

PN-ABT-389

Education for All: Purpose and Context



Roundtable Themes I
World Conference on Education for All
Jomtien, Thailand



PN-ABT-389

World Conference on Education for All

Monograph I

Education for All: Purpose and Context

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U N E S C O

A

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Preface

The three monographs in this set are based on materials available from the roundtables organized during the World Conference on Education for All - Meeting Basic Learning Needs, held at Jomtien, Thailand, 5-9 March 1990. It was convened and sponsored by the executive heads of UNESCO, UNICEF, the United Nations Development Programme, and the World Bank, and was organized by an Inter-Agency Commission established by them. The Royal Government of Thailand hosted the Conference, and eighteen other governments and organizations co-sponsored it. The Conference brought together some 1500 participants from 155 countries, 160 intergovernmental and non-governmental organizations, as well as the media.

Unlike the proceedings of an academic conference, the monographs provide syntheses of the papers, oral presentations, videotapes, films and publications presented during the roundtables. To the extent possible, account has also been taken of the written summary records and audiotapes of the roundtable discussions.

Under the supervision of an editorial board composed of one member from each of the four agencies (UNESCO, UNICEF, UNDP and the World Bank) that sponsored the World Conference, a three-member editorial team was commissioned to prepare syntheses of selected topics relating to the three sections of the *World Declaration on Education for All*, adopted by the Conference. The team drew mainly on material from the twenty-four "thematic" roundtables, with occasional use made also of material from some of the twenty-four "illustrative" roundtables.

Individual chapters do not always correspond to particular roundtables. Many chapters draw on material from more than one roundtable, and conversely, material from some roundtables was used in two or more chapters, even in different monographs. Specific contributions used by the editorial team are acknowledged in each chapter. Because of unfortunate omissions or biases in the basic material available for these syntheses, the monographs cannot pretend to develop every topic in a comprehensive or balanced manner. The editors have attempted to point out the more serious imbalances.

In preparing the syntheses, the editors sought first of all to present the main issues, ideas and experiences that informed the World Conference initiative, in keeping with the content and spirit of the *World Declaration* and its companion text, the *Framework for Action to Meet Basic Learning Needs*. Second, they sought to reflect the substance and tone of the roundtables, and third, the views of individual authors, presenters and discussants. Thus, the monographs do not necessarily represent the opinions of the editorial team or the editorial board.

The monographs are published by UNESCO on behalf of the four agencies that sponsored the World Conference on Education for All. The contents of the monographs were neither endorsed by the World Conference nor cleared by the sponsoring agencies. Therefore, they do not necessarily reflect the opinions of the Conference delegations nor represent the policies of the sponsoring agencies.

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Basic education should be pursued not merely as a sectoral target, but as an integral part of a human development plan.

William H. Draper III, Administrator, UNDP

Our common objective is to mobilize societies as a whole for the cause of education, to re-affirm flagging commitments... to co-operate and learn from each other, and before this century ends, to make the right to education a daily reality for all.

Federico Mayor, Director-General, UNESCO

If empowerment of people through knowledge is an important goal of basic education, then there is a strong case for "affirmative action" in support of expanding basic education for girls and women, the victims of age-old discrimination in most societies. This is an article of faith for UNICEF, because we know from our own experience that all the gains that have been made in the past decade in saving the lives of millions of children and improving the health and well-being of children and mothers cannot be sustained and cannot be advanced further without primary education, literacy and basic knowledge for better living for girls and women.

James P. Grant, Executive Director, UNICEF

Education produces substantial value for money. This is reflected both in national accounts and in individual earnings. As people are educated, earnings grow, so do savings, so does investment, and, in turn, so does the well-being of society overall... Our goal will be to help countries put in place the educational policy framework and investment programmes necessary to move towards education for all.

Barber Conable, President, World Bank

Statements at Jomtien, Thailand, March 1990

Foreword

"Everyone has the right to education" states the Universal Declaration of Human Rights (1948), but today, over four decades after this historic text was adopted, the right to education remains an empty promise for millions of children, women and men. According to UNESCO, nearly one thousand million adults, two-thirds of them women, are unable to read or write. Some 130 million school-age children have no access to primary schooling. Each year several million more children drop out of school without the knowledge and skills they need for a healthy and productive life.

Ironically, at the same time, the economic and social development of countries around the world is hampered by shortages of skilled men and women and is confounded by widespread ignorance and indifference. Consequently, the long underestimated human dimension is finally being recognized as the end and means of true development. If the capacity of people to shape and improve their own lives is the measure of development, then basic education for all is surely a necessary condition – as well as a human right.

During the 1980s, education in virtually all countries stagnated or deteriorated. Industrialized countries became alarmed at the perceived decline in quality and relevance. The developing countries, deeply affected by economic recession and growing debt burdens, were generally unable to maintain the pace of educational expansion achieved during the 1960s and early 1970s. In the face of rapid population growth, school enrolments actually declined in some countries. Teachers' salaries were often paid months late, and thousands

of schools around the world lacked text books and other bare essentials.

In response to this sorry state of affairs, the executive heads of UNESCO, UNICEF, UNDP and the World Bank convened the World Conference on Education for All – Meeting Basic Learning Needs (Jomtien, Thailand, 5-9 March 1990) to draw attention to the importance and impact of basic education, and to forge a global consensus and commitment to provide basic education for all.

After five days of intense discussion, the 1500 participants adopted two texts by acclamation: the *World Declaration on Education for All* and the *Framework for Action to Meet Basic Learning Needs*.⁽¹⁾ These texts confirm a renewed commitment by the international community, evident in these words of the Declaration:

There has never been a more propitious time to commit ourselves to providing basic learning opportunities for all the people of the world. [...] We commit ourselves to act cooperatively through our own spheres of responsibility, taking all necessary steps to achieve the goals of education for all.

The Conference also served as a forum for sharing experiences and research findings. Forty-eight

1. The *Declaration* and the *Framework for Action* are reproduced in the Appendices (the *Framework* in Monograph II). A booklet containing both texts was published by the WCEFA Inter-Agency Commission (New York, 1990) in Arabic, English, French and Spanish. See also footnote 2.

roundtables provided opportunities to discuss specific aspects and issues of basic education. Half of these roundtables were "thematic" while the other half were "illustrative", based on the particular experiences of countries or organizations.

These three monographs are based on the papers, statements and audio-visual materials presented during the thematic roundtables, as well as on the ensuing discussions. (See the Preface.) They are intended to complement the *Final Report* of the conference and the background document, *Meeting Basic Learning Needs: a Vision for the 1990s*⁽²⁾. The central theme of each monograph corresponds to the three sections of the *World Declaration: Education for All: the Purpose; Education for All: the Expanded Vision; and Education for All: the Requirements*.

Thus, the first monograph deals with the *purpose and context* of basic education, starting with the basic learning needs which education must meet. These include the essential learning tools, such as literacy, numeracy and problem solving skills, as well as the knowledge, attitudes and values needed by human beings to survive and to function effectively in their societies. As individuals grow older and as societies evolve, these learning needs change, so Education for All must be viewed in the context of lifelong learning and human development.

The first monograph also explores the interplay between the education process and culture, including the complex issues associated with language. It considers the implications of new and broader concepts of literacy in designing strategies to reach adult learners. The impact of scientific discovery and technological change on learning needs and on the content and processes of basic education to meet those needs are examined, fol-

2. Both documents were published by the WCEFA Inter-Agency Commission (New York, 1990). The Final Report was published in English and French; the background document was published in Arabic, English, French and Spanish. Limited supplies of these documents, as well as the booklet containing the World Declaration and the Framework for Action (see footnote 1), can be ordered from WCEFA Liaison, UNESCO, 7 place de Fontenoy, 75700 Paris, France.

WCEFA ROUNDTABLES			
Thematic Roundtables		Illustrative Roundtables	
<i>The purpose</i>			
T1 Technology & Education	T2 Education & Development	I1 North America	I2 Thailand
T3 Environmental Education	T4 Population Education	I3 South Asia	I4 Iraq
<i>Expanded Vision</i>		I5 Europe	I6 Korea
T5 Health Education	T6 Culture		
T7 Early Childhood	T8 Language Policy	I7 Mali	I8 Sahel
T9 Nutrition & Health	T10 Girls' Education	I9 Latin America	I10 Ecuador
T11 Primary Education	T12 Distance Education	I11 USSR	I12 Caribbean
<i>The Requirements</i>		I13 Nepal/ Afghanistan	I14 Kenya
T13 Participation	T14 Research Networks		
T15 Educational Materials	T16 Community-Based	I15 Caribbean	I16 China
T17 The Teacher	T18 Assessment	I17 Colombia	I18 Zimbabwe
T19 Mobilization	T20 NGOs & Literacy	I19 USA	I20 Japan
T21 Capacity Building	T22/T24 Finance	I21 Morocco	I22 Philippines
T23 Adult Literacy	Finance (cont.)	I23 Nigeria	I24 Jordan

lowed by a closer look at the relationship between education and the "world of work". Finally, the monograph focusses on three major educational components that can affect the quality of life and that deserve space in basic education programmes: environmental education, population education, and health education.

The second monograph elaborates the five components of the expanded vision of basic education by discussing the key problems that need to be addressed and providing selected examples of possible solutions and approaches. It begins by examining the equity issues relating to the education of girls and women, the most urgent priority expressed in the *World Declaration*. It then deals with two interrelated aspects of enhancing the environment for learning: early childhood care and education, and health and nutrition. The focus on learning, a key component of the expanded vision, is dealt with specifically in relation to improving the quality of primary education; relevant research findings and good practice are reviewed. Distance education and nonformal programmes for youth and adults are discussed in connection with broadening the means and scope of basic education. Strengthening partnerships, the fifth component of the expanded vision, is examined from several angles, with an emphasis on the need to encourage and facilitate the participation of families, communities and other actors in the provision of basic education.

The third monograph deals with *the requirements* to provide Education for All – how to turn the expanded vision and the renewed commitment at Jomtien into an effective reality. Four interrelated themes are examined: developing a supporting policy context; mobilizing resources; building national technical capacity; and strengthening international solidarity. The monograph considers how a broad range of personnel, especially those at grassroots level, can be empowered to provide basic education. Particular attention is given to the role and responsibilities of the teacher, together with the conditions of service and work that can enhance the teacher's effectiveness. The involvement of parents, communities and non-governmental organizations in designing, providing and

supporting basic education is discussed. It stresses the importance of instructional materials, and reviews various issues relating to their availability, cost and relevance. It also looks at ways to use technology and assessment capacities to make learning opportunities more available and effective. Finally, it reviews the implications of these several requirements on the more global issue of financing, including opportunities for reducing costs and finding alternative sources of funding.

We sincerely hope that these monographs will provide useful insights and ideas to the reader, will stimulate discussion and reflection, and, above all, will encourage *action* to make basic education more effective and more available to more people.

We wish to thank the roundtable organizers, presenters, and authors who so willingly cooperated in providing the materials needed for the syntheses contained in these monographs. Specific contributions drawn on by the editorial team are acknowledged at the head of each chapter, although the editors are responsible for the syntheses.

We also wish to express our deep appreciation to the three editors who prepared the syntheses: Paul Fordham, director of the International Centre for Education in Development, and honorary professor, University of Warwick, United Kingdom

Sheila Haggis, former senior staff member of the Education Sector, UNESCO, Paris, France

Douglas Windham, distinguished service professor, University at Albany, State University of New York, USA.

We also wish to record our gratitude to the technical services at UNESCO that supported this project, coordinated by Michael Lakin, Division of Basic Education.

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1. Why Education for All?

1. Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical education and professional education shall be made generally available...

2. Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace.

Article 26 of the Universal Declaration
of Human Rights, 1948.

In the world today, more than four decades after the Universal Declaration was adopted, no one would dare to deny that all children and young people have the right to a basic education. First and foremost, it is in the interests of individuals and societies to expand and improve the education of children and youth in order better to meet their basic learning needs. Education leads to individual creativity, improved participation in the social, economic, cultural and political life of society, and hence to a more effective contribution to human development. In fact, education is a prerequisite not only for the full exercise of the individual's rights, but also for understanding and respecting the rights of others. The significance of education in the exercise of democratic rights was eloquently emphasized at Jomtien by President Borja of Ecuador when he stated that 'the vote is an

expression of opinion, and wise decisions in choosing governments depend on a well-educated public'.

At the Fourth International Conference on Adult Education (Paris, 1985), the right to learn was defined as the right: to read and write; to question and analyse; to imagine and create; to learn about the world as it is and as it was; to have access to educational resources; and to develop individual and collective skills.

In a global sense, the right to education and the right to learn unfortunately still constitute a vision rather than a reality, although the demands on and for 'educated people' continue to grow. Today, some 1,000 million adults, with women as the silent majority, are labelled illiterate. Over 130 million children, almost two-thirds of them girls in the developing countries, have no access to primary education. Against this alarming background, the 1989 United Nations Convention on the Rights of the Child reaffirmed the right of every child to education.

Of course education costs money, and the world economic crisis, which imposes dramatic reductions in investment and expenditure, has led to demands for heightened accountability and financial stringency. As each sector of public and private life competes for what it regards as its fair share of available resources, education must justify itself in the face of other pressing claims. This can be done, but it is no matter of simple cost effectiveness or returns on investment. There is now strong evidence of ways in which education, through its influence on attitudes and behaviour and its

positive impact on health, productivity, protection of the environment, family planning and child care can transform the cultural, social and economic life of people and communities. The *World Declaration* calls for an 'expanded vision' of basic education:

...that surpasses present resource levels, institutional structures, curricula, and conventional delivery systems while building on the best in current practices. New possibilities exist today which result from the convergence of the increase in information and the unprecedented capacity to communicate. We must seize them with creativity and a determination for increased effectiveness.

