*

Demographic changes in population often resulting from immigration policies or the admission of refugees have brought into several countries increasing numbers from non-English speaking backgrounds. Consequently, here is a group for whom special educational provisions need to be made, and some quite innovative uses of technology designed to promote communication in the broadest sense need to be developed.

The approach to technology adopted in the book is a wide one: it includes what is commonly thought of as low tech, as well as high tech. It not only refers to the use of such tools as the familiar books, blackboard and overhead projector, but also suggests the use of radio, television, cassette and video recorders, telephone, computers, satellite, and optical laser disc technologies.

Chapter Two develops a framework for evaluating the potential of technology in adult literacy learning. The key stakeholders in literacy teaching and learning, namely learners, teachers and administrators, need to be interrogated through a set of questions proposed by the author: seven questions for administrators, twelve for teachers, and six for adult learners.

For developing an index based on responses to a set of questions, the author has developed a rating scale based on semantic differential.

Chapter Three reviews the literature on the use of technology in adult literacy programmes It provides a general overview of how and where technology is being used in literacy projects in a number of countries around the world.

Chapters Four to Nine show how the evaluation framework was applied in a series of case studies which focused on various new technologies in use for helping adults develop literacy skills. The case studies include: Computers as tools in literacy acquisition; Literacy at a distance with teleconferencing; Using narrow cast television to target remote Aboriginal communities; Lexiphon - a new literacy tool for trade training; Talking computers for the blind; and Interactive videodisc - a tool for ESL learners.

Chapters Ten and Eleven focus more directly on the use of computers and computer software suitable for adult learners. The final chapter attempts to look forward to certain emerging issues and challenging opportunities provided by developments in technology.

Although the book has focused on the situation in Australia of how technology is actually used to enhance learning. Such innovative teaching currently taking place in that country could be of interest to educators more widely. Readers should find something in the innovations described which touch upon their present teaching situation.

ENVIRONMENTAL EDUCATION AT SECONDARY LEVEL

UNESCO PROAP *Sourcebook in Environmental Education For Secondary School Teachers*. Edited by R C. Sharma and M.C. Tan. Bangkok. 1990. 311 p

by Lucille C. Gregorio

The sourcebook is an attempt to provide answers to some of the issues and constraints in implementing environmental education programme at secondary school level. It may be used by teacher trainers, supervisors and science teachers in preparing environmental education curricula and teacher education programmes both at pre-service and in-service levels.

The book is divided into two parts: First part deals with the knowledge base, and second with pedagogical aspects. Both parts have twelve chapters each. There are four appendices showing exemplar lesson plans, sample instruments for determining environmental literacy and behaviour patterns and training tests for teachers. In developing the chapters of the Sourcebook, the following were seen as primary considerations: (1) providing knowledge to the science teachers and generating a sense of urgency in view of the growing environmental crises; (2) establishing a relationship and providing a framework between the content and teaching of science and environmental component; (3) identifying objectives for environmental education in science teaching; (4) formulating curricula and requisite skills; (5) promoting basic skills in developing problem-solving approach; (6) making teachers' training effective by using pre- and post- training tests; (7) knowing and practicing teaching strategies relevant to environmental education and the basic disciplines; and (8) developing criteria for evaluation and implementation of environmental education.

The above considerations were articulated because of the constraints faced in implementing environmental education programmes. Some of these are: (1) the rigidities of the formal system in the prescription of the curricula both in the school and teacher training institutions which prevent the inclusion of environmental education into the school programme; (2) the complex interdisciplinary nature of environmental education, its inclusion in various

disciplines and consequent changes in teacher education programmes conflicts with the tradition bound approaches; (3) the lack of properly trained teachers to handle the environmental education programme; (4) the necessity of using a different approach in environmental education activity and field-based programme which is not considered in conformity with the usual classroom interaction; and (5) the problems related to teacher training such as: (a) paucity of resource persons to conduct the training programme, (b) lack of authentic updated materials/information regarding environment and its associated problems, (c) non-availability of tools to assess the impact of the training programmes, (d) lack of research in the field of environmental education methodologies and competencies, and (e) resistance to change on the part of the teachers.

The Sourcebook on Environmental Education is the outcome of the Regional Training Course which was organized by UNESCO-PROAP at the Institute for Science and Mathematics Education Development, University of the Philippines.

The topics covered in the first part: *The Knowledge Base* are as follows: (1) The Concept of Environmental Education; (2) Structure and Function of the Ecosystem; (3) Energy Flow in the Atmosphere; (4) Energy Flow and Nutrients Cycle in the Biosphere; (5) Population Dynamics in an Ecosystem; (6) Impact of Human Activities on the Environment: Global Issues; (7) Pollution- Its Effects on Man and the Ecosystem; (8) Degradation of the Forest Ecosystems; Its Socio-Cultural and Economic Implications; (9) Ecological Impacts on Aquatic Ecosystems; (10) The Effects of Energy and Mineral Extraction; (11) Environmental Management in the Context of Sustainable Development; and (12) Environmental Management and Impact Assessment.

The discussions in the first part of the Sourcebook are focused on the concept of environment and environmental education. Areas of environmental concern are presented e.g. hazardous products, indiscriminate use of technology, use of technology as in the green revolution programme, destructive fishing techniques, destruction of mangrove forests and forest resources, and energy mega projects. The chapters also present the concept of ecology, the components common to the ecosystems and their structures and functions, energy flow, nutrient cycle in the biosphere, and how human activities affect these processes at the local and global scale. The problems discussed refer to degradation of forest, water pollution due to energy and mineral extraction, warming of the earth and ozone depletion. There is an introduction of environmental management in the context of sustainable development, as well as suggestions for environmental management and impact assessment activities.

The first part suggests educational intervention, and should be viewed in its totality to cover natural and man-made environment, ecological, political, economic, technological, social, legislative, cultural and aesthetic aspects. All the topics relate to the teaching of science at the secondary level and could relate to other subjects as well. The material presented in this Part could serve as important source for designing and developing curricula and formulating teacher education courses.

The Pedagogical Aspects comprise the following chapters: Developments in Environmental Education; Framework for Environmental Education; Planning and Developing Curricula on Environmental Education; The Role of Values Education in Environmental Education; Values Clarification in Environmental Education; Ethics and Social Responsibility Towards the Environment: Guidelines For Science Teachers; Community-based Environmental Education; Inquiry and Problem-Solving; Games and Simulation in Environmental Education; Lesson Planning and Development of Teaching Aids; Supervision and Monitoring of Environmental Education Classes; and Research in Environmental Education: Its Implications for Classroom Teaching and Teacher Training.

Part II of the Sourcebook comprising the chapters enumerated above, provides an analysis of the developments in environmental education, outlining the general strategies. It presents a broad framework for environmental education at secondary level and suggests the various steps needed in planning and developing a curriculum. Three chapters in this part are devoted to the role of values. The assumption put forward is that values education is not just cognitive learning, but manifests through behaviour in specific situations and extends to the home and the community. The values being promoted are social responsibility, concern for others and harmony, which could be internalized through action learning and values clarification, and used in combination with other teaching approaches. The ecological principles with major moral implications for society which are included are: interrelatedness within nature; human as part of nature; respect for nature and responsibility for its protection; attitude of harmony and balance towards nature rather than conquest and mastery; diversity of species leading to stability; conservation; maintenance of stability and productivity of an economic system; and minimizing pressures on the ecosystem. The ecological principles are universal and have bearing on social, cultural, economic and political aspects of life.

The Pedagogical part of the sourcebook provides other teaching-learning suggestions on how knowledge, skills and attitudes about and for the environment can be achieved. These are through (1) assessment of community needs/resources and identifying environmental problems; (2) relating

environmental problems with science curricula; and (3) implementing environmental activities/projects for possible solutions. Some possible teaching/learning methodologies are: exposing learners to problem-solving situations using field and laboratory investigations or through educational games and simulations by manipulating a model or playing roles which assist the learners to develop an understanding of a feeling for the reality being presented. Lesson planning and development of teaching aids for environmentally oriented science classes have also been given attention, with focus on Science, Technology and Environment. The science teacher is exposed to strategies/methods for integrating the three components in classroom lessons in order to make the lessons relevant and meaningful. The exemplar lessons demonstrate, that environment-oriented science lessons are not difficult to prepare.

The book also discusses assessment of student performance. Various types of assessment instruments are presented with explanations of their purpose, usability, reliability and practicability.

Research in environmental education has been suggested in order to improve the implementation of the programme, as well as to realize the implications for classroom teaching.

At the present time environmental education is not viewed as a separate discipline but an integral part of the total school curriculum. It has been said that environmental education emerged as the outcomes of a re-orientation of the various disciplines and of different educational experiences. This enables the learners to achieve an integrated perception of the environment and to act towards it in a way that is more rational and attuned to social realities, now and in the future.

Action points have been suggested on effective utilization of the Sourcebook in country specific situations. Some of these are: (1) situational analysis of existing curricula, teacher training programmes and infrastructural facilities; (2) place of environment education in the science curricula and estimation of additional requirements; and (3) needs assessment of teachers in terms of (a) scope of training, keeping in view the environmental issues of the country concerned, state of existing knowledge and skills of teachers and identification of gap areas; (b) training content in terms of knowledge, pedagogy, skills and expected change in attitudes and behaviour; (c) training methodologies and applicability to the methodologies already used; (d) training resources in terms of experts, institutions and training materials; and impact evaluation feedback and continuous efforts for improvement.

In summary, the Sourcebook is very useful for all teachers and teacher trainers not only those in science education, but other disciplines as well, for the reason that it provides necessary knowledge and methodology in major critical areas of teaching/learning and in teacher training. It should however, be used considering examples relevant to the local situation.

EDUCATIONAL CHANGE IN INDONESIA: THREE INNOVATIONS

Shaeffer, Sheldon. *Educational Change in Indonesia, A Case Study of Three Innovations*. The International Development Research Centre (IDRC), Ottawa, Canada, 1990. 112 p.

by Sans Hutabarat

This manuscript is a report of a case study of three innovations on education implemented in Indonesia. The analysis and assessment covering 15 years of change since the first innovation, PPSP (Proyek Perintis Sekolah Pembangunan; Development School Pilot Project) was proposed to be developed in 1973. PAMONG (Pendidikan Antara Masyrakat, Orang Tua Dan Guru: Education Among the Community, Parents, and Teachers), the second innovation, was started late in 1974 as a local project in Solo, Central Java. The third, CBSA-SPP (Cara Bilajar Siswa Aktif-Sistem Pelayanan Professional: Student Active-Learning/Professional Support System) was introduced in 1979 as a small project in Cianjur, a district in West Java to develop "process-skills" which focussed on student-active learning.

Proyek Perintis Sekolah Pembangunan (PPSP)

1 Background

The first Five-Year Plan of Indonesia began in 1968/1969 as a systematic approach to respond to the overall problems of Indonesia's development. In the field of education, an Educational Development Board was established, in relation to the Plan, with special task of assessing the problems and potential of Indonesian education. This assessment was accompanied by seminars, workshops and other activities undertaken both at national and local levels on various educational issues.

Various shortcomings of Indonesian education were emerged and identified in these meetings. It was concluded that education was irrelevant to challenges of a developing society. It was very academic and was seen as separated from reality in terms of its content and teaching-learning process, and only to satisfy subjective desires for education rather than the objective

needs. Based on this analysis and intrigued by comprehensive schools in England, the Ministry of Education and Culture began to plan PPSP (Development School Pilot Project). The project was managed by a group of leading educators which later adopted comprehensive school system. The system consisted of an eight-year elementary cycle, a four-year secondary cycle and a clear distinction within the school of vocational and academic stream. Later the idea merged with the work of a Task Force on Identification of Educational Objective from the National Education Assessment and became "master design" for educational reform in Indonesia.

2 Design

The design envisioned the need for some short-term improvements in the education system such as a new curriculum, an increase in enrolment and better teacher training as well as long-term restructuring of the entire education system.

Starting from the need to develop a system more equitable, relevant, efficient and effective, it proposed the lengthy, systematic development of a pilot project, carefully tested and evaluated, which would affect and eventually reform all elements of the educational system. It was intended that such a process would lead to a completely new curriculum by 1981/1982. It was assumed that results would be ready for wide-scale application by the Fourth Five Year Plan (1983-1988). With the adoption of this design, the revised PPSP came into being. Details of the various components of the project were to be worked out throughout the mid-1970's.

Under the general goal of developing an effective primary and secondary education system relevant to individual and social needs, specific objectives of PPSP have been formulated as follows:

1. to develop student-centered courses in all subject areas for all age levels;
2. to develop courses at the school level relevant for those proceeding to employment in rural as well as urban areas and also for those continuing their studies in universities;
3. to develop courses and a management system which are sufficiently flexible to cater for students of all interests, needs and potentials;
4. to develop courses that are sensitive to the environment of the individual and enhance national spirit and identity,
5. to develop effective means of delivering the course.

6. to develop a comprehensive and continuous evaluation system of students and courses so that weaknesses can be corrected and strengths exploited;

7. to develop guidance and counselling procedures so that each student can be assisted to derive the greatest benefit from the educational opportunities available.

At the beginning the project was limited to eight pilot schools. It was seen as the model for eventual national dissemination. The PPSP was placed in IKIPs (Teachers Training and Educational Science Institutes) with the assumption that the innovations will be securely reliable.

A number of different components were identified and elaborated. Tied together into the core of the innovation were curricular objectives, modular instruction, continuous and individualized progress, mastery learning, streaming system in secondary education.

On the assumption that the efficient modular system could move primary students through six grades in five years and some secondary students might move through their three grades in less time, the new system was 5-3-3 (five years for elementary schools; 3 years or less for junior high school and 3 years or less for senior high school). The other assumption that the administrative efficiency could be increased by putting all levels of education under "one roof" the PPSP primary and secondary schools were consolidated in one school administration. As a total these changes were innovative, radical and far reaching, encroaching on all levels and all parts of the education system. They were different from common practice --- curricular, pedagogical, administrative -- and flexibly implemented according to the local needs and conditions.

3 Implementation and Management

The head of Curriculum Development Centre (CDC), BALITBANG was in charge of the project. The day-to-day administration was assigned to a PPSP project director. A project director worked with a school director and headmasters to implement the project. Local advisory and evaluation committees also provided assistance. The national co-ordination and consultation meetings which were held regularly provided a mechanism for official review and sanctioning of project implementation.

At the beginning, PPSP was characterized by a strong central leadership from both BALITBANG chairman and the Minister who ensured funding and moral support. After the Minister was replaced in 1978 and the Chairman of BALITBANG and Director of CDC left in 1980, the project was

in trouble. Funding began to decrease, central management teams and local advisory councils were abolished. The project management was not taken over by the new Director of CDC but was rather given over to a "task force co-ordinator".

Research and evaluation findings, experiences from the field, and advice from consultants, experts, and policy-makers led to several major changes in the project. In general, the more radical components were eliminated and the more complicated ones simplified; at the same time, the more "reasonable" components were slowly absorbed into the regular system. Some components were eliminated such as *modular instruction, individualized continuous progress, one-roof administration, terminal skill training programmes*. Some were modified or refined such as *evaluating pupil progress, guidance and counseling services, streaming and a credit system* at the secondary level.

Many problems were encountered during the implementation of PPSP in terms of conceptual, practical, political and financial. The next few years of its implementation a steady erosion was observed in its financial, moral and political support.

4 *Conclusion*

The real objectives of PPSP were not achieved.

Much of what it attempted can now be found in the structure and practice of Indonesian education, but much of what it explicitly hoped to accomplish has disappeared. As a model the project never went beyond the eight original schools. It became the "permanent pilot" project that aspires to national coverage and shows promising results during the pilot phase, but do not manage to mobilize enough support and resources to embark on nation-wide implementation.

Pendidikan Antara Masyrakat, Orang Tua Dan Guru (PAMONG)

1 *Background*

The Centre for Educational Innovation and Technology (INNOTECH) was created by SEAMEO in 1970 with the task to develop an effective and economic delivery system for mass primary education. The development of such a system, however, faced many problems: engrained, western traditions; rapid population growth; high drop-out rates; a lack of teachers, facilities and financial resources. Many educators in ASEAN region considered that the traditional system of education patterned after a colonizer was dysfunctional and impractical for any developing country to maintain.

There was the need for an alternative system of education with a flexible schedules, lower unit costs, higher pupil-teacher ratios, and support from parents and the community. In views of all these, it was proposed that a system of self-instruction and programmed instruction using modular materials was the one that would meet the need. This system would be an individually-paced education system with no age requirements, no grades, few formal class periods, and no defined schedule for completion.

This proposal was endorsed by INNOTECH in 1974. The project was entrusted to BALITBANG, Innovation Centre, apart from CDC. The project, known as IMPACT at INNOTECH, has been Indonesianized from its name to some of its basic goals The most important was a firm movement away from de-schooling (INNOTECH's so-called Community Learning Centre) to extending the out-reach of the formal school to drop-outs and non-entrants

2 Design

Based on concern and conclusion of National Assessment of Education for the needs of a mass education system in Indonesia, PAMONG was enthusiastically accepted as one of strategies whereby economics and equity of education can be curbed. Pamong's solution, in brief, to these problems was the introduction of module to replace teachers and books in order to increase the pupil-teacher ratio from 1/40 to 1/200.

Preliminary design and further development of the project was carried out by a team at the BALITBANG Innovation Centre and staff of the IKIP in Solo, Central Java

As with PPSP the PAMONG team was inspired by the opportunity to create a new system of education. Their task was to develop a prototype system, try it out in the field, and then deliver the completed model to the Ministry for national dissemination. All the team members were confident that this could be done with the support of leadership from the Ministry despite the complexity of the PAMONG packet.

IMPACT (INNOTECH) contributed pedagogical concepts to PAMONG representing a packet of innovation which the team was required to elaborate: the use of modules, programmed instruction, community participation, and a teacher's responsibility for more than one class of children. The planning process paid little attention to possible constraints to the development of PAMONG. It was assumed that children could and wanted to learn on their own; that teachers were dedicated and able to assume new roles without considerable re-training; that parents would encourage their children to learn and were able to monitor their learning;

and that voluntary community participation was feasible. Later on in the process of implementation these proved in adverse.

In general, PAMONG was assigned to develop an education system which is pedagogically effective, economically feasible, and able to reach a mass audience both of school-age children and of other children never in school or who have dropped out from school, through the use of modules and an increase in pupil-teacher ratios. The core of this innovation was the module which would allow one trained teacher to teach more than one grade. At first, the module was designed to save costs, but it has gained the further objectives of freeing other teachers to service out-of-school youth aged 10-16 years at external learning posts.

Components of PAMONG implied considerable changes in many areas of educational practices Teachers became managers of teaching-learning process. Although existing curriculum had to be followed by PAMONG staff, PAMONG did require a complete re-structuring of learning materials. A school's climate would become more open, free, and active. More interaction between teachers and pupils were to be encouraged. It was expected that this open system of primary education might be continued in higher levels.

3 *Implementation and management*

The strategy adopted for the development and implementation of PAMONG, in many ways, was different from that of PPSP. PAMONG assumed a much lower profile, its success depend solely on its merits and not on "connections" at the national level. The project was considered as an experiment, it has to be complete and perfect before it will be offered to the Directorate of Primary Education for national dissemination. A small team at the Innovation Centre (BALITBANG) was responsible for guiding, monitoring, funding and eventually selling this innovation. UNS/IKIP Solo was the primary technical implementator, the focus of administrative control in the field site, the centre for material development, the designer of implementation, evaluation and dissemination. The replication site in Bali took on a somewhat independent life of its own as it began to develop training schemes, diagnostic materials, and varieties of PAMONG's utilization apart from those developed in Solo

Support from local officials, teachers, and the community was high, especially among officials in Bali and Central Kalimantan. At their initiative PAMONG spread rapidly in their provinces. Teachers were very enthusiastic, though over-burdened by project activities One of the deficiencies mostly felt in the implementation was the lack of collaboration with the Directorate General of Primary and Secondary Education, the agency responsible for future dissemination of the programme

During the life of PAMONG, several changes occurred both in management and content. Project leadership changed at the BALITBANG as well as in the field sites.

Changes in content of the project were very substantial. During the first three years each of the major components went through major transformation. Ideas of the original "packet" were elaborated, tried out, dropped, revised, and tried out again. Modules, teaching/learning strategy, out-of-school education, community involvement, were among the major components that went through transformation.

Most research effort went into evaluation. It was done unsystematically and largely through informal feedback from the teachers and pupils during regular monitoring visits to schools. Much of the research that was done was not used effectively for either system improvement or marketing of the project, largely because of a lack of communication between researchers at the sites and project management team in BALITBANG, Jakarta.

4 Conclusions

Judgements regarding success or failure of PAMONG is difficult to make. One evaluator praised its fulfillment of its R & D mission; it solved a real problems, encouraged collaboration with local teachers and officials, encouraged parents and pupils to take education more seriously, found an appropriate system of education.

But contrary to its expectations, PAMONG has ended up with only "a place on the edges of the system where more conventional delivery systems have failed" and "assigned a more modest role: that of serving marginal groups, school drop-outs, and children in remote villages who cannot be reached by the conventional school".

Student-active learning/professional support system (CBSA-SPP)

1 Background

Despite all the efforts of PPSP and PAMONG which have been made it appeared that the nature of teaching and the quality of education produced had changed very little. Intensive case studies of primary education and of teacher training as well as the experience of ministry officials showed that teachers continued to teach rigidly and didactically with lectures and rote questions and answers.

Encouraged by an officer from the British Council and a curriculum specialist from the University of London, a seminar was held in 1979 at

BALITBANG to discuss the quality of primary education. The direction taken by the meeting was towards a focus on encouraging education workers at local levels to intervene directly in order to effect quality improvements by adopting and enriching and adding to materials and programmes of central government. This meant better supervision --- not the authoritative, hierarchical, administrative supervision of the Indonesian system, but rather one more professional and collegial in nature. Another British consultant who had been working with BALITBANG on a project in Cianjur, West Java to develop "process skills", or skills which focussed on student-active learning contributed to the content of this new supervisory relationship. The outcome of BALITBANG meeting was the decision to marry improved supervision techniques with student-active learning in a pilot action research project CBSA-SPP.

2. *Design*

A core group within the CDC - BALITBANG, many of whom had been very closely associated with PPSP, was given the task to develop this new project. It was assumed that: the working model to be developed had to build upon and modify existing practice; this reform could be based upon more active learning process; the model-needed to vary by context --- urban, rural and isolated settings.