For this, educators must do more to convince decision makers and the public at large that the positive impact of education, both actual and potential, goes far beyond the readily obvious increased economic rewards to school leavers and graduates who find employment. More use could be made of evidence of the many different ways in which education can transform and enrich the life of individuals and communities. This is one of the major tasks in moving towards Education for All.

The World Conference on Education for All was a summons for action at a time of optimism, at a time of a more committed international climate in support of human development.

There is a growing consensus that human development must be at the core of any development process; that in times of economic adjustment and austerity, services for the poor have to be protected; that education – the empowerment of individuals through the provision of learning – is truly a human right and a social responsibility. Never before has the nature of learning and basic education been so well diagnosed and understood in its psychological, cultural, social and economic dimensions. Today, the sheer quantity of information available in the world – much of it relevant to survival and basic well-being – is exponentially greater than that available only a few years ago, and the rate of its growth is accelerating. This includes information about obtaining more life-enhancing knowledge – or learning how to learn [...]

The current optimism about basic education is not founded on naive assumptions that education is the sole determinant of individual or societal change: various prerequisite and concomitant changes are required in

general political, social and economic structures and processes. Neither does the optimism ignore the seriousness and significance of the challenges that remain. However, the very challenges that constrain new basic education efforts reinforce the importance of these efforts. While not sufficient by itself to resolve the larger social and economic challenges faced by the world's nations, more and better basic education is a necessary part of any resolution of these challenges. (*WCEFA background document, pp. 1 and 2*)

For basic education to be viable in practice, it must effectively address three major facets or dimensions of the economic, social and cultural lives of all people and of all societies. First, it must not only be a key instrument for safeguarding the cultural heritage of peoples and societies, it must engender a vital sense of the importance of culture and of cultural identity and values for the development and wellbeing of human society as a whole. Next, it must respond to the impact of scientific discoveries and technological change on the content and processes of education itself, and it must actively explore and re-explore the inter-relationships between education and the world of work. Finally, it must seek to develop conscious concern for the quality of life and contribute to an understanding of the vital importance of sustainable development.

The first dimension is *the interplay between 'culture', broadly defined, and the educational process*. Article 1.3 of the *World Declaration on Education for All* states:

Another and no less fundamental aim of educational development is the transmission and enrichment of common cultural and moral values. It is in these values that the individual and society find their identity and worth.

Through education, a culture is transmitted and transformed, and social functions and status are reproduced and created. The interface between education and culture is vitally important, yet too often ill-understood. Culture conditions learning in negative and positive ways. Cultural development is a key educational goal, as is the safeguarding of cultural identity and tradition. The United Nations' World Decade for Cultural Development (1988-1997) has as one of its prime objectives the

affirmation of cultural identity by 'finding ways to keep alive what is unique in each society without sealing it off from outside influences'. This poses a profound challenge to educators: how are they to provide education for culture maintenance while at the same time promoting effective learning of modern knowledge? The task is made doubly difficult, for cultural maintenance must be understood in the context of its particular local setting. Moreover, not all modern knowledge is significant; indeed it may be superficial and of little real value.

Despite its important relationship to the economy, education cannot be reduced to a vehicle geared solely to employment, growth and efficiency. Culture, including language, is an essential ingredient of any learning process. A child's respect for his or her own culture and language is the foundation for self-respect and tolerance of others.

If attitudes such as trust, hope, respect and optimism are nurtured during infancy and the early years of schooling, they will lay the foundations of personal development crucial for later life and for establishing positive attitudes to others. In a world in which mutual respect and co-operation are essential, it is important to develop approaches likely to enhance people's self-esteem through mutual support and co-operation rather than through competition. At the same time, it is no less important to develop in the individual a critical approach which will help to identify who and what is truly worthy of respect.

Second, there is the dimension represented by *the impact of unprecedented scientific and technological development*. To be truly independent, a country should be able to ensure that all its citizens are given the opportunity, starting from the earliest stages of education, to gain an understanding of science and technology and the capacity to put them to appropriate use and to develop them to meet collective needs. Although the large majority of people do not necessarily work directly with new technology, they live in societies where technological innovation increasingly permeates almost every aspect of daily life. The need for basic scientific and technological knowledge and skills therefore becomes pervasive. This applies to rural no less than to urban societies. Workers in the agricultural

sector, for example, need modern approaches in matters such as food production and marketing, irrigation and fertilizers, and they, too, need to understand how protecting the environment sustains livelihood.

A country's engagement in the development and use of new technologies has profound implications for employment and skill requirements. With the introduction of new technologies, especially the applications of informatics, areas of employment in which repetitive jobs—both skilled and unskilled—have so far predominated are diminishing. In contrast, there is an expansion of job opportunities for high—and middle-level professional personnel with creative skills, able to improve the quality and management of their work. Sound basic literacy and numeracy skills, middle-level technical and organizational skills and, to an increasing degree, problem solving and abstract reasoning abilities will be the cornerstones of scientific and technological advance.

There is a persuasive body of theoretical and empirical evidence showing that investment in the education and training of the labour force plays a crucial role in economic development. Studies undertaken by the World Bank and other agencies indicate that in developed and developing countries, educational investment has been an important factor contributing to increased productivity and hence to economic growth both in the modern, industrial sector and in agriculture.

The third facet or dimension concerns issues affecting the *quality of life and education for sustainable development*. There is now a heightened awareness of the environmental crisis through which the world is passing. Education has a vital role to play in helping human beings to improve their relationships with their environment and, indeed, in contributing to the ultimate sustainability of the planet. Since the early 1970s there has been a growing concern that development aimed at improving the quality of life is seriously handicapped by imbalances in the human environment which are often caused or reinforced by human behaviour. In industrialized areas, pollution and its physical and biological effects are often the consequences of uncontrolled industrialization and striving for

growth. Inadequate water supplies, floods and famines caused by over-exploitation of land and soil, and rapid urbanization are all prominent environmental problems symptomatic of under-development. In all regions, the potential threat of environmental devastation by armed conflict remains ever present. Education, in a broad sense, can make major contributions to a better understanding of these problems and to ways of addressing them appropriately and effectively.

For optimum effect environmental education should be closely linked with population education. In many countries, rapid population growth has seriously inhibited efforts to raise the standard of living. High birth rates themselves have an adverse effect on maternal health and early childhood survival. Education of women is the key to population control, while population education for both men and women can develop the ability to analyse population issues and help all people, young and old, to see how important these are for their own daily lives and for the well-being of the society of which they form a part.

It is difficult to over-emphasize the value of the impact that education can have on health and nutrition. Malnutrition has particularly devastating effects on children, lowering their resistance to disease and, as is now increasingly recognized, impairing their mental as well as their physical development (see also Monograph II, chapter 3). Inadequate distribution systems of food and discrimination in sharing, even within the family, can contribute to the painful injustice of hunger. Education helps remedy these serious problems in a number of ways. To start with, more education can mean increased family income. In a direct way, it can help parents to understand and act appropriately in relation to health issues. The more educated the parents, the better are likely to be the nutritional conditions of the children. Moreover, there is evidence to show that it is especially the education of the mother that favourably influences the nutrition and health of the children. World Bank studies in twenty-nine developing countries have shown an inverse correlation between infant and child mortality and the education of mothers. Furthermore, there is evidence that education in

health and nutrition can be more effective and less costly if it is simultaneously part of general education and tied to community organizations and to other influential channels of communication.

In all these areas there are recurring threads. One is the need to establish a bridge between what is learnt at school and the challenges of real life. Education for all requires systematic analyses of learning needs – what bridges are needed and by whom and at what point in their lives. Communication skills must be put into practice – for example, using a map or instructions to operate a particular machine. Numeracy must come into play in real life situations – measuring a room, calculating the real value of crops produced or deciding what equipment to purchase for a small business. Basic literacy skills must be accompanied and supported by educational content and activities that make reading and writing really useful skills for achieving personal as well as collective benefits and goals. There are few aspects of life of such vital concern to people as their health and that of their families, or the protection and enhancement of their environment. Science and technology, rather than being taught as separate subjects, should be integrated into the teaching of basic communication and numeracy skills, and linked to health and environment themes.

The scope of 'basic learning needs' is set out clearly in Article I.1 of the *World Declaration on Education for All*:

Every person – child, youth and adult – shall be able to benefit from educational opportunities designed to meet their basic learning needs. These needs comprise both essential tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as knowledge, skills, values and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning.

The detailed nature of basic learning needs and how best to meet them will vary over time from country to country and from culture to culture. In all cases basic learning needs cannot be separated

from other basic human needs, the definition of which must include elements that are both personal and social. Which learning tools and skills, and what knowledge do human beings need for survival, for work, for full personal development, for participation in decision-making and for continued learning?

With the rapidity of technological and social change, worldwide, previously accepted notions of a relatively fixed body of basic knowledge and skills that could be learned during a predetermined duration of schooling are giving way to a concept of education centred on the need to 'learn how to learn', it being understood that learning continues throughout life. To quote Article I.4 of the *Declaration*,

Basic education is more than an end in itself. It is the foundation for lifelong learning and human development on which countries may build, systematically, further levels and types of education and training.

Consequently there is need for augmented concepts of 'literacy' and 'numeracy' which must be sensitive to each national and cultural setting and go beyond mere reading, writing and counting. Just as the first printing press transformed the process of transmitting knowledge, so the computer is today altering the nature of cognition. Literacy and numeracy in the 'information age' will be less rigidly structured, more open to change, less concerned with content and more with process. Such concepts of literacy and numeracy will place greater emphasis on the distinction between personal knowledge derived from direct experience and processed knowledge such as data and other information drawn from external sources. There will also be more emphasis on the processes of problem-solving and on the appropriateness of solutions in practical, ethical and social terms.

Another recurrent thread is the general idea of shifting the centre of gravity of the education system to place it in close juxtaposition with the broader community and the world of work. This means linking learning in the classroom with learning in the school community and in the family, as well as in the wider community and its environment. As 'Education for All' is increasingly seen as a lifelong

experience, more attention will need to be given to non-formal education for youth and adults, especially through the media, with better links between the formal education system and non-formal programmes. The 'quality' of basic education is now seen more clearly to reside in achievement-oriented education for each child and adult learner. Achievement needs to be measured not only against standards set within the educational process but also against performance in later life. Understanding of children's intellectual development and its pedagogical implications is advancing and should be incorporated into teacher-education programmes, curricula and assessment measures.

Such major changes, involving emphasis on 'process skills' and 'learning to learn', as well as more integrated approaches to subject matter and the use of educational technology in appropriate ways, inevitably place a greater load on the teacher. This in turn calls for improvements in the quality and content of the training and re-training of teachers and for the provision of adequate facilities and support services. The key to success will lie in the quality and training of the teacher educators who will themselves be responsible for the training and retraining of the millions of teachers throughout the world.

The education of women and girls, which was given the most urgent priority in the World Declaration on Education for All, is a recurrent theme throughout this monograph. Whether it be in relation to access to education in science and technology, including 'appropriate technology' to improve living conditions in rural areas, to women's contribution to economic and social development, to issues related to quality of life such as health, population and the environment, or to cultural heritage, action must be taken to ensure that girls and women share equally in education and its benefits.

The following chapters attempt to examine these areas of concern in the light of the discussions which took place at the Jomtien Conference. Use has been made of materials prepared for the Conference and other related documents and publications which help put in better perspective issues and problems that call for continued attention and

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innovative thinking. As far as possible, the various issues and problems are set in the context of practical experience gained in a wide variety of situa-

tions by practitioners directly engaged in the day to day task of contributing as best they can to Education for All.

2. Understanding Culture: A Precondition for Effective Learning

Culture and education have a reciprocal, mutually generative, symbiotic relationship.

Kidd and Colletta, 1980

Cultural traditions should be seen not as obstacles, but as reservoirs of collective wisdom and foundations for new learning.

Hinzen, 1987

The interplay between culture, broadly defined, and the educational process

The United Nations family, on the initiative of UNESCO, is in the midst of activities marking the World Decade of Cultural Development (1988-1997). The observance of this decade is evidence of a growing awareness around the world of the vital importance of the cultural dimension in any human, societal or development effort. If culture is in fact a vital aspect of any development effort, it is especially so in the arena of education, for education is precisely the key to development: it unlocks the potentials of the individual for a fuller life, not just economically but also culturally and socially.

While the first objective of the Decade is concerned with the cultural dimension of development, the second is 'affirming and enriching cultural identities'. It is for this reason that in the context of 'education for all' it is necessary to explore insights into the interplay between 'culture', broadly defined, and education. This interplay will

be examined at the level of the primary school in Africa, of an adult literacy programme, and of the individual learner. Examples will be given of interactions between 'traditional' and 'western' systems of learning. The question of language policy in pre-school, primary school and adult literacy programmes will also be considered.

In the environment of the educational process, culture can be considered both as the content of the process and as the context (the how and why) and vehicle of the process. Discussions on culture as content raise such issues as the following. To what extent should curricula aim to preserve local indigenous cultures and, in multi-cultural nations, how does this add to or take away from a sense of national unity and identity? Who determines (and how) which aspects of traditional cultures have proven to be dysfunctional (unhygienic, divisive, etc.) and should no longer be passed on in the education system? How does one preserve a culture and yet allow it to develop rather than stagnate and fossilize? To what extent can cultures of other nations and societies be brought into the curriculum without leading to an unhealthy dominance of those cultures associated with a colonial mentality? What are the implications of using instructional materials that are not developed within a local culture but at a national centre, or, in some cases, outside the country altogether?

Discussions on culture as context or vehicle raise such issues as those listed here. What is the impact on learning of a school with a hierarchical structure and organization which are basically alien to, or different from, the authority and organizational

structure of the outside society it seeks to serve? In multilingual societies, what is the sacrifice in learning achievement and cultural identity that results from imposing, or even agreeing upon, a medium of instruction other than the local mother tongue? How can one make the sub-culture of the classroom a help rather than a hindrance to the learning process, and to what extent is that sub-culture consonant or dissonant with the larger societal culture in which the learner exists and in which he or she must function?