The style of the process of planning for this innovation emphasized slow, gradual and incremental changes, and recognized the need for close collaboration both at the field sites and among the planners and units of the ministry. The planners took into account several important aspects of Indonesian society and government, for instance, the political and cultural ideals of mutual help (gotong-royong) and lengthy consultation (musyawarah). They also took into account local curriculum options and renewal of teacher training together with working within the current curriculum and textbook systems.

The purpose of this project was to develop "a system of clear and continuous professional support for teachers so that they and the pupils could create a teaching-learning situation which could genuinely develop attitude, enthusiasm, and creativity of the children as much as possible along with training them to enjoy work and receive and value the opinion of other people. Specifically the project was to:

a) develop a model to raise the quality of teaching through improving professional support for teachers and implementing student centered active learning;

b) evolve and perfect the model through a step-by-step experiment;

c) develop a national plan for perfecting the system of professional support for teachers which could be implemented within the constraints of the Government budget, administration and personnel.

These objectives were not particularly precise. Although it appears quite simple but in reality are rather complex and multi-ended, able to be interpreted in different ways by different people.

Local contents of curriculum, a part of the innovation was rather new to the teachers, especially the way in which the teaching skills were to be inculcated. This called for the component of supervision which the local education offices played a major role. A centre for teacher activity was established as the site for meetings, workshops and the storage and display of innovative teaching materials. Training courses, previously held only at the district level and usually organized by provincial officials, were also to be held at this school centre and planned by local committees to meet more immediate and locally relevant needs.

The plan to implement CBSA-SPP was not elaborate and detailed. Different patterns of implementation at different sites were expected. A pilot site was chosen in the Cianjur district of West Java. Several sub-districts and schools were chosen for the experiment in different parts of the district, which were considerably in contrast between levels of development. The project began in 1980.

3 *Implementation and management*

The implementation strategy for the project was clear. It was meant to grow slowly from the bottom up --- from one area to another, from actual practice in the school to a more general model, then to a systematic evaluation, and finally to a national plan. Sixty schools were identified in three sub-districts of Cianjur as core schools, with other as "satellite" schools.

CDC at BALITBANG formed a project team, train the key personnel and develop manuals and guides for headmasters and teachers. The local IKIP and SPG provided technical backstop especially teaching methodologies and training for project staff. The Ministry of Education staff at the district and sub-district level formed working groups to help establish and monitor the various project activities.

The CBSA-SPP has always suffered from financial problems. This was partly by design, based on a desire to work within financial constraints at the time of further dissemination. Only few investments were allowed such as buildings for Teacher Centres, and mostly financed by CDC. Strong support from BALITBANG, local officers and the schools was received. IKIP, SPG,

provincial education officers and the Directorate of Primary Education showed only little interest in the project. Despite these problems, the project team was able to develop effective procedures for staff training, evaluation and for further development of the innovation. They clearly were able to have the reform seen as something owned by local teachers, principals, supervisors and education officers.

Result of the development work and positive evaluations were publicized both inside and outside of Indonesia. The project attracted the attention of officials from the ministry. Visits of parliamentarians, district officials, headmasters and researchers from different provinces added to the popularity of the project. Based on such popularity the decision was made in 1984 to replicate CBSA-SPP in other sites where conditions warranted. Starting from 1985 the project moved to the provinces of West Nusa Tenggaza, West Sumatra, Lampung and South Sulawesi.

In each of these places, different components and monitoring structures were developed. As the dissemination taking place in many parts of Indonesia, the traditional rigidities of bureaucracy have crept into the innovation. This was mostly due to the press to expand without the planned replication sites. Other problems in the area of teaching and learning have also emerged Teachers and officials have not fully understood or internalized the intent of the innovation. Active participation of the pupils to some teachers only meant group work or discussion. A greater standardization in most components of the project were observed especially in East Java.

4 *Conclusion*

Systematic assessments of the innovation in classrooms and schools with the emphasis on what must be learned in order to develop feasible and expedient means to replicate the project were conducted regularly. Quantitative measures of change were not emphasized, careful monitoring of what actually happened in schools was carried out and functioned as feedback to the project developers.

Major evaluation was implemented in 1984. Evaluation of the project has revealed a number of results:

a) CBSA schools did better than non-CBSA schools in achievement test;

b) Input from a national steering committee, and from local SPCs and IKIPs were very limited and the materials were unreadable and not generally understood by the users;

c) The scope of the project has exceeded the developer's expectation;

d) Major components of the innovation could be successfully implemented: pupils were more active, co-operative and creative, and had greater skill in communication, etc.

e) Cost was not a major inhibiting factor compared to PPSP and PAMONG,

f) Changes in relation to collaboration among groups were dramatic and more democratic attitudes among children, teachers and supervisors existed.

The team at BALITBANG will ensure that this innovation moves fully into the mainstream of the educational system and therefore makes a real difference in how the children of Indonesia are educated.

Concluding remarks

The three innovations discussed above have been based on conceptually sound concept and valid educational theory. However, they show variation over time in a number of aspects related to their nature and content: They tended to be increasingly less concerned with fundamental structural change, to become more realistic in its scope, cost and schedule, and to become less conceptually complex with fewer components; The more recent the innovation, the more it has been based in schools, and the more it has also been focussed on teachers; Each project has shown greater cognizance of the importance of cultural and contextual variety.

The three innovations also show different and evolving strategies in terms of how they were planned, developed, implemented, and evaluated.

Lack of communication and collaboration between the units in the ministry, provincial and district levels dealing with the implementation were also observed during the life time of these innovations. Each of the innovation was only concerned about its individual project instead of becoming part of an overall integrated effort to improve the quality of education.

Since the three innovations were introduced during the end of the 70's and early 80's and implemented almost at the same time, negative rivalry could not be avoided. Instead of promoting collaboration among similar components of the projects (such as development of modules and other materials) responsible officials of one project criticized what the other projects had accomplished without trying to really understand the nature of the innovation. Thus, PPSP was easily dismissed because of its expensive and its elitism.

PAMONG was easily dismissed because of its expense and complexity (too many modules) and CBSA-SPP because it was "nothing new".

Any educational reform is likely to take at least 10 years to plan, implement, test and disseminate. Changes in the bureaucracy and leadership in the ministry and in the projects may create problems to the innovation during this time. This has happened to the PPSP and PAMONG where the new Minister of Education was appointed in 1978, chairman of BALITBANG in 1980 and Director of both projects in 1982. With the changes in the leadership continuation of the projects were disrupted especially since the new minister was not in favour of the experiments due to his interpretation about good education different from that of the innovators.

The process of innovation in Indonesia was a particularly difficult one because of its administrative dualism and of constraints present in the culture. The Ministry of Interior still hires, pays and assigns the teachers to their schools and supervises school finance and management. About 13% of pupils in Islamic schools are managed by the Ministry of Religious Affairs. The teachers themselves have two masters and never a clear idea of which to follow. Some teachers trained by the Ministry of Education in the use of PAMONG modules in small schools are transferred to regular schools and replaced by teachers who never have received the proper training.

In the last 20 years experience with educational innovation in Indonesia, much has been accomplished and much has been learned. The energy, dedication, and creativity of Indonesian innovators and their ideas have succeeded in influencing the general structure of the system and the organization of curricula, syllabi and lesson units. The Indonesian educators have learned most about the process of educational change. The questions for Indonesia, as for every other country embarking on a process of reform is how lessons such as these can be helped to fit within the financial, social, and political imperative which often make difficult the implementation of a more flexible, interactive, and ultimately 'cultural' approach to educational change.

ADOLESCENCE EDUCATION: FOUR MODULES

UNESCO PROAP *Adolescence education*. Bangkok, 1991. 4 vols. *Module one: Physical aspect; Module two: social aspects; Module three: sex roles; Module four Sexually transmitted diseases*. (Population Education Programme Service)

by C.L. Villanueva

Rarely one finds instructional materials meant for Asia and the Pacific as a whole which address the problems of adolescent pregnancy, physical, emotional, psychological changes during puberty, sexual behaviour, love, dating and relationship, sexually transmitted diseases and role expectations among male and the female. Being controversial topics, many countries and international organizations dare not tread in these areas, fearing a strong back-lash and anger from the countries. But times are changing. One cannot close one's eyes to the realities. And the realities show that 60 per cent of the population in developing countries is under 25 years of age and 40 per cent is under 15. At least, 13 million births occur to adolescents every year. Worldwide, there were about 245 million women aged 15 - 19 in 1985. Eighty two per cent of these lived in the developing countries and three-quarters of these in Asia. This figure is projected to increase by 75 million in the developing countries by the year 2020.

While some countries still have a low average age at marriage, this age is increasing in many countries. On the other hand, as a result of improved nutrition and health, young people nowadays are reaching physical maturity earlier and girls experience their menarche at a much younger age. While the increasing age at marriage is fulfilling the attainment of delayed marriage, which is one of the objectives of population education, late marriage is giving rise to some problems related to adolescent fertility in some countries. These problems in some countries include teen-age pregnancies, illegal abortions, and illegitimate births. Teen-age pregnancies and births are in turn associated with increased health risks to the mother and infant, curtailed education, reduced employment potential, and high population growth rate.

These problems have generated a very high interest in developing programmes on family life education, and have triggered off increasing demands for information and materials in this field. Regardless of the controversy that may surround them, programmes on adolescent counseling and sex education are being seriously considered by an increasing number of countries. This development inspired the UNESCO Regional Clearing House on Population Education to produce four modules under the umbrella title "Adolescence Education". Originally entitled "Sex Education" in the trial edition, the modules were pretested and revised on the basis of the comments and suggestions offered by a sampled group of respondents from India, China, Philippines, Indonesia, Thailand and the Pacific Islands. A significant few felt that the title "Sex Education" is not acceptable in their countries and that the package could be used more widely if the title were changed into something less controversial. Hence the new title: "Adolescence Education".

In the pre-testing of the trial edition, numerous suggestions were forwarded to UNESCO to improve the package. Many of these suggestions have been incorporated into the revision of this new version. However, a number of these suggestions, especially those which require more research and more in-depth treatment of certain topics, could not be taken up. There were two reasons for this. First, this package is a result of the information repackaging activity of the Population Education Clearing House by which existing materials found in the collection of the Clearing House serve as the primary basis for the development of this package. Secondly, some of the respondents asked for more in-depth analysis of certain topics which will make the orientation of the package heavily sociological or anthropological in nature. Such an exercise goes beyond the scope of this publication as it only aims at developing better understanding of the physical and emotional changes associated with growing up and show how some of the cultural, social and moral influences are affecting this puberty period of adolescents.

Objective of conceptual framework

These modules are meant to serve as a practical resource guide, primarily for teachers and secondarily for guidance counselors and youth workers who are engaged in teaching, training and communicating family life education concepts to adolescents. More specifically, this package is aimed at strengthening their professional skills in:

i) assisting young people acquire the knowledge, skills and values which will prepare them for the responsibilities of adult life, marriage, parenthood and participation in the life of the community, and thus contributing to healthy and satisfying lives;

ii) contributing to the development of the individual so as to promote happiness and responsible behaviour;

iii) helping young people to understand their feelings and beliefs and to cope with the physical, emotional and social changes which are part of growing up, enabling them to recognize what is important and to behave in a way which is caring and responsible;

iv) helping young people learn how to communicate effectively with others and to make wise decisions about all matters connected with family life, personal relationships, and membership in the community.

Adolescence educational programme designed to provide learners with adequate and accurate knowledge about human sexuality in its biological, psychological, socio-cultural, and moral dimensions. Adolescence education focuses largely, though not exclusively, on the individual - on self-awareness, personal relationships, human sexual development, reproduction and sexual behaviour. Human sexuality as the core of adolescence education is a function of the total personality, which includes the human reproductive system and processes, attitudes towards being a woman or a man, and relationships among members of the same sex and the opposite sex. It embraces the biological, psychological, socio-cultural and ethical aspects of human sexual behaviour. It helps people in understanding their sexuality, learning to respect others as sexual beings, and making responsible decisions about their behaviour. This serves as the framework for the package. To cover these various concepts adequately, the first module deals with the physical aspect, i.e. anatomy and physiology of type reproductive systems, conception and changes that occur during puberty. Module two covers the social aspect such as sexual behaviour, love, dating, relationships, adolescent, pregnancy. Module three deals with role expectations and sex stereotyping trial. The fourth module discusses the various types of sexually transmitted diseases including the AIDS

In all the four modules, each lesson is provided with a set of objectives and indicates the time required for teaching, the materials to be used and the set of procedures to be followed in carrying out the teaching. Information sheets to help teachers in expanding the subject, reference materials and activities and exercises for students are also provided.

The fact that some countries are ready to accept certain concepts related to sexuality and some are not provided the reason for packaging this set into four modules. By packaging the various major contents of sexuality into modular forms, the users will have the option to select only those modules which are useful, relevant and acceptable in their respective environment. For

example while countries in South Asia may find Module Two dealing with sexual behaviour sensitive and controversial, countries in South East Asia may find them useful and relevant. The teacher can select modules, lessons and teaching materials which are acceptable to the school authorities and are appropriate for specific grade levels and disregard those which may pose problems. In areas where the school authorities and society in general have more liberal attitudes and policies towards sex education, all the modules and lessons will be useful. It is therefore suggested that the use of these modules be discussed and initially screened with the school authorities, for the purpose of selecting suitable lessons that are acceptable for teaching. If the school authorities find the conceptual framework for adolescence education suggested in this package acceptable and useful, this package can be used as a basic reference material for a complete course for secondary schools. In case a separate course on sex education is not offered, although lessons and activities on various aspects of family life and sex education are incorporated in existing subjects such as biology, health, home economics or physical education, the teacher can select appropriate lessons from this package to enrich the teaching of relevant concepts.

EDUCATION, CULTURE AND PRODUCTIVE LIFE: A SYMPOSIUM

Ad J.J.M. Boeren and Kees P Epskamp. ed. *Education, Culture and Productive Life* Centre for the Study of Education in Developing Countries (CESO), The Hague. 1990 496 p (CESO Paperback No. 13)

by Muhammad Ishtiaq Khan

The symbiotic union between education, culture and productive life is as vital for a developing society as planned management and enhancement of its human resources and material potential. A country which disregards its culture and accords education low priority as compared to industrial and technological programmes runs the risk of losing its identity on one hand and meeting failure on the other for there is no universal development model which would suit all cultures and take roots without necessary human resource development. Conscious of the need to highlight the significance of, and to focus on, these factors, the Centre for the Study of Education in Developing Countries (CESO), The Hague organized, on the occasion of its 25th anniversary, an international symposium entitled "Education, Culture and Productive Life" from 9-21 December 1988. The Symposium addressed a number of questions related to past and future of education in developing countries, relationship between education and culture and production. The deliberations in the symposium identified accessibility, quality and relevance of basic education, cultural context of learning needs and learning processes, management of education, education with production, school and work cultures and role of media in education as areas for further research. The education for women, value education, literacy and education for the informal sector also received emphasis.

This book is the outcome of this Symposium. It contains 28 papers presented by the participants of the Symposium which were subsequently revised, shortened where necessary, and edited All the contributions in the Symposium, however, do not appear in this book; proceedings of the Symposium have been published separately The papers included in this volume were selected by the editors keeping in view the close reflection of the

main issues raised and the specific problems and solutions pertaining to the broad areas of research which were identified during the Symposium. CESO's position paper "Culture, Education and Productive Life in Developing Countries" is also included. The book is divided into four sections: Section I: Education, culture and development; Section II: Education and culture; Section III: Education and productive life and Section IV: Educational research and networking. Each article is treated as a chapter. Section I contains 4 articles, next 10 chapters are grouped in Section II, Chapters 15 to 23 are included in Section III and the last Section, i.e. Section IV contains remaining 6 chapters.

The papers contributed by a variety of specialists in different disciplines from Europe, Asia and the Pacific and Africa cover a number of developing countries in Africa, Asia and Latin America. The chapters in Section I deal with review of the major problems confronted by developing countries in providing the adequate and relevant education, highlight the relationship between education, culture and development, explore influence of culture on educational systems, and a non-formal education system developed in South East Asia. A variety of subjects is dealt with, in depth, in Section II. Chapters 12 and 13 in this Section are devoted to Latin American countries. The authors: Van Dam and Gerhard Peter present popular education approaches which focus on collective participation. The educational model for indigenous people of the National Territories in Columbia is the theme of the other paper by Jan Ooijens. Integration of indigenous elements into the modern schooling system and traditional learning in the area of cultures have been studied in Chapters 8 and 9. Chapter 10 provides insight into the development of national identity in Indonesia. The role of theatre as a communication medium in community development is expounded in Chapter 14. Section III: Education and productive life which includes 9 chapters deals with subject matters such as education cum production in Latin America, the Caribbean and some African countries, education with production in Kenya, education for self reliance in Tanzania, work experience programmes, vocational training and development projects etc. Two articles namely Chapters 21 and 22 discuss involvement of informal sector in training and education of various skills. Chapter 19 focuses on alien scheme of education in India and alternative model proposed by the author Stabhana Verghese. Girls' training in vocational and technical field in China is discussed in Chapter 20. Section IV comprising five chapters provides insight into two examples of networking: Education and Production in Theory and Action (EPTA) in East and South Africa and South East Asian Research Review and Advisory Group (SEARRAG). The role of CESO as an institution of educational research and assistance is the subject matter of Chapter 25. The main chapter (24) in this section is devoted to a conceptual and typological

scheme on evaluation research that leads to development of appropriate research designs with regard to work-related to educational programmes.

The CESO's Position Paper, the first article in the book, actually serves as a theoretical framework Many authors refer to it in their papers and offer their response to various issues raised therein. The papers included in the book cover a wide range of subjects, provide useful data, scientific analysis and in some cases recommend measures to combat the problems and suggestions to enhance the prospects of future research. To illustrate this we may draw attention to a few articles. Aklilu Habte in his article entitled Educational Development: the Challenge for Bridging the Gap analyzes brilliantly the current state of educational development throughout the world with the help of available data upto 1985. He convincingly shows that although there has been considerable increase in enrolment and impact in education in the developing countries the gap between the needs and resources is on the increase particularly in certain developing countries in Asia and Africa. The gulf between the developed and developing countries is also enlarging in educational quality and academic achievements and in the availability of skills for productive employment. To close the gap he suggests measures which focus on increased financial support, strengthening of management of educational enterprise and above all to undertake research and building of research capacity. Eileen Kane in her article: Education, Culture and Productive Life: Taking a Problem Orientation examines the concepts of culture from anthropological point of view. She systematically discards old concepts including the behaviourist definition as a collection of customs in favour of culture as ideas or ideational definition. She pleads "culture is a shared ideational system which enables us to generate appropriate behaviour in new circumstances". She disagrees with the anthropologists who "view the ideational system as rational and therefore amenable to change through the application of logic". She on the other hand supports the points of view of others who plead "that much of culture ..... rest in the realm of the non-rational - not irrational but non-rational, and therefore not susceptible to change by logic or scientific arguments". The examples she provides in support of this view point are quite convincing. One example here may illustrate the point. The common cold is caused, as is a common knowledge, by viruses but "wet feet or damp hair, or draught are avoided religiously by people who have a perfect understanding of viruses". We entirely agree with her on this point of view but would like to stress that only "much of culture" not all culture fall into the realm of non-rational. Parts of culture do change and will continue to do so in future. It is indeed ignoring these non-rational elements of culture which leads to failure of some of the otherwise well planned programmes. Ms. Kane, however, does not take into account the definition of culture adopted by the World Conference on Cultural Policies held in Mexico City in 1982. This definition which is more comprehensive

encompasses both ideational as well as behaviourist approaches. Based on her experiences in Zambia and Ghana she asserts that culture is indeed a motivating force and important factor in decision making.

Mr. Cheng Kai Ming in his article From Education to Work: the Cultural Dimension shows how the cultural characteristics of a people influence the approach to education at various levels, economic lives, work ethics and employment. The author points out that in East Asian cultures an individual is expected to adapt himself to the community vis-a-vis the West European cultures where the community is expected to adapt itself to individual's needs. He claims that his researches indicate that perhaps it is the culture oriented approach to education that has resulted in making Hong Kong "among the very few places without unemployment". In the article "the Educationalization of Vocation" the author, Shabhana Verghese examines the relevance of existing education in India to Indian culture. She claims that the alien scheme not rooted in the Vedic system of eduction is unsuitable and therefore unproductive. She pleads what is needed is not "vocationalization of education" but "educationalization of Vocations". She proposes an alternative scheme of 8 + 4 pattern; 8 years for "general foundation" and 4 years of "basic vocational streams" She claims that this system would produce "self reliant adults totally employable on the one hand and/or equally capable of independent and productive self employment on the other".

Limitation of time and space do not permit us to analyze and comment on all the papers presented in the Symposium and published in the book. Suffice it to say that the variety of approaches, experience based information, the critical analysis of the prevailing conditions in a number of developing countries and realistic suggestions contained in these articles make the book a valuable treasure of knowledge on the important subject matter education, culture and productive life.

EDUCATION AND CULTURE IN INDUSTRIALIZING ASIA: A CROSS-CULTURAL COMPARATIVE RESEARCH

Wielemans, Willy and Choi-Ping Chan, Pauline. *Education and Culture in Industrializing Asia* Leuven University Press, 1992. 473 p. Studia Pedagogica, New Series #13.

by Yogesh Atal

The Research Centre for Comparative Education of the University of Leuven undertook a cross-cultural comparative research project, under the leadership of Professor Willy Wielemans, "to explore the rich potentials of Asian Cultures for new approaches to industrialization and to provide a theoretical framework that would support changes in their educational system". This book is an outcome of that exercise.

This project was carried out in two phases. For the first phase of the project (1988-89), the Centre received a grant from UNESCO under its Participation Programme in 1988. During this period, the model was tested in six Asian countries, namely, People's Republic of China, Japan, Malaysia, Philippines, Singapore and Thailand.

In the second phase, launched in 1990, the research was extended to cover additionally, Republic of Korea, Taiwan, and Hong Kong. In February 1991, a conference was organized in Bangkok to discuss the country studies and examine the applicability of the Relations-Axes model developed by the principal researchers -- Willy Wielemans and Pauline Choi-Ping Chan. Dr. Chan also conducted the country studies for China and Singapore. In the light of the discussions at the Conference, the country studies were revised by their respective authors; and the editors refined their model and also wrote the concluding chapter devoted to a comparison of the findings.