It is easy to see why these issues are so important. Too often and in too many places students are taught content irrelevant to their needs, in the context of a structure of authority alien to them, with the use of a language, textbooks and even teachers foreign to them. Yet, it is equally easy to see the danger of advocating a closed education system which, in the name of cultural preservation, effectively cuts off a sub-cultural community from the mainstream of national and international knowledge, progress and development.

The interplay between culture and education in national systems: the primary school level in Africa

At a time when education in Africa is facing a series of crises, a hard look at previous educational practices may shed light on strategies for tackling present problems. The word 'culture' has many different connotations and meanings, but as far as educational practices are concerned, a useful working definition may be: all those arts, beliefs, modes of behaviour and social institutions which characterize a community or an ethnic group. In many parts of the world, education is regarded as a programme for social action. Schools, viewed as institutions for bringing such a programme into effect, are sometimes referred to as instruments for propagating culture. Thus culture, the arts and beliefs of a people, can be transmitted through planned activities in schools as well as through unplanned activities in the home setting. All children live within a cultural setting and can imbibe aspects of this culture through formal as well as informal education.

While it is believed that culture can influence the school environment, the converse is also true – environmental factors can impinge on culture. Creating an environment within a school that is conducive to the transmission of culture in a positive way constitutes a major pre-occupation of educational planners and policy makers. For, as one African educator has claimed, 'no society will accept and respect an education system which ignores its culture' (Setidisho, 1989).

However, in many countries there is an ongoing debate about the nature of the culture that is being propagated in their educational institutions and in the society as a whole. Can culture be compartmentalized into states, regions or even continents? In Nigeria, for example, is there a Bendel State culture, a Nigerian culture or an African culture? In discussions about the cultural heritage, traditionalists argue that the African continent is rich in culture. But is culture tangible, visible or is it only a feeling? Can it be transferred from generation to generation within a closed system? How and to what extent has culture been entrenched in the widely used curriculum materials of the primary school? Examination of these questions may provide useful insights into the bridge between culture and education.

The culture of a people is expressed through a whole range of activities – language, ceremonial behaviour and ritual, songs, poetry, dance, dress, eating habits, sculpture and other artistic works, mannerisms, etc. 'Culture gives a society or a nation its identity.' Societies are indeed identifiable through their cultural expressions. Hence every society makes efforts to preserve its particular cultural heritage by transmitting it from one generation to the next. Yet some aspects of a culture may have to be reviewed and, indeed, rejected. For example, in some parts of the world, female circumcision is practised because it has been handed down as part of the cultural heritage. However, various groups now claim that the reasons given for such a practice are no longer tenable. Tribal marks' have also been handed down from one generation to the next. Today tribal identification by means of facial marking has lost its validity, especially in the presence of moves to 'de-tribalize' people and strive for national unity.

Understanding Culture:
A Precondition for Effective Learning

This chapter is based on material presented or available at two Roundtables entitled respectively 'Understanding Culture: A Precondition for Effective Learning' (T6), organized by UNESCO and the German Foundation for International Development, and 'Language Policy in Pre-School, Primary School and Adult Literacy Programmes' (T8), organized by the WCEFA Secretariat.

Roundtable T6 was chaired by:

Ghulam Mustafa Shah Said
Minister of Education, Pakistan

The presenters were:

Victor Ordoñez (Moderator)

Under-Secretary of Education, Department of Education, Culture and Sports, Philippines

Samuel Tunde Bajah

Institute of Education, University of Ibadan, Nigeria

H.S. Bhola

Indiana University, Bloomington, United States

Angela Little

Institute of Education, University of London, United Kingdom

Roundtable T8 was chaired by:

Mbemba Jatta

Minister of Economic Planning and Industrial Development, Gambia

The presenters were:

Lynellen D. Long

United States State Department and The Johns Hopkins University, United States

Kamal K. Sridhar

Department of Linguistics, State University of New York at Stony Brook, United States

Merita Irby

Stanford University, United States

Papers used in the preparation of this chapter and available at the Conference included the following:

Understanding Culture: A Pre-condition for Effective Learning at the Primary Level in Africa by Samuel Tunde Bajah

'Words of Wisdom' for Youth and Adults: The Cultural Context of Programme Design by H.S. Bhola

Understanding Culture: A Pre-condition for Effective Learning by Angela Little (including: Interactions between 'Traditional' and 'Western' Systems of Learning: the Australian Experience, by G.R. Teasdale)

Towards a Plan of Action for the Sahel Countries, Working Document reviewed by the Ministers of Education of the Sahel Countries (Bamako, January, 1990)

In primary schools, children are quick to ask the question 'why?' When African understandings and explanations of phenomena are being transmitted, teachers must be in a position to give convincing answers. Many graphic, linguistic and literary aspects of culture are worthy of inclusion in the primary school curriculum. Arrangements can be made for knowledgeable people in society to come to the school to explain and teach relevant aspects of local culture such as songs, modes of dress and traditional ways of preparing food from local ingredients. On occasions such as holidays, anniversaries, youth day celebrations, carnivals and end-of-year activities, primary school children may put on shows with a distinct cultural flavour.

Urbanization is a strong challenge to some aspects of the African cultural heritage, and a uniform cultural component of a national curriculum

may not be feasible. Furthermore, the impact of foreign cultures on African culture must be given very serious consideration in any curriculum renewal process, even, or perhaps particularly, at the primary school level.

Culture in urban and rural schools

The population from which the children of a school are drawn differs in an urban setting from that in a rural setting. In the latter, where the teachers come largely from the immediate environment, the children are inevitably exposed to cultural activities typical of that locality. It is very easy for their teachers to act, display and perform local drama, songs and folk tales, and explain local rituals. Moreover, these manifestations are transmitted through the use of a local vernacular language which is,

Box 2.1 Culture and out-of-school educational activities in Nigeria

A carnival is mounted annually by the Abadina Media Resource Centre of the University of Ibadan. It draws together primary schools from around the large Ibadan urban area. It is an all-day event during which the activities in which the primary schools compete include:

- traditional dances;
- traditional costumes worn by a King and Queen (equivalent to the Village Head and his Wife);
- drama;
- traditional musical instrument playing;
- a carnival parade.

All these activities are keenly contested for by groups representing the various schools. The children gain a great deal from the whole carnival.

The educational values of this activity are many. Children are given an opportunity to practice and to exhibit cultural activities which the elders have passed on to them. They are able to experience the wide variety of activities which form part of their cultural heritage and to learn about cultural activities which belong to other traditions. Reciprocally, the elders have the opportunity to see for themselves how the children absorb their Nigerian culture.

undoubtedly, the most appropriate medium, as idioms and proverbs can easily lose their real meaning in translation.

In contrast to the rural setting, both pupils and staff in an urban primary school can usually be described as heterogeneous in culture. Pupils in urban primary schools are influenced by the mixed cultural background of the staff. A teacher coming from a different part of the country to teach in an urban school may introduce aspects of the culture predominant in his or her own region. Children who attend schools with a mix of cultures quickly learn about cultures other than their own.

The interaction between 'traditional' and modern learning systems

A major issue in African countries is the interaction between traditional and modern learning systems, particularly their emerging synthesis in contemporary African primary schools. In traditional education there was a link between general knowledge and practical life; there was also a link between education and production, giving rise to vocational activities. Today, in African primary schools such links have been weakened and, in some cases, lost. Education was also linked with culture through the use of the mother tongue and through the incorporation of various cultural practices, but these links, too, have been weakened. It must be recognized, however, that as to-

day's emphasis on written as well as oral communication skills takes over from traditional modes of transmission, familiarity with numeracy, with problem solving and with basic scientific, technological, health and environmental knowledge is helping to broaden enormously the horizons of primary school pupils and prepare them better for their future life and work.

Much of the curriculum and many teaching materials and methods have until recently been imported, and with them they have brought in stereotypes from other cultures – for example, that of a scientist being 'a white man in a white coat'. There is also an over-emphasis on examinations and on rote learning which stifles creativity. With the austerity measures prevailing in many African countries in recent years and the scarcity of foreign currency, more and more attention is being given to the local production of textbooks and other teaching materials. Often the work of writers from local settings, they can bring into focus aspects of local culture, whereas imported books tend, with a few notable exceptions, to lack the local perspective and cultural background in the examples, photographs and illustrations they use. Books currently being produced in Africa bring in applications of local technology, local systems of government and scientific explanations of some local beliefs and practices. They are, in general, much more closely related to the children's own environment.

However, many problems remain. Policy may emphasise the transmission of the cultural heritage in African primary schools, but reality may be very different. Unless teachers are properly trained, they cannot meet requirements adequately. There is also a need to look afresh at the curriculum requirements for teaching culture in primary schools. Are they too ambitious? Even when appropriate teaching materials have been prepared, are they accessible? Ideas about culture may have been well documented in books, but if these books are not available to children because their parents cannot afford them, they remain inaccessible. There is clearly a need for a major effort to make adequate investment in primary education in Africa so that real progress can be made both in quality and in quantity. One objective of this investment should be the preservation and transmission of what is valuable in the culture.

The cultural context of programme design: adult literacy programmes

The central thesis [...] is that a culture-based non-formal education development strategy enables new knowledge, skills and attitudes to be introduced within the framework of existing knowledge, cultural patterns, institutions, values and human resources. The idea that the indigenous culture is the fabric within which development can best be woven, is based on three assumptions: indigenous elements have traditional legitimacy for participants in development programs; these elements contain symbols that express and identify various valid perceptions of reality; and they serve multiple functions – they can involve, entertain, instruct and inform. (Kidd and Colletta, 1980)

Culture is a living system. Cultures invent systems of education for their reproduction. In turn, education makes and remakes cultures through the dialectical process of reproducing and rejecting, continuing and questioning. Non-formal education can be a highly potent means of conveying cultural knowledge and values, since the learning it offers is reinforced through use in the real world, often with immediate effect.

In planning and designing a specific literacy programme, similar cultural considerations apply

with regard to content and context as apply to primary schooling. The challenge is to preserve what is of value in the indigenous culture and to renew what must be renewed, especially in the light of the profound influence of science and technology on society, changing even the old concepts of locality and culture. Locality, today, is more than a neighbourhood, and cultural boundaries have been broken down by the radio, the film and television.

Adult literacy programmes are a key form of non-formal education for genuine cultural transmission and transformation. There is nothing that more deeply transforms individual identities and cultures than literacy in the mother tongue. The more effective educators working in adult literacy are aware that they are helping make and remake culture. Often they are doing seemingly contradictory things: strengthening and reinforcing certain traditional cultural beliefs and ideas, while subverting and replacing others.

In planning and designing an adult literacy course, it is necessary to ensure that both the content and the methods are sensitive to and reflective of the local culture. Various aspects may be taken into account: social organization, economics, family structure, religion, politics, ritual and ceremonial behaviour. For adult literacy programmes to be sensitive to cultural values and habits of thought, the educator must consider what is to be included, what put aside, and which method or methods best suit the teaching of the content.

During the process of planning, the following considerations should be borne in mind. There is a dialectic relationship between them, there is a need to move continually backwards and forwards.

Building a learning environment. The programme designer should start where people are. Acquiring knowledge should not be presented as something new, but as an ongoing activity with which the community already has experience. Familiar learning experiences should be highlighted and the existing learning environment made more visible and real to everyone. Efforts should be made to widen local horizons so that people can see how others with similar problems and needs are learning and changing their lives.

Defining needs. Even within a local community, learning needs will vary. Both secular and spiritual needs should be taken into account, and some needs may have to be negotiated – for example, women should be given the chance to say what they want.

Defining objectives is not just a simple theoretical process. Here, too, cultural realities should influence the move from definition of needs to definition of objectives.

Selecting clients. When the weaker or less vocal sections of the community are paid particular attention, programmes are much more effective. Domination and subordination in a society may acquire cultural sanctions, so there is a need for the programme designer to be sensitive to such realities and ready to challenge them.

Choosing content and codes (language) is a highly, culturally sensitive area. Choice of content can have serious consequences for existing social organization. Should it prepare women for old roles or for new ones – domesticated or liberated? Should it touch on family planning? If so how? (see Chapter 7). The medium of instruction is particularly important. If the mother tongue is widely spoken and has a rich heritage of literature, the choice of the language medium is obvious. But if it is not widely used, another language of wider use may be a better choice.

Selecting methods and materials. There are cultural expectations about what it means to learn and what constitutes learning materials. The indigenous pedagogy of learning by doing and experience found in most countries should be adopted as far as possible. Folk media and materials, and traditional games may be culturally appropriate. The people's literature, such as the *Kissay-Kahani* of the Punjab in India and the *Folhetos* of Brazil, should be put to good use.

Using existing institutional and social arrangements. Traditional institutions such as Koranic schools, Christian churches and Buddhist temples, as well as secular institutions such as community centres, clinics and co-operatives, may be used for literacy programmes.

Selecting settings for learning. Learners often want to fit into a formal learning setting such as a school.

Community settings such as those just mentioned should be used as appropriate. Learning should be joined once again with living and working.

Recruiting teachers. Compatibility of cultural backgrounds between teachers and learners is generally useful. Women teachers for women may be necessary in cultures with high rates of illiteracy.

Training literacy workers. The role of teachers and other literacy workers should be seen as that of facilitators rather than instructors. If necessary, they should receive cultural training to make them familiar with local customs and idioms. They should also be trained to recognize activities peculiar to the cultural traditions of the community which do not necessarily make use of speech. With such a background they should be able to help others to examine, renew and create new cultural syntheses. This is a difficult task, but it is a key factor for success.

Conducting evaluation and developing feedback. Adults need not necessarily be subjected to the kinds of tests and measurements found in the formal education system. A minimal measure would be simply to invite the learners themselves to give an opinion on the literacy course, both as it proceeds and when it concludes.