The first two chapters of the book are theoretical, authored by the editors. The first chapter is devoted to the explication of the concept of "Industrial Mentality" (IM) which is central to this research. In the following chapter, the editors have presented the conceptual framework employed in this cross-cultural investigation.

Then are presented, in nine chapters, country studies done by the nationals of those countries utilizing the conceptual framework and the guidelines provided by the project leaders, the final chapter is entitled Comparison : A Question of Serving (Post) - Industrialization and/or Preserving the Cultural Identity.

The main aim of research was to focus on the course curricula for the secondary education in order to find out the extent to which they help in cultivating "industrial mentality" among the school children, and whether there are any differences in different countries of Asia.

The study was essentially designed to test the following interrelated hypotheses:

1. In the core curriculum, when there is more emphasis on transmission of cultural values then there will be less emphasis on the introduction of the industrial mentality;
2. When there is stronger emphasis on the industrial mentality, then there will be less stress on cultural values; and
3. That there is actually a balance of emphasis on both the industrial mentality and cultural values in the core curriculum.

The principal researchers have worked hard to develop a complicated model to which they have given the name of Relations - Axes model. The axes identified by them are:

Man -- Nature
Man -- Fellowmen
Man -- Self
Man -- Transcendental

It is indicated that in each of these relationship - axes there can be an injection of industrial mentality. Moreover, it is suggested that Natural Sciences deal with the first axis, Social Sciences with the second axis, Human Sciences with the third, and Religious studies with the fourth axis. It is further assumed that in each of these disciplines, there is a mix of industrial mentality and cultural values, and that it is the profile of the mix that varies which explains whether the education system is preparing the pupils for industrialization or not.

Using the hermeneutic approach applied to historical data the authors have reached their conclusions. One such sample: "Values deriving from Buddhism, Islam, Shintoism, Daoism tend to be more in conflict with industrial mentality as compared to Confucian and Christian values" (p. 423)

While the researchers highlighted considerable differences concerning the degree of industrialization in different countries they all noted that it is both politically and economically promoted everywhere. The entire region, without exception, is participating in a world wide process of industrialization. As a consequence, in all the countries the occupational profiles have changed sharply and people are being trained in appropriate knowledge and skills. There is a certain broadening of geographical and social horizons associated with both geographical and psychological mobility. Migration, non-familial employment, and exposure to western ideas have initiated a process of restructuring of the family and of weakening the base of the local community.

The extent to which all this has happened via the medium of education is not so clear. The fact that most of the country studies could not adhere to the research guidelines, provided by the project leader, in their analysis of the curricula hint at the weakness of the model. The section on education in each country study -- which should have been the core -- is perhaps the weakest, and not much could be derived from it by way of generalization to support or refute the hypotheses. A content analysis of the syllabi could have been helpful, although it is inherently impossible to decipher "qualification objectives", "identification objectives" and "social function" of each individual discipline by simply listing the titles. It required a different methodology and much more rigorous analysis. One is also not sure of the desirability of that effort. The point is very simple: changes in the syllabi reflect changes in the society -- its economy, polity, and social structure. Thus analysis of the existing curricula should reflect the present stage of that country's socio-economic development. One fails to understand how transmission of cultural values goes against industrialization provided that we are talking of an anti-industrialization culture. In any case, if the editors are referring to (post) industrialization -- as they do in the very subtitle of their last chapter -- why do they insist on identifying industrial mentality?

Of course, there are other conceptual problems as well. The concept of culture used in the study is rather narrow, almost an equivalent of non-western traditions. The falsity of modernity -- tradition dichotomy so widely accepted is not questioned here either. Weberian approach to modernization is highly biased and is strongly refuted by many. But this study unquestioningly accepts it. Asian data do not oblige Weber. It may be argued that a move towards industrialization is an act of accretion; it does not automatically lead to a process of attrition as is implicit in the assumptions of the project leaders.

There is certainly a theoretical overkill. The conceptual framework is in a way a recap of the traditional anthropological paradigm of culture which talks of three axes of Man to-Man, Man-to-Nature, and Man-to-Supernatural relationships. The addition of Man-to-Self category, and identification of Industrial Mentality (IM) in each of them is useful, but the search for IM in

the secondary school curricula -- in the manner in which it has been conducted in this research -- appears to be futile. The conclusion reached by the researchers is very obvious and does not call for such a circuitous route.

However, the country papers make interesting reading as they provide some useful information even when they do not subserve the so-called theoretical model so laboriously developed by the editors of this monograph.

VOCATIONAL EDUCATION IN DEVELOPING COUNTRIES: EXTERNAL ASSISTANCE

Hultin, Mats *Vocational Education in Developing Countries* Swedish International Development Authority (SIDA), 1987. 56 p.

by M.A. Qureshi

This book reviews the experiences of a number of vocational education projects financed by external funding agencies and presents the findings of a study. Vocational education has been one of the priorities of foreign aid to developing countries. Most of the institutions which received support were, with few exceptions, public. The general purpose of assistance was to meet urgent manpower needs and give high rates of return on the investments.

The emphasis of aid givers on formal public vocational schools eventually came under criticism as, in many cases, they offered irrelevant courses, produced students who were in no way better employable than those from academic schools, had poor teachers and incurred costs beyond what the governments could afford. A view was propagated that public authorities should restrict their responsibility for education to general, basic education while enterprises should have the main responsibility for vocational education. This view also encountered some opposition. It was claimed that training by enterprises would not meet training needs in rural areas, of cottage industries, and of women. Enterprises would tend to look after their own interests and these might not coincide with those of society and individuals.

The study points out that the public diversified schools would eventually meet the basic training needs of the technological societies better than enterprise institutions which would be needed in follow up pre- and in-service training.

It reviews the current literature and project studies on the issues raised and systematically analyses the objectives, structures, programmes, administration, staff development, teaching, internal and external efficiency and funding of the various projects. A review of the objectives of vocational education shows three major developments. In the beginning the objective

was to provide well defined specialized skills which could be many depending on the nature of societies and the economies. The objective was eventually extended to include prevocational training and attempts to change attitudes to manual work, to stop the exodus to cities. The third stage objective was changed to meet needs in a rapidly changing information and technology society, with vocational education having a broad general base on which specialized courses, including short courses, could easily be built.

The findings indicate that the programmes generally used a modular approach with the vocational subjects gradually becoming more important with curricula in the post-secondary level centres promoting specialization as well as courses of varying duration -- from a few days to a year or more. Vocational school administration varied by many agencies, with varying degrees of success, with diversified schools being managed by the Ministry of Education and the skill training centres by enterprises or enterprise-related agencies including technical ministries.

Hiring and retaining vocational teachers was generally found to be difficult in most cases. These difficulties were and could be reduced through closer co-operation with the enterprises, particularly the use of their staff, released from other assignments, as teachers on a full time or part time basis for design and implementation of relevant curricula and provision/training in the use of equipment in the schools.

In some projects the teaching stressed improvement through the inclusion of production work in the schools and practical training in the enterprises for the students. There is a note of caution against the introduction of production work in the schools particularly when it is allowed to overshadow the schools' main purpose. On the other hand, use of computers, robots and simulators as parts of both curricula and teaching methodology are recommended even in the LDCs as their use has shown improvements in external productivity and internal efficiency and helped to reduce costs.

The study points to the need for improving the financing of vocational education by using payroll taxes particularly for the enterprise-related skill training centres. Conventional taxes can also be used. Student fees however are not recommended in pre-service training as it may make it difficult for vocational schools to recruit students.

There is also a need for research in vocational education as is done in general education. The external productivity, internal efficiency and cost effectiveness of various training models also deserve more attention. This is specially true of agricultural education which is biased towards males despite the fact that agriculture continues to use females in larger numbers than males in most agricultural occupations even in many LDC's.

In summing up, the study points out that the review of the experience of vocational education projects financed by external agencies shows that public formal vocational education institutions have been overemphasized at the expense of support to private or other enterprise-related non-formal institutions. The needs of rural areas and women have received insufficient attention. Employers have not been properly involved in projects. The proposed system of mixed formal/non-formal public/private vocational education requires that future projects cover all components.

A positive correlation has been shown to be existing between a country's economic development level and the success rate of vocational education projects. Projects in East Asia did better than projects in Latin America and in the Mediterranean area which did better than projects in Subsaharan Africa and South Asia. This finding might indicate that the latter continents should have had more technical assistance in project work than had been provided.

Another finding of this comprehensive investigation relates to the software components which are generally more difficult to execute than hardware components. However, the former are given insufficient attention but have, when taken into consideration, had a good outcome with considerable institution building. Software project components are important and should be given a great deal of attention and supported with technical assistance. Also, there is a continuous need of studies and research in vocational education.

The Library and Documentation Service of the UNESCO Principal Regional Office for Asia and the Pacific, Bangkok continues to build up its documentation resources, which include a major collection of publications on education in the Asia and Pacific region. The publications reviewed and annotated and printed in this issue are some interesting documents recently received. The UNESCO Principal Regional Office will appreciate being notified of documents from Asia and the Pacifc related to education in the region, published within the past few years, which have not been included in its bibliographies. Better still, readers may wish to send the actual documents to the Library and Documentation Service, UNESCO Principal Regional Office for Asia and the Pacific, P.O. Box 967, Prakanong Post Office, Bangkok 10110, Thailand.

ANNOTATIONS ON ASIA/PACIFIC DOCUMENTS

ANNOTATIONS ON ASIA/PACIFIC DOCUMENTS

ASIA/PACIFIC

Bray, Mark. *Educational planning in small countries.* Paris, UNESCO, 1992. 130 p.

The book is divided into three parts. The first part focuses on contexts, approaches and structures. It discusses the dimensions of scale, the nature of educational planning in small countries, sources of expertise, and international linkages. The second part focuses on the planning of specific components. Separate chapters focus in turn on curriculum development, special education and post-secondary education. The third and last part brings together the discussion in summary and conclusion. It links back to the conceptual framework with which the book began, and notes ways to develop the planning capacity of small countries.

Bray, Mark (ed). *Ministries of Education in Small States: Case studies of organization and management.* London, Commonwealth Secretariat, 1991. 295 p.

This book is one of the products of a Commonwealth Secretariat project which was launched in 1989. It analyses the ways in which provision of public administration in small states differs from that in large states, stressing both the special advantages gained by small states and the special constraints that they face. It deals with the extent to which small states inherit models of administration which were originally designed for larger states and are of questionable appropriateness in small states. Fourteen country studies namely Botswana, the Gambia, Seychelles, Brunei Darussalam, Barbados, Dominica, Guyana, Montserrat, St. Lucia, Jersey, Malta, Kiribati and Solomon islands are presented in many different orders.

Bray, Mark and others. *Making small practical: the organization and management of ministries of education in small states* London Commonwealth Secretariat, 1991. 127 p

The book aims to stimulate thinking by presenting and discussing the administrative models and experiences of a range of countries. The book has seven chapters. Chapter one notes the characteristics of small states. Chapter two focuses on the framework of public administration in small states.

Chapter three turns to the formal organization of Ministries of Education. Chapter four turns to the management aspects. Chapter five expands on personnel matters. Chapter six focuses on international linkages. Chapter seven completes the book with a summary of experiences and models and a final overview.

International Council of Associations for Science Education (ICASE). *Who's who in science education around the world*, published by ICASE with the assistance from UNESCO. Edited by Brenton Honeyman. Monash ACT, 1991. 106 p.

This reference book contains brief profiles on prominent science educators and their work. It includes prominent women and men in the areas of primary, secondary and tertiary science education, from 55 countries throughout the world. Entries have been published in alphabetical order by country of residence.

Japan. National Institute for Educational Research (NIER). *Towards formulating goals, aims and objectives of secondary education for the twenty-first century: final report of a Regional Seminar*. Tokyo, NIER, 1991. 95 p.

The Report contains summary of country experiences in terms of efforts to achieve the current goals, aims and objectives of secondary education. Discussions on issues of major socio-political, economic, cultural and educational developments are described in chapter two showing how education has changed as a result of major developments. Chapter three deals with some of the major future scenarios of education in Asia and the Pacific: how to formulate the goals, aims and objectives for secondary education in order to meet the foreseeable demands of the twenty first century. The report ends with conclusion and recommendations in chapter four.

Khanna, C.P. *Panorama of education. global perspective*. New Delhi, Doaba House, 1992. 155 p.

The book presents creative ideas on different aspects of education, which have shaped men's conception of the aims and meaning of the educational process. It analyses important educational themes on educational understanding, rural development through education, life long education, teacher education, vocational education, future education, higher education, moral education, religious practices, women's work opportunities, disparities in educational facilities, and non-formal education as well as education and its linkages with life.

Pan Pacific and South East Asia Women's Association (PPSEAWA). *The role of women in environmentally-sound programmes; proceedings of the Pan Pacific and South East Asia Women's Association Pre-Conference Workshop, 1-3 November 1990, Nakhon Pathom, Thailand*. Bangkok, 1991. 119 p. (illus.)

This is a report of the proceedings of a Pre-Conference Workshop which aimed to create "greater" awareness of the causes and effects of present environmental conditions in the countries of Asia and the Pacific and to contribute to the promotion of women's leadership in supporting, advocating and carrying out programmes designed to conserve their environmental heritage and create sustainable development in their respective countries. The workshop provided a forum for interaction of selected women participants concerned with environmental issues such as: women's role in environment conservation: constraints' identification, improvement of design skills in national and local programmes planning; enhancing networking; considering training methods and modules; and providing plan for regional and national networks for the exchange of information and experience among women of Asia and the Pacific.

Roy Singh, Raja. *Education for the twenty-first century: Asia-Pacific perspectives*. UNESCO, Bangkok, 1991 93 p (Asia and Pacific Programme of Educational Innovation for Development)

More than ever before, education must be visionary and future oriented. This book looks at education in the future and examines the changes that will take place in connection with the future scenarios of the political, social, cultural and economic situations. It also looks at educational development, educational domains, educational goals, broad-based learning, information technologies for education and teachers and students' roles.

UNESCO Sub-regional Workshop on Promotion of Integrated Education of Disabled Children in Regular Primary Schools, Quezon City, Philippines, 2-8 October 1990. *Report of a Sub-Regional Workshop on promotion of integrated education of disabled children in regular primary schools, by UNESCO PROAP/ACEID in collaboration with the Bureau of Elementary Education, Philippines*. Bangkok, 1991. 63 p

Consisting of six chapters, the Report presents in the first chapter the aims to exchange experiences on the promotion of integrated education of children with hearing impairment in the regular primary school system. The following chapters deal with summary/synthesis of country papers: issues and problems and trends in special education reflected in country papers. The innovative strategies are suggested in eight areas namely staff development;

materials development; information education communication (IEC); parent/community/special schools involvement; research and assessment; legislation; human resource development and community-based rehabilitation; and linkage with international agencies.

UNESCO Writing Workshop to Develop Reading Materials for Women with Limited Reading Skills, Chiangrai, Thailand, 1-10 October 1990. *Booklets developed at the UNESCO Writing Workshop. A series of 12 booklets: Australia, Bangladesh, China, India, Indonesia, Laos, Pakistan, Papua New Guinea, Sri Lanka, Thailand.* UNESCO, Bangkok, 1992. 12 vols.

This series of booklet represent a regional attempt to respond to a challenge based on two facts: first people with limited reading skills, most of whom are women, risk relapsing into illiteracy if there is no appropriate materials for them to read. Secondly, development messages are likely to be lost when they are not available in easily digestible forms for the target population, the majority of whom have limited reading skill. The series cover a wide range of topics all of which are designed to represent women as contributing individuals to their family, as human beings with integrity and potentials and as people who can direct and control their own life. The series consist of 12 booklets produced by the following countries and on the following topics: - Australia: "Women's work, women's worth" - Bangladesh: "Two in one" - China: "Beautiful and productive courtyard" - India: "We are equals" - Indonesia: "Women making money" - Laos: "Learning to read and read to learn" - Pakistan: "Calculating women" - Pakistan: "The Dark shadow" - Papua New Guinea: "Dekap's Lesson" - Sri Lanka: "Effort" - Thailand: "A-Sa'Ma's Broken Dream" - Thailand: "Home Sweet Home".

UNESCO. Office for the Pacific States. *Evaluating externally-assisted projects in education: guide for the non-specialist practitioner*, by F.L. Higginson. Bangkok, UNESCO, 1990. 60 p.

The guide aims to promote an interest in evaluation and improve the quality of project evaluation. It is divided into two parts. Part one presents the conceptual framework of project evaluation for externally-assisted projects in education. It explains the nature of systems analysis, basic concept of programme evaluation, problem-solving and decision-making and ends with how to evaluate the effectiveness of in-country training activities. Part two is a standard instrument intended for use by the reader-evaluator in a variety of situations with emphasis on project evaluation and not educational evaluation.

UNESCO Planning Meeting on Developing Entrepreneurship Competencies among Youth in Disadvantaged and Depressed

Areas, Bangkok, 11-15 December 1989. *Innovative education for promoting the enterprise competencies of children and youth: report*. Bangkok, UNESCO, 1990. 36 p. (Asia and the Pacific Programme of Educational Innovation for Development)

The Report refers to the work of the Joint Innovative Project (JIP) which tries out an innovative approach focusing on developing entrepreneurship competencies and skills among the youth, particularly those in disadvantaged and depressed areas. The report presents conceptual framework/model for entrepreneurship relating to income distribution, unemployment and improving the life chances particularly among school leavers. Country experiences are reviewed together with their needs and prospects. It states strategies for developing enterprise competencies and their infusion in continuing education.

UNESCO. Principal Regional Office for Asia and the Pacific. *New training strategies in educational planning and management report* Bangkok. 1991. 49 p

The Report presents new orientations and strategies in the preparation of educational planners and managers of tomorrow. It reviews country experiences in the training of educational planners and administrators. The development of new training strategies is described. Regional and international co-operation is reviewed in terms of future priorities within the context of the World Development of Education for All and Framework for Action to Meet Basic Learning Needs.

United Nations Office at Vienna Centre for Social Development and Humanitarian Affairs. *1989 World survey on the role of women in development* New York. United Nations, 1989. 397 p.

This survey is a result of the thirty-third session in 1989 of the Commission on the Status of Women in 1989 which adopted resolution 33/5 by which it noted the growing awareness of the need to recognize the contribution to development made by women's unremunerated work as well as women's work in the formal sector. It comprises 11 chapters, dealing with overview of the role of women in development; women, debt and adjustment; women, food systems and agriculture; women in industrial development in developing countries; women and services; women in the informal sector; policy response to the creation of equal opportunities in the world of work; women and technology; culture and the economic role of women; statistics and indicators on women's participation in the economy and equality; development and peace: an inevitable and irresistible interdependence.

AUSTRALIA

Australia. Department of Employment, Education and Training. *Girls in schools: Report on the National Policy for the Education of Girls in Australian Schools.* Canberra, Australian Government Publishing Service, 1991. 121 p

This report, for the school year 1990, is the fourth and final report for the initial five year period of the National Policy for the Education of Girls in Australian Schools which was endorsed by the Australian Education Council and by the major non-government education bodies. The report provides information on the work that was done towards meeting the four objectives of the National Policy namely raising awareness of the educational needs of girls; equal access to and participation in appropriate curriculum, supportive school environment; and equitable resource allocation. The report reflects systems' formal monitoring and assessment of project outcomes.

Australia Department of Employment, Education and Training *Retention and participation in Australian Schools, 1967 to 1990* Canberra, Australian Government Publishing Service, 1991. 51 p.

The aim of this monograph is to present data on the extent to which young Australians have been staying on at school beyond the age at which attendance is compulsory. Two indicators are used: the apparent grade retention rate and the age participation rate. Section one discusses some of the main features of the data while section two outlines the concepts of retention and participation and examines some of the limitations of their use as measures of comparative performance of education systems.

Meek, V Lynn and C J Goedegebuure *Higher education: a report* Armidale, N S W. University of New England, Department of Administrative and Higher Education Studies, 1989. 100 p

The document presents the survey on the reconstruction and future direction of Australian Higher Education. It analyses the historical context towards a new higher education system. It also provides information on transition of systems, autonomy and quality as well as funding and management of future direction of Australian Higher Education. Summary of the research findings and statistical tables are included.

BANGLADESH

South and Central Asia Conference on Education for All, Dhaka, 9-11 December 1989 *Country documents - Bangladesh* Dhaka, International Conference Centre, 1990 54 p

This publication indicates the response of Bangladesh for the South and Central Asia Conference on Education for All (SCACEFA) and the World Conference on Education for All (WCEFA). It comprises the draft National Plan of Action (NPA); two case studies on non-formal primary education and underprivileged children's education; Swanivar Bangladesh (self-reliance); and proposed amendments to the Draft B of the World Charter on Education and Framework for Action.

World Conference on Education for All, Jomtien, Thailand, 5-9 March 1990 *National plan of action: Bangladesh*. Dhaka, Ministry of Education, 1990. 16 p

The Plan refers to the background of the country's economy and the people with the overview of education and the national movement for Education for All. The major objectives of the National Plan of Action are to secure Education for All by the year 2000 in Bangladesh. The Plan is based on a realistic realization of the limits of financial and human resources pitted against the need to achieve Basic Education for All for such year. The Plan aims at exploiting the largely untapped power of the enthusiastic people, motivating the masses, optimizing the use of external resources and blending all social forces to have a positive impact on the early achievement of Basic Education for All by the year 2000.

BHUTAN

Sinha, A C *Ethnic identity and national dilemma* New Delhi, Reliance Publishing House, 1991 258 p.

The book portrays the transition of the Bhutanese frontier community from a theocratic to a feudal one. It uncovers the Bhutanese national identity, national building efforts and national dilemma of the emergent nation State. The book is divided into three parts, providing an ecological, ethnic and historical analysis to the various social institutions as well as examining the contemporary political culture.

CAMBODIA

Cambodia. National Conference on Education for All, Phnom Penh, 2-6 September 1991. *Final report* Phnom Penh, 1991 210 p

The report analyses the role and the importance of education vis-a-vis the socio-economic and political system in Cambodia. It reviews the educational achievements in the past years. It states the government appeal for the technical and financial help of international organizations. The National

Committee for Education will mobilize all national resources, as well as international assistance, for the realization of Education for All.

UNESCO Principal Regional Office for Asia and the Pacific. *Inter-sectoral basic needs assessment mission for Cambodia: a report.* Bangkok, UNESCO, 1991. 133 p. annexes.