The key to success: participatory design. There is much to be said for participation in the process of designing a course in adult literacy. This implies that design decisions are taken democratically with all those involved – e.g. learners, teachers, local leaders and extension workers. Everyone should be able to take part in the design of his or her destiny. People feel committed to working on programmes which they have helped to shape. Instead of having to control, pacify or co-opt learners, the participatory approach encourages independent learning and motivates greater effort. Moreover, it endows the programme with a legitimacy in the eyes of the whole community.

However, community interests are not the only ones to be considered. National interests and, in some circumstances, regional ones need to be taken into account, too. Before adopting a locally designed course as definitive, it would be prudent to offer it for review by higher authority.

Culture and learning: the individual learner's perspective

It is a characteristic of the framework within which culture and learning is analysed to regard the culture as a cause of past failure rather than of success, of present problems rather than achievements and of future difficulties rather than possibilities. However, learning is itself a cultural process, so an understanding of the culture helps educators to appreciate the conditions from which new learning must start. This implies a positive rather than a negative role for culture in the learning process. Within this perspective two points can be made.

First, learning is a process in which existing culture is transmitted and where the potential for future cultural development is created. The school is but a part, albeit an important part, of the environment in which this takes place. Second, the cultural transmission and creation which occurs in school is not simply a matter of knowledge, skills and values – the WHAT of learning – it is also about HOW people learn and WHY they learn. Indeed, these two dimensions of learning – the HOW and the WHY – may be as important, if not more so, than the WHAT of learning in creating the competence and confidence required for sustainable learning and for the continued development of the individual and society.

To illustrate: the school provides one pasture⁽¹⁾ (or arena) from which learners can feed, and where culture is transmitted and cultural development encouraged. The home provides a second pasture. Both are characterized by the content of the learning they offer (the WHAT of learning), the learning strategies they employ (the HOW of learning) and the motivation to learn they provide (the WHY of learning). How do these pastures compare?

1. The term pasture is used in preference to 'arena' to convey the idea that, when learning, children are feeding in a field of knowledge and experience in a very active way.

The What of learning

In the school pasture the child learns the skills associated with literacy and numeracy together with a considerable amount of knowledge that does not come from the immediate living environment. In the home pasture the child may learn skills such as those associated with economic and social survival, with producing and preparing food, with providing shelter, and collecting water, and how to fit in with both the immediate and the extended family.

The How of learning

In the home much learning is context-bound. It involves some trial and error, and learning by imitation. The language of instruction is usually the mother tongue. In the school, learning is much less context-bound. It is more abstract and may involve a considerable amount of learning by rote. The language of instruction may not be the mother tongue.

The Why of learning

In the home the child is motivated by several factors – avoiding punishment by parents, the fear of loss of parental affection, the satisfaction of hunger and thirst, and the need for shelter and the prompting of curiosity. In school, there is also a wide range of motivations for learning – the satisfaction of parental expectations that emphasize the economic and social value of literacy and numeracy, the challenge which derives from interesting learning tasks structured by the teacher and by learning materials (for instance, enjoyable textbooks) and the goal of examination success which provides the passport from one cycle of education to another. Not all school cultures emphasize these goals to the same degree.

So cultural learning pastures vary. Two have been contrasted but there are others – the workplace (field, river, workshop, etc.), alternative learning centres such as the mosque, the church, the temple and the market. And each of these has its own characteristics in relation to the WHAT, the HOW and the WHY of learning.

Cultural learning pastures and base learning cultures

A cultural learning pasture (CLP) comprises the knowledge (the WHAT), the learning strategies (the HOW) and the learning orientations (the WHY) of those who currently feed in the pasture, educators among them. Learners, for their part approach the pasture with a base learning culture (BLC) (i.e. a body of existing knowledge, understanding and attitudes) which they use to construct and reconstruct learning events (see diagram).

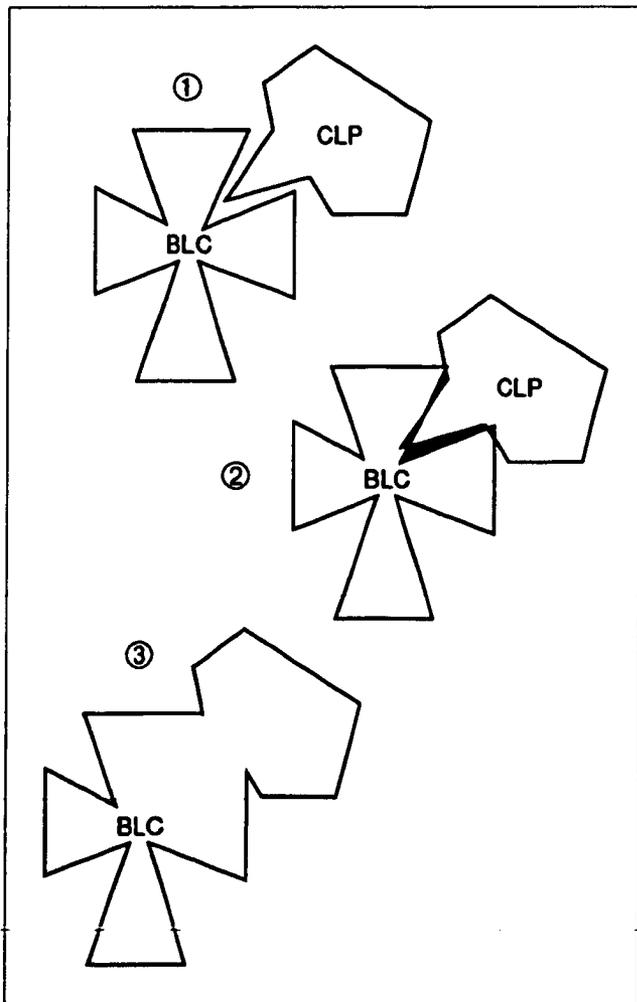


Figure 1
Cultural Learning Pastures (CLP) and Base Learning Cultures (BLC)

Most learning events involve an encounter between learners, their BLCs, educators and their CLPs (Stage 1). In a static society which reproduces itself perfectly, the gap between the two cultures is relatively narrow. Although the learning gap may appear wide to the learner, the educator can fairly readily understand the language and concepts of the learner and can build from them in a way which makes learning effective. The learning gap can be bridged (Stage 2). Where a learner encounters a CLP shared by educators of a social group radically different from that of the learner, the language, concepts, strategies and orientations may be so unfamiliar that both learner and educator experience difficulty in making contact with each other. The learning gap cannot easily be bridged.

When effective learning does take place, the base learning culture of the learner changes. It is not static but dynamic. The effective educator's role is to understand the culture of the learner and to present elements of the cultural learning pasture he or she seeks to share with the learner in a way which connects with pastures previously encountered by the learner. Effective learning involves the achievement of a succession of dynamic equilibria between learner and educator. When equilibria are achieved, the culture of the learner changes and takes on a new form (Stage 3). This new culture then presents itself as a new challenge for the educator. However, if the initial gap between the two cultures is too wide, then no learning 'contacts' or equilibria will be achieved, and learning will become less and less effective. Conversely, if there is permanently no gap between them, then no learning will take place. Both cultures can be characterized in terms of the three cultural dimensions referred to above – the WHAT, HOW, and WHY of learning.

A fourth dimension can be added to these three – the WHETHER of learning. How do the learner and the educator know whether learning has taken place? How is learning assessed? To return to the two cultural pastures described earlier: in the HOME, assessment is implicit and continuous. It is undertaken by the learner and the educator (usually a relative) and is criterion-referenced. That is

to say, the learning is assessed relative to a knowledge or skill criterion (for instance, a child is able to feed himself or herself with a spoon). Mastery learning is expected from almost all children. It is regarded as normal for all children to succeed, even if it takes some children a little longer than others. In the SCHOOL, by contrast, assessment is more explicit. Frequently it is a one-off rather than a continuous activity. It is often undertaken by an authority external to both the learner and teacher and is norm-referenced. That is to say, the learner's achievement is not assessed in relation to a criterion but in relation to the performance of others. It is rare for 100 per cent of the learners to succeed, particularly as one purpose of such assessment is selection for entry to the next cycle of education.

The *World Declaration on Education for All* emphasizes rightly the importance of effective learning for all.

The focus of basic education must, therefore, be on actual learning acquisition and outcome, rather than exclusively upon enrolment, continued participation in organized programmes and completion of certification requirements [...] It is, therefore, necessary to define acceptable levels of learning acquisition for educational programmes and to improve and apply systems of assessing learning achievement. (Article 4, *World Declaration*)

School based assessment usually implies the selection of some as successful and others as unsuccessful learners. One of the challenges for the implementation of Education for All is to reconcile the assessment of learning for all with the selection of a few, where necessary.

Language choice

'Language is the basis of culture. If the language is lost, the culture is also in danger of being lost.' As already suggested in this chapter, language choice is a fundamental factor in the interplay between culture and the educational process. The issue of language is complex, and solutions are often controversial. In many situations language choice is still a political issue, but it also has many other facets.

To a poor child or adult, school or a literacy class may seem to be an alien place, part of a richer, more powerful world that is difficult to enter and in which it is even more difficult to succeed. If the people in this world also communicate in a strange language, then the difficulties seem overwhelming.

There is general agreement on the importance of literacy in the mother tongue, both for children and for adult learners. But *written* language is the indispensable medium of literacy. Yet of the more than 4,000 spoken languages in the world, only about 300 are in regular use in written form and fewer than 100 of these have a significant written literature. As most countries are multilingual, the concept of making the mother tongue a first choice for new learners may have to be re-defined in terms of making 'another language well known to the learners' a first choice. This can be of special importance in ethnically mixed areas.

The complexity of language choice

While there is general agreement with regard to the importance of early mother-tongue instruction and literacy, agreement on many other language issues is really only possible at the national level. Continued use of former metropolitan, colonial, languages throughout vast areas, such as 'English-speaking' and 'French-speaking' Africa, tends to obscure the great complexity of the issues which impede the making of clear choices about language in many countries. It may not be sufficient to choose a 'national' language and also to encourage initial 'mother tongue' instruction. There may also be an 'official' language, possibly one with no traditional roots in the country. These considerations, coupled with the high costs and high failure rates associated with some language policies, have led to the recognition that local languages are irreplaceable and a vital tool in the development of the mind. However, this in no way simplifies the complexity of the choices that have to be made. There are four main types of situation:

No linguistic majority. In Nigeria, for example, there are three major languages – Hausa, Igbo, and Yoruba – and about 400 other languages

Box 2.2 Interaction between 'Traditional' and 'Western' systems of learning: The Australian experience

The challenge of [...] finding ways to keep alive what is unique in each society without sealing it off from outside influences' is especially acute for educators working with indigenous minorities in industrialized countries. Experience has shown that the content and processes of western curricula are destructive of the values and knowledge systems of minority cultures. The indigenous people of Australia represent one of the oldest continuing cultures in the world, having occupied the continent as semi-nomadic hunter-gatherers for at least 50,000 years. While their nomadic lifestyle resulted in a somewhat limited material culture, the Aboriginal people have a rich spiritual and ceremonial life and complex patterns of social organization. The settlement of the continent by Europeans just over 200 years ago has had a detrimental effect on Aboriginal Australians, and they now comprise a mere 1.5 per cent of the total population of 16.25 million. Only those living in the more remote central and northern regions have been able to sustain a tradition-oriented lifestyle, retaining the vernacular as their first language.

Most tradition-oriented Aboriginal people are committed to language and culture maintenance while at the same time seeking to give their children the English language literacy and numeracy skills that will allow them to interact with the wider society. Parents typically express this as wanting their children to 'grow up Aboriginal' but also to 'learn reading, writing and counting'. Yet the modes of teaching required for transmission of these two sets of knowledge are very different. In fact, traditional systems are, in many ways, incompatible with contemporary western systems.

Aboriginal perceptions of childhood are different from western perceptions. From a very early age children are encouraged to be independent and to accept responsibility for their own decisions. The peer group rapidly becomes the main socializing force and adults are not a significant source of motivation to learn, except perhaps for short periods during initiation. Within aboriginal society, all relationships are prescribed within a complex and carefully structured network based on factors such as gender and generation level. Mutual obligation and avoidance rules are observed. Patterns of loyalty and obligation within the kinship system require children to learn certain skills only from certain relations. Learning is, therefore, person-oriented rather than information-oriented and thus highly dependent upon the nature and quality of the social relationships involved.

Unlike western society, where virtually all knowledge is public and thus accessible to all, a great deal of

knowledge in Aboriginal society is secret and, therefore, exclusive to particular groups or individuals. The more exclusive a body of knowledge (i.e. the smaller the number of people who have access to it) the more powerful and prestigious that knowledge becomes. Knowledge is possessed by carefully defined rights of inheritance, ownership being determined by criteria such as age, gender, birth order and family affiliation. Prior to initiation, children have rights to only very limited bodies of knowledge, especially in spheres of ceremony and ritual. The provision of western knowledge to children is seen to undermine the authority of older people and some communities arrange for the latter to review curricular materials prior to their use in school. Paramount to the Aboriginal world view is the coherence of land, people, nature and time. The inter-relatedness of knowledge is stressed; quantification and analysis of knowledge do not occur. Thus, western notions of numbers and mathematics are not only irrelevant to the Aboriginal world, but contrary to it. A world view in which land, spiritual beings, people and trees are somehow unified does not lend itself to scientific analysis.

These, and many other fundamental differences between Aboriginal and western world views pose very serious dilemmas for both Aboriginal and non-Aboriginal educators. It has been recognized that the only effective solutions will be those developed from within Aboriginal communities, not imposed from without. Furthermore, because of cultural, linguistic and adaptive variations between Aboriginal groups, solutions are likely to differ from one context to another. Central to the solutions that are emerging are Aboriginal ownership and control of curriculum content and process, compliance with traditional patterns of social organization and authority, close integration of school and community, and the development of flexible school structures. It is clear that no universal solution will be found. At this stage the various approaches that are evolving appear more successful in strengthening cultural identity than in promoting western knowledge acquisition. Nevertheless the future does look promising as Aboriginal people increasingly assume control of their children's schooling and discover ways of preserving their own unique identity while participating on their own terms in the wider society.