The report presents the Mission's objectives with emphasis on humanitarian assistance to Cambodia in anticipation of a comprehensive political settlement and in preparation for the speedy repatriation and rehabilitation of Cambodian displaced persons as well as the economic, social and cultural reconstruction of Cambodia. It examines socio-cultural setting: education systems and structures; international and UNESCO involvement in culture; environmental management and cultural preservation; communication and information; refugees and their reintegration. The report concludes with recommendations for UNESCO action in cooperation with the Cambodian authorities and other agencies.

CHINA

China (People's Republic of) State Education Commission. *The Development of education in China 1988-1990. presented at the International Conference on Education, 42nd session, Geneva, 1990.* Beijing, 1990. 58 p.

The first part of the report presents in detail the organization and administration of education in China with emphasis on its basic structure, legislation, inspection and financing. The second part explains the new progress made in the development and reform in education in various aspects such as basic education, special education, teacher education, vocational education, adult education and higher education. It ends with the listing of many comprehensive education reform projects.

INDIA

Bhushan, Satya, R Govinda and Anjana Mangalagiri. *Environmental education handbook for educational planners.* New Delhi, National Institute of Educational Planning and Administration, 1990. 119 p (UNESCO-UNEP International Environmental Education Programme)

The National Institute of Educational Planning and Administration and UNESCO-UNEP International Environmental Education Programme compiles this handbook to serve as a reference guide for planners in creating effective system of environmental education. The handbook addresses

concepts, approaches, methods and techniques required for the management of Environmental Education Programmes. The training of educational planners and administrators and management of information system for environmental education are also included.

India. National Institute of Educational Planning and Administration and Ministry of Resource Development. *Development of education: 1988-1990: national report of India*. New Delhi, 1990. 65 p.

The Report provides information on educational development in India; significant changes and innovations, measure undertaken or foreseen in the promotion of education for all. It states problems and difficulties in the development of education. It ends with the follow-up of International Conference on Education recommendations and documentary references.

Krisnaraj, Maithreyi, ed *Feminism: Indian debates 1990*. Bombay, Research Centre for Women's Studies. 1991. 163 p

The book contains a collection of articles on feminism compiled by the Research Centre for Women's Studies into one volume. The articles are taken from various sources giving ideas, critics and debates on Asian feminism, feminist fictions, feminists and women's movement, the left and feminism and contemporary Indian feminism.

Raza, Moonis , Aijazuddin Ahmad and Sheel C. Nuna. *School education in India: the regional dimension* New Delhi, National Institute of Educational Planning and Administration 1990. 585 p

This book is a response to fill up a serious research gap in the area of educational development in India. It analyses the entire spectrum of school education in India at a level where education is closer to grass-root level reality. The book is organized into seven sections in addition to introductory and concluding chapters. Each section includes (i) a text interpreting regional patterns; (ii) a set of maps depicting spatial patterns; and (iii) appendices containing frequency distribution of districts.

INDONESIA

Japan National Institute of Multimedia Education (NIME) *Research on the graduates of the Indonesian Open Learning University. a preliminary analysis. by Masaya Iwanaga and Kazuo Takahashi*. Chiba. 1991 (Research and Development Division Working Paper, 023-E-91)

This study report presents in data format research results about graduates of the Indonesian Open University conducted as part of the

"International Comparative Study on Distance Higher Education" study project in 1989. The major research items are: requirement for entrance, purposes of study, actual situation of use of educational system, evaluation of educational system, learning behaviour, study life and study effects and students involvement in the Indonesian Open Learning University after graduation, employment or the status of job change.

IRAN

Iran. Ministry of Education. *Education in the Islamic Republic of Iran: now and in the future.* Presented at the World Conference on Education for All: Meeting Basic Learning Needs. 5-9 March 1990 Teheran, 1990 97 p.

The Status Report in chapter one consists of nine parts which mainly attempt to draw a picture of the basic system of education in Iran while the formal education system is discussed in brief in part II. Training strategies are explained in part III. Part IV describes the on-going literacy programme in Iran, followed by part V which presents the status of non-formal technical/vocational education. Administration, finance and planning are dealt with in part VI. The last three parts, finally, attend to the issues of educational supplies (Part VII), problems affecting the education system (Part VIII), and measures for improvement (Part IX). Chapter two deals with education for all plan and Iran's participation and implementation.

JAPAN

Japan Ministry of Education, Science and Culture. *Development of education in Japan 1988-1990, report for submission to the 42nd session of the International Conference on Education. Tokyo*, 1990. 144 p.

The Report provides in Part I outline of education in Japan starting from fundamental principles of education: educational system organization; quantitative development; curriculum and textbook; teachers training; educational finance and administration and international educational exchange. Part III deals with the implementation of educational reform and its progress.

KOREA

Korea Korean Council for University Education (KCUE) *Korean higher education its development aspects and prospects* Seoul, 1990 119 p

Gives overview of Korean education with full information on the structure of higher education, provides historical analysis of development of higher education in different periods and examines the management aspects. It also presents issues and future prospects for Korean higher education.

LAOS

Bourdet, Yves. *Laos: Macroeconomic Studies*. Stockholm, The Planning Secretariat, Swedish International Development Authority (SIDA), 1989. 48 p.

The study aims to identify and analyze separate phases of policy and to compare their respective macroeconomic performance - in particular growth in different periods, given the constraints faced by the Lao economy. The study contains three parts. The first part deals with the macroeconomic performance of the Lao economy in a cross-country framework, with particular emphasis on growth performance over the past two decades. The second part examines the economic policy implemented in Laos prior to the policy shift of 1986. The third part analyzes the new policy and contrast it with the inward - oriented policy that was implemented before 1986. The final section offers some concluding remarks on the lessons which emerge from the policy making experience in Laos and on their relevance for the future in a rapid changing international trade environment. In the appendix, the study puts focus on the Swedish aid to Laos.

MALAYSIA

Malaysia. School of Economic Studies, Science University of Malaysia. *The Malaysian drop-out study revisted*, prepared by Zainal Ghani, Haris Md. Jadi and Ng Khar Thoe. Penang, Malaysia 1991. 136 p

This report is the result of a research project on children who have dropped out of the nine years of schooling in Malaysia. The research was funded by UNESCO, Bangkok. The research had implications for the children from disadvantaged groups who have made up the bulk of the drop-outs. There are seven parts of the report, namely background, the research design and sample of study, description of instruments used in study, home-related factors, cognitive and affective factors, the quality of education, conclusions and implications. The findings of this research form the basis for further research and development efforts in the area of education for the disadvantaged children.

NEPAL

Nepal *Education and human resources sector assessment*. Prepared by Ministry of Education and Culture, Nepal and the United States Agency for International Development (USAID).. Tallahassee, Fla., 1988. (various paging).

This document is prepared under the "Improving the Efficiency of Educational Systems" (IEES) Project of USAID to promote improved educational practice, planning and research within Nepal. The document contains nine chapters: executive summary; economic and financial analysis; education system management; primary education; secondary education; teacher education; vocational and technical training; non-formal education; and external assistance, with bibliography and tables.

PAKISTAN

Pakistan Ministry of Education Academy of Educational Planning and Management. *National Training Workshop on Project Planning, Monitoring and Evaluation, Islamabad, 16-24 September 1989: a report*, compiled by R.A Farooq and Hafeezullah. Islamabad, 1990 114 p

The report presents the results of the discussions by the resource persons on review of education policies/plans/programmes in Pakistan; Five Year Plan as instrument for implementation of education policies; alternative strategies for implementation of the Seventh Five Year Plan with emphasis on project planning, monitoring and evaluation in order to achieve definite targets within a given time. Education and manpower planning was stressed during the discussion giving guidelines for educational planners in setting their enrolment targets to ensure linkage of economic planning with manpower and educational planning. Identification and formulation of Education Projects are described.

Pakistan Planning Commission *Seventh Five-Year Plan 1988-93 and Perspective Plan 1988-2003*. Islamabad. 1988 463 p

The first chapter of Part I presents lessons from the Sixth Five-Year Plan of Pakistan on their success and failures, followed by Part II containing four chapters on long-term national objectives which guided the preparation of the Seventh Five-Year Plan; on long-term economic perspectives of 1988-2003 Plan; and on two primary goals of the Perspective Plan which are the achievement of greater self-reliance and the alleviation of poverty. Chapter 5 gives analysis on improving the distribution of economic benefits. Part III consists of Seventh Five-year Plan (1988-93) objectives and strategy; various

basic framework and key policy areas; statistics and implementation; production plan; physical infrastructure and social and intellectual infrastructure.

Qaisrani, Nasim and Sarfraz Khawaja *Planning of basic education in Pakistan.* Islamabad, Academy of Educational Planning and Management, Ministry of Education, 1989. 292 p. (AEPAM/UNICEF Training Courses/Workshop, no. 91)

The Report makes analysis of past policy approaches adopted to develop Basic Education Programmes in Pakistan. It discusses strategies to create awareness among the masses, planning personnel, NGOS, and private sector and their roles in the development of basic education in Pakistan. It ends with the recommendations for launching Basic Education Programmes in Pakistan.

PHILIPPINES

Philippines. National Committee on Education for All. *Education for All. A Philippine Plan of Action 1991-2000. Volume one: Plan Document.* Manila, Ministry of Education, 1991. 56 p

This Plan is divided into 3 parts. Part 1 presents an assessment of the social development problems and issues confronting the country at present, against which Education for All becomes not only timely and relevant but imperative as well. Part 2 discusses the four major development areas under Education for All, along with the national and region-based programmes and projects that were evolved in each. Part 3 discusses the specific details of giving life to the Education for All Action Plan such as who are involved, what are the mechanisms for managing and implementing the Plan. A policy agenda for immediate action and further research is also included.

Villanueva, Charles. *EMIS in the Philippines.* Bangkok, UNESCO, 1990 35 p.

The book introduces evaluation of microcomputer-based Educational Management Information System (EMIS) in the Philippines, the planning and implementation strategies and activities, the major problems, action taken, solutions and proposed measures and activities for future directions. It gives new insights and ideas to other countries embarking on milar development actions.

SRI LANKA

Malik, Said Rasul *System of education in Sri Lanka.* Islamabad, Academy of Educational Planning and Management Ministry of Education, 1986. 77 p. (AEPM-M/0 Education research study, no 56)

The study contains 11 sections beginning with a brief picture of the people, the economy and political set up of Sri Lanka. It refers to the development trend of the education system, present position of the system, structure of school system and examination system. It gives history and development of teacher education and the education programmes, students facilities, technical education condition, higher education development and planning, financing and budgeting process.

Sri Lanka National Institute of Education *Environmental education: a manual for primary teacher education, prepared in collaboration with UNESCO. Bangkok* Colombo. 1991 155 p mimeo

The Piagetian model has been adapted in preparing this manual. Teachers should bear in mind the Piagetian stages of child development while introducing the concepts in environmental education. The manual contains seven chapters on history; objectives of environmental education; teacher training and methodology of teaching; psychological basis; teaching learning aids; and evaluation of student achievement in environmental education.

Sri Lanka. University Grants Commission Division of Planning and Research *Increasing efficiency of management of higher education resources: proceedings of a National Workshop, organized by UGC in collaboration with UNESCO, Bangkok and SLFT Ed. by Prof A D V. de S Indraratna.* Colombo. 1991. 166 p.

This workshop was a follow-up on the Regional Symposium on Long-Term Planning of Higher Education for Development held in Dhaka, 21-30 September 1986, under the Regional Co-operative Programme in Higher Education for Development in Asia and the Pacific. The workshop arose out of the need to increase efficiency in the management of resources in higher education institutions in Sri Lanka. The workshop discussions focussed on four themes papers, namely, socio-economic needs and higher education planning; status and trends in higher education resources and resource mobilization; higher education resources and cost effectiveness; resource management for efficiency and excellence in higher education.

THAILAND

World Bank. *Decision and change in Thailand: three studies in support of the Seventh Plan*. Washington, D.C., 1991 218 p.

The three papers in this compendium are special studies prepared by the World Bank as background documents and inputs to Thailand's Seventh National Economic and Social Development Plan. The first study reviews the experiences of government policies in Korea and Taiwan to promote industrialization in an attempt to draw some lessons for Thailand in formulating its own industria' policy. The second study contains a general overview of the level of technological capability of Thai industry and the final study provides a detailed examination of the overall development of the Thai education sector, highlighting the contrasts with other countries in Asia.

World Bank. Operations Evaluation Department *Educational development in Thailand· the role of World Bank lending* Washington, D.C., 1989. 48 p (A World Bank operations evaluation study)

This is a report by the World Bank's Operations Evaluation Department. It evaluates the experience with educational development in Thailand and assesses the cumulative compact of Bank projects on development in the sector. Over the period 1966 to date, the Bank has supported educational development in Thailand through six education projects which are the subject of appraisal in this report.

VIETNAM

Vietnam Ministry of Education and Training *Education in Vietnam 1945-1991*, Compiled by S. Iizawa and Pham Minh Hac Hanoi. 1991. 180 p

The booklet gives some of the great landmarks in the development of education in Vietnam during the period 1945-1991. It first describes the country's history, geography, nationality and population and highlights the educational reforms movement and the major results. It also explains the development of pre-school education, the eradication of illiteracy (EOI) and universalization of primary education (UPE) as well as the general education. Information on higher education in Vietnam· complementary education; in service training and continuing education; educational research; international co-operation and training and statistical charts and diagrammes are also covered in the description.

RECENT PUBLICATIONS
(SUPPLEMENT TO LIST OF PUBLICATIONS 1992)

BIBLIOGRAPHICAL DOCUMENTS

Accessions List and Periodical Index
No 79 January-June 1992
No 80 July-December 1992

HIGHER EDUCATION

Management Education and Training for Administrators of Higher Education Institutions. *Report of a Regional Workshop.* 21-26 October 1991 1992 53 p

ASIA-PACIFIC PROGRAMME OF EDUCATION FOR ALL (APPEAL)

UNESCO Second Regional Workshop for the Conduct of a Skills-based Literacy Programme for Women, Hua Hin, Thailand, 11-30 November 1991. Booklets developed at the Workshop. *A series of 18 booklets: Bhutan. China. India. Laos. Myanmar. Pakistan, Papua New Guinea. Thailand. Viet Nam.* UNESCO, Bangkok. 1993 18 vols

UNESCO PROAP *Writing for Women: China:* analysis of reading materials to promote civic awareness among women with limited reading skills. Bangkok. 1993 32 p

_____ *Writing for Women: India*, analysis of reading materials to promote civic awareness among women with limited reading skills. Bangkok. 1993. 35 p

_____ *Writing for Women Sri Lanka*, analysis of reading materials to promote civic awareness among women with limited reading skills. Bangkok, 1993 24 p

_____ *Writing for Women Viet Nam*, analysis of reading materials to promote civic awareness among women with limited reading skills Bangkok 1993 30 p

UNESCO PROAP *Educate to Empower:* a manu . for trainers. Bangkok 1993. 220 p.

UNESCO Third Regional Workshop for the Conduct of a Skills-based Literacy Programme for Women, Hua Hin, Thailand, 1-23 November 1992. Booklets developed at the Workshop. *A series of 18 booklets: Bangladesh, Bhutan, China, Laos, Myanmar, Papua New Guinea, Philippines, Viet Nam.* UNESCO, Bangkok, 1993 18 vols.

ASIA AND THE PACIFIC PROGRAMME OF EDUCATIONAL INNOVATION FOR DEVELOPMENT (APEID)

APEID Regional Seminar on Educational Research, Quezon City, Philippines, 22-29 July 1991 *Research in basic education and literacy: report of a Regional Seminar* co-organized by UNESCO PROAP/ACEID and Department of Education, Culture and Sports of the Philippines Bangkok, 1992. 141 p (US$ 4 00)

APEID Regional Consultation Meeting on the Asia and Pacific Programme of Educational Innovation for Development (APEID) Thirteenth Meeting, Jomtien, Thailand, 22-26 June 1992 *Final report* 1992. 86 p (US$ 3 00)

APEID *Education for affective development: a guidebook on programmes and practices* Bangkok, 1992 136 p

_____ *New directions in technical and vocational education* Bangkok, 1992 51 p (US$ 3.00)

APEID Roundtable on Environmental Education, 2-6 August 1992, Colombo, Sri Lanka *New frontiers for designing and implementing environmental education programmes: report of a roundtable* Bangkok, 1992 48 p

APEID. Finalization Meeting on the APEID Joint Innovative Project on Education for Promoting the Enterprise Competencies of Children and Youth, Bangkok, 18-26 November 1991 *Education for nurturing enterprising abilities: report*. 1992 76 p

_____ Regional Meeting on the State-of-the-Art of Secondary Education, Surat Thani, Thailand, 19-26 August 1991 *Towards new schemes of secondary education, report* 1992 97 p

APEID Regional Meeting on the Promotion of Humanistic, Ethical and Cultural Values in Education, NIER, Tokyo, Japan, 12-27 June 1991. *Education for humanistic, ethical/moral and cultural values, report.* 1991 116 p

_____. Regional Experts Workshop on Development of Strategies and Methods for Teaching Values in the Context of Science and Technology, RECSAM, Malaysia, 18-29 November 1991. *Strategies and methods for teaching values in the context of science and technology, report.* 1993. 52 p (US$ 3 00)

_____ Regional Seminar on Innovative Measures to Overcome Socio-Economic Obstacles to Primary School Attendance. Pune, India,
5-13 December 1990 *Innovative measures to overcome socio-economic obstacles to primary school attendance, report* 1992 83 p

_____ Planning Meeting on the Promotion of Primary Education for Girls and disadvantaged Groups, Chiang Mai, Thailand. 30 July-8 August 1991 *Promotion of primary education for girls and disadvantaged groups, report* 1992. 62 p

_____ Regional Workshop on the Development of Exemplar Identification Instruments for a Science and Technology Education Talent Programme. Chongju, Republic of Korea, 14-25 November 1988 *The development of exemplar identification instruments for a science and technology education talents programme: report* 1993 48 p

_____ Regional Workshop for the Development of Science Education at the Secondary Level with Special Reference to Future Content, Beijing, China, 29 November-5 December 1989. *Future content in science and technology education at secondary level, report.* 1993 81 p

POPULATION EDUCATION PROGRAMME SERVICE

Population Education in Asia and the Pacific Newsletter and Forum

No 37 1992 (US$ 5 00)
No 38 1993 (US$ 5 00)

Recent publications

Population communication strategies for the 1990s, Report of Regional IEC Experts Group Meeting on Population Communication, Chiangmai, Thailand, 13-19 April 1992. 78 p. (US$ 5.00)

Population communication: communication theories, development and strategies. Volume One (Abstract-bibliography series 12). 1992 116 p. (US$ 5.00)

Population communication: research, mass media and instructional materials. Volume Two (Abstract-bibliography series 12). 1993. 119 p (US$ 5.00)

Population education translation series No 2 1993

India

Instructor's guidebook population education, health education and value education 90 p

Population education and evolution of human society 49 p

Ramadhan's daughter (cartoon booklet). 20 p US $10.00 (per set)

Inquiry approach teaching methodology for population education (video cassette, teacher's guide, exercise book) 1989 English. (Available in VHS/PAL, VHS/NTSC Beta/NTSC Beta/PAL, Beta/SECAM systems) (US$ 20 00)

SOCIAL AND HUMAN SCIENCES IN ASIA AND THE PACIFIC

International Law News and Information from Asia and the Pacific, Vol 5, December 1991-June 1992

UNESCO Programme in Social and Human Sciences in Asia and the Pacific *Report for 1990-1991* Bangkok, 1992 40 p

The Changing family in Asia Bangladesh, India, Japan, Philippines and Thailand RUSHSAP Series on Monographs and Occasional Papers, No 35 Bangkok, 1992 394 p (US$ 15 00)

Women in Asia. Beyond the domestic domain, survey of women's outside roles in India - Indonesia - Thailand RUSHSAP Series on Monographs and Occasional Papers, No 24 Bangkok, 1989. 393 p Reprint (US$ 10 00)

Women in politics: Australia, India, Malaysia, Philippines, Thailand. RUSHSAP Series on Monographs and Occasional Papers, No. 36. Bangkok, 1993. 213 p (US$ 5.00)

Violence against women RUSHSAP Series on Monographs and Occasional Papers, No 37 Bangkok, 1993 100 p.

The futures of Asian cultures RUSHSAP Series on Monographs and Occasional Papers, No 38 Bangkok, 1993. 159 p (US$ 6.00)

NEW FROM UNESCO PUBLISHING

World Science Report 1993
Paris, UNESCO, 1994
278 pp., 210 x 297 mm, full-colour illustrations, tables and charts
Price: 220 French francs

This is an authoritative and readable report, written by authors recognized in their respective fields. It provides many facts and figures on present-day science. As a source of information, it is a guide for all those with an interest in the shape of science and technology around the world, such as decision makers, scientists in every field, active participants or observers.

Contents:

Part 1 : A collection of essays which provide an informative and thought-provoking review of science and technology in the various regions of the world.

Part 2 : International partnership and co-operation, organization of research, its financing and how indicators of science and technology can be used.

Part 3 : Overviews of recent development in the basic sciences.

Part 4 : Appendix of statistical tables on national and regional scientific activity and manpower.

World Education Report 1993
Biennial publication
1993, 172 pp., tables in full-colour, charts
Price : 150 French francs

The basic theme for this 1993 edition is `education in a world of adjustment and change', focusing on three key aspects:

- The changing global pattern of disparities in access to education, especially in light of what has come to be known since the *South Commission's* report as the `knowledge gap' between the wealthy industrial countries in the North and the poorer developing countries in the South.
- The continuing relevance of existing international legal conventions relating to education, in light of the increasing scope for the exercise of choice in education and new challenges for equality of opportunity.
- The quest for new and better informed education standards, and the increasing interest in international co-operation in educational research.

A BEST-SELLER FROM UNESCO PUBLISHING

Study abroad
Etudes a l'etranger
Estudios en el extranjero
28th edition
1993, 1,300 pp.
Trilingual: English/French/Spanish
Price: 100 French francs

- An exceptional source of information on university-level courses and studies in 128 countries
- Valid for two academic year: 1994 and 1995
- More than 2,500 courses in every field
- Scholarships and financial aid by both public and private institutions
- Professional training in the United Nations system and other intergovernmental organizations
- Information on study opportunities for the handicapped
- Useful addresses and bibliography