Adapted from 'Interactions between Traditional and Western Systems of Learning: the Australian Experience' by G.R. Teasdale

spoken by small communities. In Papua New Guinea over seven hundred languages are spoken by a population of barely 4 million. In some countries with a great variety of languages, a pidgin or creole, usually based on a European language, evolved as a means of communication between members of different linguistic groups.

A lingua franca relating to several indigenous languages. Swahili in East Africa, for example, evolved from indigenous languages and is closely related to a variety of local languages still in use.

Predominant indigenous language. For example, Quechua, a language indigenous to the highlands of Peru, Ecuador and Bolivia, is spoken by large portions of the population, although Spanish is the official language of these countries. Somalia is one of the few African countries in which the overwhelming majority of the population speak the official language, Somali. The situation is unusually complex because Somali has only recently become a written language, and the two former colonial languages, English and Italian, are still widely used.

Multiple languages with literary and religious traditions. India, with over 1,000 languages and more than a dozen scripts, acknowledges fourteen official regional languages; these are used, but not exclusively, in local and state government, in politics and in education. Hindi has the status of national language, but English is widely used in government and politics, in commerce and industry, and in education.

Choosing a language of instruction

Education for all requires an examination of language needs ranging from those of the local community to those of the nation. Which language should be chosen? How should it be taught? How will these choices affect people's lives? The choice is often between using a language of wide diffusion (a so-called world language) as the first language, and the mother tongue as the second language at a particular level of education, or using the mother tongue as the first language and the world language as the second.

The languages of wide diffusion, e.g. Arabic,

Chinese, English, French, Portuguese, Russian and Spanish, all have their particular historical and cultural connotations. The use of other, indigenous languages varies widely in level and extent. There are often several to choose from in a given country or state, and choices inevitably carry with them the likelihood of alienating some groups while favouring others. However, it is generally agreed that the point of departure for a language policy should be consideration of the role of local languages in the lives of the people.

Three common assumptions, none of which is justified, often underlie discussions about language choice.

The first is that multilingualism is a hindrance to development. Yet Singapore, for example, with the third highest gross domestic product among countries of the Pacific Rim, has four official languages. In school, children learn in English, in Malay, in Mandarin Chinese or in Tamil, and all must study one other official language as a second language.

The second assumption, also mistaken, is that the most direct route to development is for everybody to learn in a 'world' language. Is it really necessary for everybody to know a world language? Small countries in Europe have demonstrated that it is quite possible to conduct education in their own languages and also have sufficient numbers of people fluent in at least one of the world languages.

The third mistaken assumption is that language patterns are fixed and unchanging. In fact, the patterns and the languages themselves are constantly changing. People on the move take their languages with them. Experience with refugees provides valuable insights. Adults adapt to new languages less easily than children, but for all refugees and migrants, understanding the language of the host community is the key to local acceptance.

A child's mother tongue is a basic tool for understanding and communicating with the surrounding world. Effective primary education builds on the child's early learning in the mother tongue, but within the context of the community. If literacy is to be sustained, children and adults need occasions to use their literacy within the community. It can be sustained through work situations and

through opportunities for secondary education, although this may mean moving from literacy in the mother tongue to literacy in a second language. Literacy can facilitate access to community services such as health care. Effective education at the community level thus helps to develop human resources. Good language policy demands a response to the dynamics of language and of language situations as they reflect changing social and economic circumstances.

Some key problems and issues

The question of *local language or a world language* was reviewed in the paper 'Towards a Plan of Action for the Sahel Countries', which argues that instruction in national languages, moving by stages to the official country language, is a theoretically attractive approach offering students a modicum of learning in case of academic failure. However, countries like Guinea and Burundi have returned, wholly or in part, to teaching in French after large-scale experiments with a national language. Other countries, such as Niger and Mali, have conducted similar experiments on a smaller scale without as yet drawing conclusions in terms of student progress. The difficulties are political as well as pedagogical and practical. In most cases, several languages are spoken in a country, and this approach, because it adds an element that always requires delicate handling, can seriously complicate the design of teaching materials as well as the selection and assignment of teachers. That said, it can of course be argued that teaching in the local language has advantages and can lead to greater cognitive and functional gains. It may even be that initial learning in a local language ultimately helps students learn better in the 'official' language. These possibilities are, however, only hypotheses which still need to be tested. Without prejudging the results of such research, one may note that the overall effectiveness of such an option depends heavily on local contexts (number of local languages, which ones are spoken by various ethnic groups, etc.).

Parental choice and wishes constitute another important factor which has to be taken into account.

In many cases, while they are happy for their children to start their education in the mother tongue, parents are anxious for them ultimately to have access to the language of the national economy and government.

Another facet of the problem is found in the linguistic complexity of many urban areas. In urban West Africa, for example, the spoken language in a particular town is not necessarily the mother tongue of most inhabitants. In such situations either the local spoken language or the particular world language currently used would be the preferable language of basic education.

Bilingualism raises a whole series of issues. Evidence from several sources suggests that it can have a very positive influence on learning. Research in Northern Australia covering fifteen aboriginal languages has been conducted over a sixteen-year period. Evaluation of pupil progress has shown that by the seventh year of primary school bilingual children did better in all tests, especially English and mathematics.

Children and adults learning together is an issue that needs consideration. While the importance of literacy for both children and adults is now widely acknowledged, special problems arise if the language of adult literacy (for example, the mother tongue) differs from that of the primary school (for example, a national language). In general, different age groups have dissimilar learning needs and, therefore, require different learning materials and methods. Nevertheless, this does not preclude adults and children learning at the same place in the same language, thus promoting community involvement and a common medium of communication.

Minority cultural groups, whose mother tongue is not in regular use in written form, can easily be left at the margins of basic education systems. Similarly, problems of access and equity are often faced by refugees and displaced persons as they move between different language groups.

The *preparation of reading materials* for multilingual situations can be costly. However, methods have been developed to reduce costs by preparing illustrations common to publications on the same subject with texts in different languages.

Understanding Culture:
A Precondition for Effective Learning

Wise language policies are of vital importance for effective learning and for the transmission and development of culture. This is a policy area that could benefit considerably from increased research and the sharing of experience among countries.

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3. Towards Universal Literacy: a Review of Experiences

The real question that is being asked is whether we can reach the goal of full literacy by the year 2000. My answer is 'yes', if we all – governments, non-governmental organizations, intergovernmental bodies, agencies, foundations – decide to do so: if we exercise the political will to change priorities from military expenditure to expenditure on education, nutrition and health. We have now generated sufficient momentum to dare to be a little unrealistic – for only those who are a little unrealistic can make the impossible today possible for tomorrow.

Federico Mayor

Adult literacy: the challenge for the 1990s

The fact that there are about 950 million illiterate adults in the world today demonstrates the immense and intolerable asymmetry between those with access to knowledge and those without. Illiteracy is a global problem. While it is quantitatively more serious in developing countries, it is found in the industrialized world as well. Wherever illiteracy exists, it goes hand in hand with poverty, whether as a cause or a consequence. Women, often the poorest of the poor, are also the most disadvantaged among the illiterate. To make them full and equal partners in the educational process is thus an absolute priority.

However, literacy alone will not ensure prosperity, and literacy will not be sustained if the ability to read, write and calculate is considered as an end in itself. Literacy needs to be looked at in the much wider context of political, economic, social and

cultural development. There is a growing consciousness that literacy is one of the first steps in the process of enabling the deprived to take part in society on a more equal basis. Without explicit attention and support, illiterates, who represent the weakest segments of society, will continue to be the most exposed to austerity measures (UNICEF, 1987). The first argument for adult literacy is accordingly the moral imperative to promote equality, social justice and human rights.

Of course there are compelling economic as well as equity justifications for investing in adult literacy. Reference is made in other chapters to the fact that providing literacy, numeracy and practical knowledge to parents, especially mothers, can have a profound effect in reducing the rate of child mortality. There is also a growing awareness of the positive effects which parents' education can have on their children's participation in schooling and their scholastic achievement. Such benefits, while difficult to quantify, are considerable.

These effects of adult literacy suggest that any global strategy for universal literacy and basic education that relies on the primary school alone, in the absence of complementary measures, is likely to be wasteful and inefficient. Although universal primary schooling – of sufficient duration and quality – provides the most realistic starting point for achieving universal literacy, complementary and follow-up educational provision is essential. Such provision should aim both to consolidate and extend the gains of primary schools and to provide for adults who never went to school or who did not complete a primary school programme.

This chapter is based on material presented at the Roundtable on 'The Struggle for Adult Literacy: a review of Experiences' (T23) organized by UNESCO, the Swedish International Development Authority (SIDA) and the International Institute for Educational Planning (IIEP).

The Roundtable was chaired by:

Federico Mayor
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The presenters were:

Ingmar Gustafsson (Moderator)
Head, Education Division, SIDA

David Macharia
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Anita Dighe
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University, India

Rosa Maria Torres del Castillo
Former Director of the National Literacy Campaign
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Kasama Varavarn
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Papers used in the preparation of this chapter and available at the Conference included the following:

The Struggle for Adult Literacy: The Challenge for the 1990s prepared by SIDA/UNESCO/IIEP
Adult Literacy in the Third World by Agneta Lind and Anton Johnston (SIDA)

The Functioning and Effects of the Kenya Literacy Programme by Gabriel Carron, Kilemi Mwiria and Gabriel Righa (IIEP)

Functional Literacy Projects and Project Proposals: Selected Examples by Kjell Linder

Literacy and Basic Education for Adults and Young People: Review of Experience by Phillip Jones

Meeting the Basic Learning Needs of Out-of-school Children: Non-formal Approaches by R.H. Dave, A.M. Ranaweera and P.J. Sutton

The Campaign for Literacy Among Adults: The Test of Experience prepared by Ministeria de Educacion y Ciencia, Spain

Reaching the Silent Billion - Objective: Education for All, UNESCO Sources No 12, February 1990

Finally, and more generally, it has been demonstrated that literacy learning is not merely a technical exercise. It affects a whole range of cognitive processes and attitudes, causing substantial changes in the perception and the understanding of reality (Scribner and Cole, 1981). Adults who have taken part in literacy programmes tend to be more open-minded; they benefit more from different learning opportunities; and they put into practice new ideas more easily than do their illiterate counterparts. This is not to say that illiterate people lack wisdom, but illiteracy limits their opportunities to use their wisdom for their own benefit and for that of society.

From this point of view, adult literacy can be seen to be a vital prerequisite for an effective and equitable process of development. Without literacy, important segments of society are doomed to remain outside the mainstream because they lack the means with which to understand their environ-

ment and to participate fully in the life of their communities.

Major issues in designing and implementing adult literacy strategies

Experience in recent decades points overwhelmingly to the conclusion that there can be no single strategy for achieving adult literacy. During the period 1946-1964, the 'fundamental education' approach was promoted. Attention was focused on finding the most effective methods of teaching reading and writing in the mother tongue. An extensive study was conducted (Gray, 1956), and the findings showed that there is no one universally applicable method; they further demonstrated the need for a variety of programmes and methods suited to particular situations. At the time, adult literacy in developing countries was usually conceived as part of a wide range of small-scale devel-

Box 3.1 *The non-literate survive... But do they?*

....the non-literate 'survive'. They are born. They grow up. They play. They sing. They marry. They buy and sell. They build huts and homes. They make beautiful artefacts. They have children and grandchildren. They develop deep understandings of life. Some lead and govern their peoples in localities and communities. But it is impossible to deny that at this point in human history, they are clearly, and unquestionably, disadvantaged in relation to the other two and a half thousand million

adults who can read and write, and, therefore, have available to them the world of print from which the non-literate are excluded. The illiterate, thereby, are excluded and marginalized as they are disallowed from joining to define their own world and from contributing to collective knowledge, to history and to culture.

Source: H. S. Bhole, *Literacy and Survival*, Geneva, IBE-UNESCO, 1990

opment activities designed to have a practical outcome in meeting the felt needs of the programme participants. Thus improvements in sanitation and health care were seen as more likely to occur and endure if opportunities were also provided for people to learn simple reading and writing skills. This approach was not regarded as highly successful at the time, but it rightly recognized the role of literacy in meeting basic human needs.

The 'functional literacy' approach was promoted in the Experimental World Literacy Programme (EWLP) which was launched in 1966 with the support of UNESCO and UNDP. In this approach, reading and writing were taught together with professional and technical knowledge and skills. Each literacy programme was linked to a particular economic development project. While one of the long-term aims of EWLP was the total eradication of mass illiteracy, functional literacy was seen mainly as an investment in human capital, with a direct effect on productivity and indirectly on human welfare. At the heart of such programmes was the assumed link between work-oriented literacy and worker productivity. EWLP extended over seven years and into eleven countries. The direct results were relatively meagre, except in the United Republic of Tanzania where the programme was widened and taken over by the political momentum of a successful mass literacy campaign. Some valuable lessons were learnt from EWLP – in particular that literacy activities must not be viewed as an exclusively technical or economic undertaking (which in practice often excluded women altogether). Social, cultural and political factors are as important,

if not more so (UNESCO/UNDP, 1976). 'Functional literacy' continues to be applied in many countries, but with considerable modifications resulting from the EWLP experience.

The narrow approach to functionality embodied in the original EWLP projects proved inadequate in at least two respects. First, the primitive notion of human capital it espoused and the simplistic model of the development process on which it was premised were rapidly overtaken by more refined broader-gauged conceptions. Second, the political and social nature of the development process was strongly and strikingly emphasized in the writings of Paulo Freire. The effect of these two changes in attitude was clearly seen in the 1975 International Symposium for Literacy which produced the *Declaration of Persepolis*, in which literacy is linked to each person's fundamental requirements, ranging from his or her immediate vital needs to effective participation in social change. According to the Declaration:

[...] the concept of functionality must be extended to include all its dimensions: political, economic, social and cultural. Just as development is not only economic growth, so literacy [...] must aim above all to arouse in the individual a critical awareness of social reality, to enable him or her to understand, master and transform his or her destiny. (Bataille, 1976)

Mass literacy or selective approaches?

The mass campaign seeks to involve all segments of society in order to make adult men and women literate within a particular time-frame. There are

two distinct mass literacy campaign strategies: 'one off' campaigns aimed at eradicating illiteracy within a period of one or two years, and a series of campaigns, each with its own enrolment and literacy target within a more general (five-to ten-year) plan for the eradication of illiteracy. In 1977, UNESCO, through the International Council of Adult Education (ICAE), commissioned a study of the reputedly successful mass literacy campaigns of the twentieth century. The study (Bhola, 1982) analysed eight campaigns – those of Brazil, China, Cuba, Myanmar, Somalia, United Republic of Tanzania, the USSR and Vietnam. This study was discussed at the International Seminar on Campaigning for Literacy (Udaipur, 1982) which adopted a literacy declaration calling for massive literacy efforts and underlining the importance to be given to political, institutional, organizational and mobilization aspects of campaigns. Subsequently, an international seminar on Co-operating for Literacy was held in Berlin in 1983 to develop further the means by which ideas and resources could be shared and used more effectively to contribute to the goal of eliminating illiteracy by the end of the century (Fordham, 1983).

A number of countries have already succeeded in reducing illiteracy rates dramatically by means of national literacy campaigns. They have demonstrated that, even in situations of scarce resources, it is possible for national governments to mobilize populations on a mass scale to participate in literacy projects. Only in a few exceptional cases and usually in a revolutionary context, for example in Nicaragua, have they been implemented in less than a year. Other countries, including Ethiopia, Angola and Mozambique, where the illiteracy rate was much higher to begin with, have adopted a step-by-step campaign strategy.

Experience indicates that three major factors are required for the successful implementation of a campaign. First, countries which have achieved success have invariably had a strong political commitment and the power to mobilize all the human, institutional and material resources they needed. Second, successful campaigns have been based on centralized formulation of policy coupled with a decentralized organization and implementation by

local authorities. Finally, the campaign approach has worked well only when political priority has been assigned to literacy as an integral part of a broad national strategy or as a revolutionary movement designed to overcome poverty and injustice. In such situations the demand for literacy becomes part of a more general aspiration for a better life. As such it lends itself to ready acceptance of mass mobilization.

A good example of a campaign in which these criteria have been met is in Ecuador. The national campaign was mounted in the mid-1980s in a non-revolutionary situation as part of a peaceful development process. The strategy was carefully planned with the elements of social mobilization, participation of youth, carefully selected content, appropriate training of literacy workers, extensive strategies for follow-up and evaluation of both the social and pedagogical results. An interesting feature was the mobilization of large numbers of students to do the teaching.

When planning is inadequate or based on unrealistic assumptions, the establishment of structures for organizing a nation-wide literacy campaign may lead to large-scale investment showing little return. Often, smaller scale, selective approaches to adult literacy may provide more promising results. Such approaches have been carried out successfully in several countries, particularly by community-based non-governmental organizations and by popular movements, or by a combination of local, voluntary and state initiatives. In practice, the literacy strategies actually being implemented are most often a combination of different approaches, borrowing successful elements from a variety of experiences. Whatever the actual combination of strategies adopted, experience also shows that a number of common challenges must be met.

Stimulating and sustaining motivation

The most difficult and most critical challenge in any adult literacy strategy is how to create and to maintain motivation. For people living in conditions of extreme deprivation and engaged in a daily struggle for survival, to learn basic literacy

Box 3.2 The Jamaican Movement for the Advancement of Literacy (JAMAL)

Since 1972, JAMAL has helped over a quarter of a million people to read, write and calculate. JAMAL was established by the Government to provide training in literacy and basic job skills for non-literates aged 15 and over. It operated in a step by step approach and later expanded its activities to ensure more regular attendance in primary schools and the development of follow-up reading materials and occupational training activities for the newly literate. By these efforts, the illiteracy rate was reduced from over 40 per cent, when the project started, to 18 per cent in 1978.

JAMAL tackled the illiteracy problem by establishing literacy classes all over the island – in private homes, churches, community halls and schools. It also set up 16 adult education centres where part-time teachers, trained in JAMAL adult education methods, help adult learners to master the art of the written word.

Since 1982, emphasis has been placed on integrating literacy and basic skills training for 15-25 year-olds in a wide range of areas, geared to the demand in the student's home district. So far, over 1,200 persons have

been trained and the majority of them have been able to find jobs. Training has been provided in such occupations as auto-mechanics, plumbing, agriculture, sewing and embroidery.

Realizing the potential of communication support, JAMAL is operating its own radio studio where, in 1988 alone, some 290 radio programmes were produced with the assistance of UNESCO. Ten television programmes were also produced along with a national television quiz show. The quiz show has now become an annual event. Other regular events include the 'JAMAL Week' which follows on International Literacy Day each September.

JAMAL's success is perhaps the more remarkable in view of the financial stringencies under which it has had to operate since the country's structural adjustment in 1983, resulting in the literacy budget being cut in half. The staff of JAMAL has been reduced from 816 in 1983 to the current 117. Much remains to be done for JAMAL to achieve its goal of 'literacy for all by the year 2000'

Source: UNESCO

skills is not generally perceived as a priority. Moreover, the intensive and sustained efforts required to master these skills may discourage many learners. This is why all activities involved in implementing a literacy programme must be geared to ensuring, reinforcing and maintaining motivation. In general, when there is no mobilization for literacy, no demand for it will be manifested. It may, therefore, be necessary to create situations which generate an awareness of the need for literacy or to select areas where such a demand already exists. When literacy is part of ongoing developmental projects aiming at fulfilling felt needs, participation and motivation are enhanced. Learners with some previous exposure to written language or to formal education are often more motivated to join literacy classes than are illiterate people without such experience (ICAE, 1979).

Mobilizing political will

Political will is an essential condition for successful campaigns. The examples of China, Cuba, the

United Republic of Tanzania, and Vietnam have been presented as successful mass literacy campaigns where strong government leadership was evident. Political will involves mobilization of resources: funds, personnel, institutions, expertise and infrastructure. At the people's level, the need is for participation, dedication and sacrifice, whether as teachers, learners or members of village communities and local organizations of various types.

The massive mobilization of people and resources – and sustaining the momentum – is not easy, but can be achieved with strong leadership which permeates the whole structure of society. In such situations, illiteracy becomes recognized not as a problem to be left to the educator or to a single department of government, but as an issue demanding the total commitment of society. In successful campaigns, literacy is seen not as an end in itself, but as an element in a broader scheme of things. For example, in the United Republic of Tanzania, the object was to mobilize the country's

Box 3.3 The Kenyan Literacy Programme

A massive literacy programme was launched in Kenya in 1979 as part of a global development strategy on which the country's Fourth Development Plan (1979-1983) was based. By 1984 and 1985, there were 200,000 students enrolled (77 per cent women). At the same time well over 95 per cent of all children were going to school, tertiary education was being expanded, and considerable public resources were committed for balanced general development. Although the unfavourable economic situation since the mid 1980s has caused a reduction in the size of this functional literacy programme, it still produces thousands of graduates every year and is now a permanent feature of the Kenyan

system and a well-established component of the country's development effort.

One factor which has served the Kenyan programme through the difficult second half of the 1980s has been the excellent planning and organizational structure created at the launching of the programme and maintained over the years. Training of staff, development of materials, supply of means of transport and posting staff at the village level are important features of the programme.

Source: David Macharia, Director, Kenyan Literacy Programme

resources in a drive to eliminate poverty, ignorance and disease. In fact, in many literacy campaigns in Africa, the eradication of these 'three enemies of development' has been central to basic adult education programmes.

Experience suggests that literacy campaigns are successful when supported by a political ideology which genuinely aims at uplifting the people as individuals, as opposed to considering them as mere economic resources. A national policy of development and transformation is no less essential. It is unfortunate that in many developing countries factors such as the loss of earnings due to structural adjustment programmes is sapping the political will so indispensable for effective campaigns.

Identifying priority groups of learners

Another key issue when initiating and implementing literacy programmes is the selection or the identification of adult learners. Selection will depend on the local context as well as the objectives of the programme. Once learners have been selected or self-selected, the programme should be designed to take into account their specific living conditions, needs and aspirations. For example, young people who have had their primary schooling interrupted may be selected as a priority group.

For them the goal will probably be to consolidate their basic literacy and numeracy skills. A programme directed towards youth with this background will necessarily be different from a programme for illiterate peasants who have never attended school. Urban dwellers who need literacy in order to get better paid jobs or become self-employed make up another group likely to persevere in following a literacy course.

In many countries women have shown greater interest in joining literacy classes. Yet, the fact that the majority of literacy learners are women has not usually been taken into account appropriately in designing literacy programmes. The consequences of this neglect are multiple and serious. Literacy for women should be a priority, on grounds both of economic development and equity. Women are a major productive force, as well as the only reproductive force, in society. It is mainly women, already overburdened with productive and domestic work, who have used their scarce free time to attend literacy classes, even when the timing was inconvenient, the content inappropriate and the learning conditions inadequate.

However, there are many factors which interfere with their regular attendance and effective learning. The most immediate practical constraint is the lack of time. Adult women learners, especially in rural areas, are overburdened not only with

Box 3.4 'Nai Roshni' classes in Pakistan

Pakistan established a network of 'Nai Roshni' (new light) classes for young illiterates. These were aimed specifically at those who had missed primary schooling. The age range was extended to accommodate young adults, especially women, who had missed school. Daily classes of three hours duration were held in the afternoons in government primary schools. This scheme,

which is now subject to revision, condenses the normal five-year primary course into two years and aims at equipping the young people with the basic literacy and numeracy skills to qualify them for secondary education.

Source: UNESCO

child-rearing and domestic tasks such as cooking and cleaning, fetching water and firewood, but also with farming and cultivating, and undertaking other subsistence and income-generating activities (see also Chapter 5). Child care alone leaves little time and energy for projects such as literacy. Concentration on learning is obviously weakened when babies and toddlers have to be looked after during the lessons. Women generally live in relative isolation from literate environments and may have very little exposure to languages other than their mother tongue. The problem is even greater when reading and writing are taught in a second language, as is often the case in African countries. The attitudes of men may also discourage women. Men may be afraid that women who learn more than they know themselves may challenge their position of power within the family (see also Monograph II, chapter 2).

The solutions to these problems are manifold and complex. However, it is clear that improvement of the living conditions for rural women and, in particular, the use of intermediate or village technologies which make work less strenuous and time-consuming are essential. Improved cooking stoves, better agricultural implements and the installation of wells and pumps, for example, may do more to facilitate literacy in a local community than a whole library.

In national mass campaigns, as well as more locally organized literacy programmes, the degree of female learners' participation depends on community attitudes. If women are to become literate, consciousness raising on gender issues and, in particular, women's rights must be promoted. There

are no simple solutions without profound changes in the sexual division of roles and labour. The problem is not only to mobilize women. Attitudes of both men and women need to be changed to overcome fundamental constraints preventing women from full participation in literacy activities.

Making literacy functional

It is generally agreed that literacy should be 'functional' in a broad sense. Several definitions of the term have been offered over the years. At the time of the EWLP it was fashionable to see literacy as a means to improve productive skills. While in certain circumstances this may indeed be one important consequence of literacy, it proved to be too narrow and counterproductive when adopted as a standard approach. Today, making literacy functional implies placing people at the centre of their environment and providing means whereby they can develop into active participants in community life. People may need literacy skills for a variety of reasons, and the concept of functionality should be adapted to the socio-economic and cultural conditions of the learners and to the specific goals they are pursuing.

No matter how functionality of a given programme is defined, the people who have to learn and use literacy and numeracy skills must be assured that their time and effort will not be wasted. One danger is that functionality can be defined so narrowly that learners become familiar with a written vocabulary and sentence structures that are inadequate. This danger is most frequent where a

Box 3.5 Who's illiterate?

UNESCO defines a literate as one 'who can with understanding both read and write a short simple statement on his or her everyday life'. Yet, there are many people who are literate in this restricted sense, but who none the less suffer serious problems with more complex reading and writing tasks. These are the 'functionally illiterate'. To be functionally literate a person must be able to 'engage in all those activities in which literacy is required for the effective functioning of his or her group or community and also for enabling him or her to continue to use reading writing and calculation for their own and the community's development'. Functional literacy is a relative measure rather than an absolute one. The same level of skill may result in one person being considered functionally literate in one context and functionally illiterate in another. Also, 'functional literacy' calls for a broader as well as a higher level of basic skills than does 'literacy', particularly one which embraces calculations as well as reading and writing. It is, in effect, a measure of a person's capacity to cope with the practical challenges of a given environment. While

there is a tendency to associate functional illiteracy with industrialized countries and 'plain old illiteracy' with developing countries this is by no means an accurate contrast. There are many illiterates in industrialized countries and, alas, a rapidly growing number of functional illiterates in developing countries.

Yet, if we consider the matter more deeply, we are all illiterate in one way or another. We may know English, but not French or Finnish, or understand a computer language. We may be able to read a page from a novel with joy, but be left in puzzlement before one from a statistics book. We may understand a map of our local bus system, but be left bewildered by a diagram of the electrical circuits within our own home. The dichotomy – 'literate' versus 'illiterate' – does not suffice to deal with skill levels that run from zero to Shakespeare and vary from utter confusion in one sphere to easy mastery in another. Illiteracy is, thus, not a completely foreign concept to any of us.

Adapted from: ILY: Year of Opportunity, Paris, UNESCO

literacy programme is added on to an existing development project. More commonly, attempts to make programmes 'functional' result in overloading them. The learners are expected to learn too many things in too short a time. Several recent studies demonstrate that people who enrol in literacy classes are, in the first instance, interested in learning how to read, write and calculate, so that they no longer have to rely on somebody else to do these things for them. If literacy courses include too many other components, such as skill training, income-generating schemes and other subjects, the programme becomes diffuse or excessively protracted. It also complicates the training of teachers and increases the quantities of materials and supplies which are required. This is not to argue that literacy instruction should not be related to issues of interest to the learners. On the contrary, textbooks and discussions should be directly relevant to their preoccupations, not only to technical matters, but also to such issues as civic rights, producer and consumer prices, primary health care and nu-

trition. In the post-literacy phase, greater attention can be given to practical activities and specialized training.

Improving quality

Although few relevant statistics are available, it is well-known that in many countries only a small proportion of the adult learners reach a level of literacy that they can sustain. This is due, in part, to the problems of motivation mentioned earlier. Often, however, the poor quality and unsatisfactory conditions of instruction add to the problem. A common finding is that adults will at first enrol enthusiastically in literacy classes and then rapidly become disappointed and drop out.

The quality of the teaching and learning in literacy classes is therefore very important. Care should be taken in the choice of the medium of instruction, the provision of basic teaching tools, and the production and distribution of learning materials. The choice of language, in particular,

Box 3.6 The campaign for literacy among adults in Spain: the test of experience

UNESCO's definition of functional literacy stresses that the reason for teaching individuals to read and write extends beyond the simple mastery of basic skills. It maintains that literacy is conditioned to the extent or level of basic training demanded by the community in which an individual lives. Thus, in order to describe someone as being literate, we must first define the framework within which this individual functions.

This relative quality becomes a dynamic concept in the Spanish social context, since the basic level of training needed for social integration has been increasing rapidly since the establishment of democracy and, above all, following entry into the European Community. As of 1 January 1993, anyone from the twelve Member Countries of the European Community will be entitled to exercise their profession freely in any one of them, within, of course, the confines of their technical-professional training and qualifications.

This coming change within the socio-economic panorama calls for a new approach to literacy in Spain, where literacy and adult education as a whole extend beyond the domain of basic learning. Surveys, in the early 1980s, showed the continuing presence of an alarming rate of absolute and functional illiteracy within the Spanish adult population.

The educational authorities support literacy programmes, considering them an integral part of development and coupling them with individual training on professional, social and cultural levels. Going beyond mastery of reading, writing and arithmetic, they promote post-literacy with on-going educational programmes, taking full benefit of all available resources in the area, based on the experiences and needs of each group and individual, along with the most appropriate

didactic and methodological resources and appropriate training for teachers.

Priority support is given to adult education and literacy programmes that promote further development in underprivileged areas, or those most lacking in training programmes (Extremadura, Castellana-La Mancha, etc.). This support is based on the conviction that literacy aids the processes of development at a local and regional level, as well as the individual's capacity for work, and the adjustment of individuals or groups who are victims of discrimination or of depressed situations.

Aware that the needs cannot be met by direct action alone, the Ministry of Education and Science provides annual financial aid to agencies of social action, to local authorities and regional governments, as well as to non-governmental organizations, unions and others who support literacy programmes within their areas of action.

Within the various programmes for the groups which suffer most from discrimination, it should be pointed out that, along with the Equal Opportunities Plan for Women, an effort has been made to intensify literacy and basic training programmes for women, who have traditionally suffered a lack of education. Support has also been given to literacy programmes in prisons, by means of joint collaboration between the Ministry of Education and Science and the Ministry of Justice. Action is also being taken to assist ethnic minorities and marginal and disadvantaged groups including the elderly and the physically and mentally handicapped.

Adapted from: Ministry of Education and Science, Spain

has to be given careful attention. Issues of language choice are a general problem in planning education in developing countries, but they are of special importance for adult literacy programmes which, because of their limited duration, provide little opportunity for learning a new language in addition to learning literacy (See also Chapter 2). However, the most important quality factor is almost certainly the teaching approach being used. A superior and patronizing attitude discourages

interest, while a democratic, open and involved attitude, treating the learners on a level with the teacher, creates an atmosphere of confidence and is found to have a positive influence on attendance and results. Experience shows that, in order to achieve and maintain such participatory teaching methods, initial teacher training must be supported with a network of professional and organizational services, and be supplemented by periodic in-service training.

Sustaining and developing newly acquired skills

The knowledge and skills acquired in the literacy classes may rapidly fade away if they are not properly sustained and strengthened thereafter. This involves, first of all, the creation of opportunities for further learning, either through continuing non-formal education or through links with formal education. Daily opportunities for applying recently acquired literacy skills must also be available. The responsibility for this extends beyond the organizers of literacy and post-literacy programmes and rests upon many others, including public administrators and various development agents. For example, extension services, health clinics and postal services can actively assist in building up a favourable environment for literacy use. It is also extremely important to promote the use of the written word in rural communities through libraries, rural newspapers, etc. In fact, in order to stimulate awareness of the need for literacy, the introduction of easy-to-read materials may precede the literacy programme itself. The available reading material should be in the same language as that used for literacy instruction. Even though the use of the mother tongue (or a language in which the learner is fluent) is best for learning, it is still not worthwhile to teach literacy in this language if there is little written material in it, or if there is no organized programme for facilitating the transition from this language to another of wider usage.

Informal get-togethers of participants should be encouraged after the sessions are over. Social workers, extension workers, health visitors and others active in the community should be informed whenever literacy classes are arranged for a particular community. They should encourage enrolment and help to sustain achievement when classes have ceased. The sustaining of literacy skills is frequently more difficult for women than for men. Available reading materials are often not designed for women's interests and needs. Women may also have less access to reading material and less time to read it. A study of the effects of literacy in Kenya found that women tend to use their newly acquired literacy less frequently than men. The dif-

ference was particularly marked in the case of newspaper reading. This was partly because women generally had less fluency in Kiswahili, the language of the newspapers. In the case of calculation, the differences between the sexes were less pronounced, probably as a consequence of the involvement of all segments of Kenyan society in the market economy.

Post-literacy programmes should form part of lifelong education. In Thailand, for example, use is made of radio, television and correspondence education. Existing learning networks, such as the temple schools, are enriched through the provision of reading materials, including newspapers, and through library services. Community-based continuing education is being developed. Programmes for women are encouraging the newly-literates to develop materials themselves and not to rely only on those prepared for them – often by older women with different interests and pre-occupations.

Ultimately, the real issue is the development of a literate and literacy-sustaining society. This implies a profound change in the information needs people have and the manner in which they seek to satisfy them (Ryan, 1985).

International co-operation

National authorities are responsible for promoting literacy. Without firm political will supported by popular demand for literacy and a pervasive social commitment, no significant results can be expected. However, international co-operation can help considerably in at least three complementary areas: aid, advocacy, and the production and exchange of information.

Aid

To date, the financial commitment of national governments and of the international donor community for the purpose of adult literacy has been minimal. In most countries, a massive reduction of illiteracy will be possible only if substantial additional resources are mobilized. Given the critical educational and economic situation prevailing in most of the countries where literacy rates are low,

Box 3.7 The consequences of literacy in Zimbabwe

The consequences of literacy have been remarkable. Without a single exception, the 146 adult learners interviewed, both men and women, the quite young and the very old, claimed that literacy has improved their lives, irrespective of the level of literacy attained and the subsequent context of its use. Learners' minds 'opened up' and they could 'do things without help'. 'Everything improved'; 'everything became up-to-date'.

A surge of confidence in oneself was universal and seemed to be intoxicating. Learners had indeed emerged

from 'a culture of silence'. They had found their voices and their voices were often poignant. The learners said that they felt free, unafraid, not shy, not inferior. They felt transformed. If not a 'new technology of intellect', there certainly was a new 'social reinvention of oneself'. Literacy had become the great equalizer of men and women.

Source: field notes of H. S. Bhola, Rural Zimbabwe, 1989

internal financing will not suffice and external aid will be needed.

Advocacy

In addition, serious efforts will be required to generate public awareness at all levels of the importance of providing basic education for all, including literacy for adults. People will have to be convinced that in spite of the economic recession and severe financial constraints, it is possible to achieve a massive reduction of illiteracy by the end of the century. International backing should help governments to create the necessary popular support for achieving their national basic education goals.

The main task for the 1990s is to keep up the momentum generated during International Literacy Year and sustain public interest in literacy. This can only be done through a concerted effort by various governmental and non-governmental organizations showing a common commitment to the creation of a literate world. The alliances created for the International Literacy Year and around the World Conference on Education for All should provide a framework for effective co-operation.

Generating and exchanging information

A well-stocked data base on literacy activities is a valuable technical prerequisite for developing viable national strategies for adult literacy and for adequately monitoring their implementation. In most countries no data on out-of-school basic edu-

cation projects are systematically collected. Often even simple statistics, such as the number of adults taking part in literacy classes, are not available or are not reliable. When it comes to more complex information about the way different literacy courses operate and the results they achieve, the situation is even more unsatisfactory. New courses have to be based on guesses and hypotheses rather than on empirical evidence. There is, therefore, an urgent need to build up an overall data base on adult literacy in each country.

International agencies can play an important role in this respect by directly supporting the establishment or reinforcement of the technical services that are needed to collect and analyse data on adult literacy. Furthermore, because different countries are often struggling with the same kind of problems at the same time, there is a need to stimulate the exchange of information and experience among them. But sharing experience will be more beneficial if it is based on systematic stock-taking within countries, which implies a minimum of data analysis and research. Unfortunately this stocktaking tends to be neglected in periods of austerity, in spite of its obvious importance for planning and implementing literacy campaigns. International agencies are well placed to contribute to the collection and exchange of information. The educational information and research networks already functioning in different regions of the world could help in this task, if strengthened in appropriate ways.

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4. The Impact of Technological Change on Needs for Basic Knowledge and Skills

Technological dependence lies at the heart of all dependence. Therefore, we in the developing countries should evolve a technological capacity appropriate to our own conditions; select technologies and adapt them to our economic and social infrastructures in the context of our own culture and way of life.

Dr. Rodrigo Borja, President of Ecuador

Lack of understanding of technological methods makes one more and more dependent on others in daily life, narrows employment possibilities and increases the potentially harmful effects of the unrestrained applications of technology

Learning To Be - UNESCO

The challenges presented by science and technology to education

Neither science nor technology is new to humanity: technology is as old as civilization, and science and mathematics have roots that can be traced to early Egyptian, Greek, Chinese, Arabic and other cultures. However, never before in the history of the world has the quality of people's lives been tied so directly to science and technology. To understand their real impact, it is necessary to view them within a broad political and socio-economic context.

While contributing to development in all fields of human endeavour, science and technology also present enormous challenges to modern societies. Economic development engendered by technological change is not always matched by social de-

velopment, at least not for all members of society. Industrialization is usually accompanied by massive migration from rural areas towards cities. Yet, conversion to modern methods of production involving automation reduces the demand for certain categories of labour, thereby frustrating the hopes of many who seek employment and sowing the seeds of social unrest.

However, there is no doubting the link between overall economic well-being, and scientific and technological development. For a country to become truly independent, it needs to be in a position to understand technology, put it into appropriate use and develop it to meet its own needs. At the same time, the global impact on countries is often uneven and can have negative consequences. The gap between rich and poor among the countries of the world is widening; even within the same country differences between rich and poor, urban and rural, may be exacerbated. In the poorest rural areas in the developing world, technological change can make even worse the economic imbalances caused by distribution and equity problems based on existing social relations. Additional problems arise when certain traditional cultures cannot assimilate change and retain their fundamental living principles and cultural values.

These problems need to be dealt with internationally and at the national and local levels. To accomplish this, it is imperative to bring into being a world community of citizens 'literate' in science and technology. Education must prepare generations of young people equipped to confront the problems posed by the advance of science and

technology, and able to recognize which applications are likely to be beneficial and which are potentially harmful.

Exciting discoveries and technological developments that are a tribute to human inventiveness are taking place daily. Yet more than one-third of the world's adults and children have no access to the knowledge, skills and technologies that can improve the quality of their lives and help them shape and adapt better to social and cultural change. This can only change if scientific and technological literacy and numeracy are a basic part of everyone's education.

Scientific and technological literacy – education for change

In order to understand the impact on basic education of scientific and technological changes, it is useful: to examine the nature of science and technology as human activities aimed at individual and collective development; to consider the rationale for broadening basic education to include scientific and technological literacy; and to define those areas of scientific and technological knowledge and skills which are essential for basic education.

Science and technology are interrelated but contrasting activities. The role of science is essentially a quest for knowledge – a process of finding out – of exploring the world. It involves observing, posing questions, suggesting explanations for events and phenomena, predicting, finding patterns and relationships, as well as manipulating materials and equipment effectively – to name but a few of the basic processes. These are things that children love doing, and the earlier the age at which they are initiated into such processes the better.

The role of technology is to use and apply knowledge in the service of humanity. Today, it is more and more concerned with the application of scientific knowledge to the general purpose of fulfilling an individual, community or national need. Thus aeroplanes, insecticides, preserved food, computers, wine and bio-genetically produced vaccines are all direct products of technology. The know-how and creative processes (including designing) which utilize tools, resources and systems

to solve problems, to enhance control over the natural and man-made environment, to alter the human condition – all are characteristics of technology.

Although the development of technology follows an autonomous path that does not always coincide with the pace or direction of the progress of science, there is no doubt that each interests and influences the other. Science progresses through the use of technological appliances such as telescopes and microscopes. Technology is changed as a consequence of the impact of scientific discoveries and theories, as in the field of semi-conductors and transistors.

Numeracy is an essential complement to scientific and technological literacy. In different cultural and economic contexts, numeracy takes on different shades of meaning. In general, it is not just a matter of being able to do sums and use formulae but also – and especially – of being able to use such skills to solve problems in everyday life. It involves interpretation: interpretation of timetables and schedules, of measuring instruments of various kinds, of representations which may take the form of plans and elevations, of circuit diagrams or of graphs which commonly feature in printed media. In societies where modern technological tools such as calculators and microcomputers are in general use in the work place, they should also be used in schools. If simpler, non-electronic tools, such as the abacus, are used in the work place, then their use should also be taught. Otherwise, pupils will be deprived of appropriate training and become sceptical of the relevance of school to their later life and work.

The world in which the children and adults live is the subject matter for scientific and technological literacy and numeracy. An international conference held in Bangalore in 1985 on 'Science and technology education and future human needs' (Lewis, 1987) identified the following basic science and technology topic areas: health; food and agriculture; energy; land, water and mineral resources; industry and technology; the environment; information transfer; and ethics and social responsibilities.

Clearly, knowledge in these areas has the poten-

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Papers used in the preparation of this chapter and available at the Conference included the following:

HRD Impacts of Technological Change: Implications for Basic Learning Needs by John E. S. Lawrence
Towards Learning to Learn by A. K. Jalaluddin
Technical Change, Skills and Implications for Basic Learning, Technical Discussion Paper No 49 (ILO) by Claudio de Moura Castro, Torkell Alfthan and João Batista Oliveira
Scientific and Technological Literacy: Education for Change by Jane Bowyer

tial for improving traditional ways of carrying out economic or life-sustaining activities. This knowledge can also bring new possibilities for livelihood and offer the prospects for improved community life. The topics, without exception, are of universal relevance, but each country must develop curricula suited to its own particular needs. Science and technology education should be integrated into basic education; the skills of reading, writing, and calculating, for example, can be learnt as well in the context of science and technology as in more conventional contexts.

An international study (UNESCO, 1986) was undertaken to determine the degree to which science, mathematics and technology are currently taught in schools. Data from almost 100 countries from all parts of the world gave a global picture from which it has been possible to begin to identify issues for consideration for future curriculum planning.

Science. It appears that although science is firmly entrenched in secondary school curricula worldwide, it is much less prevalent in the early years of schooling. While in many countries the aims of primary schooling include nurturing scientific concepts, this is difficult to achieve because most primary school teachers have a weak background

in science, lacking exposure to the concepts and processes of science in their own education and lacking both pre-service and in-service training in science-teaching methods. This is extremely serious because for many children, particularly in developing countries, primary education is the only formal education they are likely to receive. It is, therefore, important for any science course to be closely related to the local environment of the young child.

Mathematics and numeracy. The survey indicates that mathematics is a component of basic education in all parts of the world, first as arithmetic in primary school, then as mathematics in the secondary school. Most governments, though, are not satisfied with their programmes. Children who attend school are expected to do their sums, but few learn how to apply these skills to solving problems in their everyday lives. As adults, relatively few make use of the computational skills learned in school or have even a basic working knowledge of statistics.

Technology. The most surprising finding from the survey relates to the place of technology in school curricula. Universally, region by region, country by country, it appears that technology education is almost entirely absent. One difficulty is to

attach an agreed meaning to the term. There is no precedent for teaching it and, as a subject area, it is little understood, often being confused with technical education such as metal-work, woodwork or needlework. Technical skills are, of course, needed in a technological enterprise, but if the role of technology is to apply existing knowledge to solve human problems, it is evident that education in technology should cultivate problem-solving and creative processes, such as designing. It is important, too, for it to cultivate an entrepreneurial approach to invention and 'creative' problem solving in practical ways. For many learners, this would provide a key to survival through employment in the informal sector and in small-scale enterprises.

An extensive body of literature is now available concerning the status of women in the workplace. Research is leading to progress in understanding some of the factors associated with the lack of participation of women in science and technology at all levels and in most societies. The causes of disparities between the sexes in knowledge and professional participation in science and technology are complex. No simple cause-effect relationship explains the phenomena. However, causal factors have been classified under three headings: the masculine image of science, the reinforcement of sex-linked personality characteristics, and the conventional identification of occupations and hobbies as either masculine or feminine.

Prevailing societal attitudes with regard to male domination of science and technology get constant reinforcement from parents, teachers and the career world. Research has established that these attitudes are formed at a very early age. By the age of 10, differences of attitudes of most boys and girls are already substantial. Even if girls are convinced that science and mathematics are useful and important for their future, many are equally convinced that they cannot learn them well. While in some countries, notably in Eastern Europe, gender disparities have been less pronounced, it remains generally true that a large portion of the population is still precluded from active participation in science and technology. This is a severe loss both for the individuals and for society.

In most developing countries, women partici-

pate in agricultural activities in as large numbers as men. Nevertheless, the participation of women in agricultural education and extension services and in basic education related to such programmes is negligible. As a result, women in rural areas are unaware of modern techniques and technological innovations and are not trained to use machinery. In some countries special efforts are now being made to facilitate the participation of women in skill development programmes and rural industries, and to link these programmes with basic education and literacy. However, progress in this direction has been slow.

Human resources development and technological change: implications for basic learning needs

The impacts of new technology on the labour market are usually discussed in relation to two issues: (i) the effects on employment and unemployment, and (ii) the skills requirements of jobs and whether skills are upgraded or downgraded by new technologies. In general, it does not follow that new processes necessarily imply the loss of jobs. More often they are accompanied by changes in the balance of skill requirements in the economy. The Organisation for Economic Co-operation and Development (OECD) has stated that

the major effects of new technologies are reflected less in increases or decreases in levels of total employment than in changes in the occupational structure and skills requirements of the workforce. (OECD, 1986)

Although evidence on the subject of skills requirements is insufficient to come to firm conclusions, it does seem that where workers have broad general skills, managers may enlarge the scope and content of the individual worker's job. If, on the other hand, workers are poorly educated and trained, and therefore less flexible, they are unable to learn the new and multiple skills required to work with the new technology and may also lose the traditional skills they possess as these skills become obsolete. As the nature of work changes, the direction of change depends on how work is organized. The

basic education and training of the workforce may influence decisions in this area.

Human resources development is a major component in strategies designed to improve the ability of countries to take advantage of technologies that are imported or home made. Basic education is the foundation upon which are built the skills and knowledge needed to move into the workforce or to continue with further education. However, the ever changing employment requirements and the abilities called for in an evolving world suggest a need for continuous re-assessment of what should constitute basic learning.

Because the process of technological change is little understood, it is difficult to foresee the abilities that new technologies will require and, consequently, difficult to plan realistically for them. Even in industrialized countries with advanced technical capacity, the ability to diagnose major technological trends in industry is very weak. There is both a lack of detailed information about existing working practices as well as proprietary protection around new technologies in the making and their application, especially defence related technologies. The consequence is that prescriptions for education and training for the future can at present only be speculative. Greater co-operation between public and private sectors in this regard could lead to considerable innovation.

In many developing countries, the ability to diagnose manpower needs is lacking. Information about the labour market may be rudimentary, and occupational data are often incomplete, out of date and described in such broad terms that usable information about the skills needed is absent. Yet in both industrialized and developing countries, education and training systems are regularly censured for their failure to respond to shifting demands for workplace skills. An essential first step is to improve the gathering and analysis of information on occupations and skills requirements.

What seems to be needed is a 'gravitational movement' of the education system to become more aware of and sensitive to the ways in which changes occur not only in the requirements of one particular occupation, but in whole clusters of skills required for general competency across many types

of job. This approach blurs arbitrary distinctions between 'academic' and 'general' or 'vocational' education, and rather perceives all education as acquisition of the knowledge and skills needed to function effectively and make 'value-added' contributions to self, group, community and society. It is important, however, for acquisition of the necessary skills to be accompanied by access to adequate opportunities to apply them. Policies designed to enhance human capability should, therefore, seek both to acquire and apply the knowledge and the skills which will improve the quality of life.

Technical skills and implications for the learning process

The pace of scientific discovery and application of technological findings to commercial use is accelerating. However, by creating new products and transforming production processes, technological innovation also changes the nature of work, of responsibilities and of power relationships in communities, agencies and firms. As a result, workers' skills and the need for education and training are transformed.

New technologies affect workers differently. Some work directly with new technologies, and their jobs and the skills and training they need are transformed, sometimes dramatically. While the large majority of people do not necessarily work directly with new technologies they, too, live and act in a society where technological and scientific innovation increasingly pervades almost every aspect of daily life, making the possession of certain basic technological knowledge and related social skills indispensable for all.

At the heart of this challenge is the need to improve the quality of what is taught in basic education. It is essential to teach the basic skills so that they become accepted as skills which are used in everyday life, not just exercises and packaged formulae learned in school. This will have to be a dynamic process involving much closer links between the school and the workplace.

Communication skills need to reach beyond speaking, reading and writing. Comprehension is

vital, though hard to teach. For example, industrial enterprises use more and more written instructions both in communicating with their personnel and in describing work processes. Even machines that are simple to use have complicated manuals to which reference must be made from time to time. Similarly, in everyday life, instructions relating to the use of video recorders, digital watches, etc., require considerable language comprehension as well as perceptual and cognitive skills related to spatial orientation or component inter-relationships. The correct use of medication of all kinds requires the ability to understand and follow correctly a set of instructions.

A very significant share of classroom time is spent on mathematics and associated skills. However, the transposition of basic mathematics concepts into real life problems is not easily achieved. A recent study was conducted with some vocational students in the city of Recife (Brazil). The students learned the concepts and methods of calculating the volume of simple geometrical forms. They also engaged in practical projects in the workshops. In one of these, students were expected to build beds and had to order the wood in the exact quantity required. Given the measurements of the parts of each bed, they had to calculate the volume of each and add them to find the total lumber requirements in cubic metres. In fact, this was a direct application of the formula they had learned in school. However, the students had difficulty in connecting the two sets of problems. They could not see the similarities between the schoolbook reasoning and what they were being asked to do in the workshop. A volume formula is learnt in school. A quantity of lumber is handled in a workshop. In the students' minds the two were not related! The concepts involved in comparing areas and volumes were known to the scholars of ancient Greece; today they need also to be mastered and used across the breadth of the labour force. Modern society requires more and more people to be conversant with such simple exercises in abstraction and able to apply them in concrete situations.

Dealing with machines is one of the most common requirements of modern societies. Rich and

poor alike have to operate machines at home and at work. If mishandled and improperly regulated, machines break down. Modern machines, in general, have many options that optimize their performance for different situations. Operators who cannot follow the manuals are handicapped, although this is not necessarily their fault. Manuals are notoriously bad at providing information and guidance to the user who is unfamiliar with the workings of the machine. Manual writing is a neglected skill.

Computers have become ubiquitous machines even in many small enterprises, not only as units for information processing but also as controllers of all kinds of processes. They facilitate life and in many respects require only simple skills. But it takes very little to lose an important document or set of figures or to get stuck. While physical force now is less necessary and many tedious functions have been eliminated or greatly simplified, some computerized operations have become more complicated and errors have greater repercussions. Consequently, the skill of the operator is less important than the skill of the designer, who must be able to use the tools of computer-assisted design (CAD) and of computer-assisted management (CAM) to develop machines and processes which can control themselves and perceive and correct errors.

Information is power, so it is said. Those who deal with information and documentation are acutely aware of the explosion in knowledge. The volume of written information doubles every couple of decades. There are now more than 200,000 scientific journals in the world, and scientists and engineers have to learn how to deal with this glut of information. At a more pedestrian level, people in industrialized countries are bombarded with 'news', ideas, publicity and miscellaneous facts each day by the media, firms and interest groups.

The impact of new technologies on basic learning calls for an updating and reinterpretation of the school curriculum. If we understand the curriculum in its broad sense as including language, mathematics, science, etc., then this same curriculum is needed today in the work environment to a greater extent than ever before. Reading written

instructions and production schedules or filling in forms have become tasks that every worker has to do. He or she needs to master more than one production skill, with depth and flexibility, and also have creative, analytical and planning skills, coupled with the ability to cope with problems of varying kinds.

For a society to provide schooling for all children is no easy task, but securing a minimum mastery of conventional contents is even more difficult. One challenge today is to develop teaching methods and strategies that indeed transform school learning into everyday skills. The basic skills for survival in modern societies are rooted in those elusive but ageless factors that make for excellence in education.

Towards learning to learn: educational responses to technological change

The present systems of education in many developing countries are characterized by low retention of pupils, poor quality of education and inherent disparities in terms of access and conditions of success of pupils. When the global changes in technology are seen against the backdrop of illiteracy and underdevelopment, the problems facing these countries are enormously compounded.

In parts of Asia, basic education for youth and adults has become an area of major concern, not only in those countries where literacy rates are very low, as in Afghanistan, Bangladesh, India, Nepal and Pakistan, but also in countries with a higher level of literacy where the interface between education and development is still not fully developed, such as Sri Lanka, the Philippines and Indonesia. Similar situations exist in China and in the Republic of Korea, where there are renewed attempts to link continuing, non-formal education of adults with new technological innovations.

In recent years, countries in Asia and the Pacific have been responding to these challenges essentially by incorporating new content areas related to science, technology, population and the environment. There have been significant initiatives in some countries to give an activity orientation to basic education and to relate content areas such as

science, mathematics and social studies to practical problems in the community concerned with the environment, agriculture, health, and other contemporary issues of development. It is now widely recognized that the most effective and relevant learning takes place through the process of solving problems that occur in, or are immediately 'connectable' to, the life of the learner, rather than in contrived situations in a classroom. There is a fundamental need for 'doing' to become part of learning – otherwise the learning will not be brought into effective action.

The term 'process-based' describes learning designed to be consistent with the spirit and character of scientific inquiry. It also projects a more human view of science. Such learning consists of experiences that engage the thinking, imagination and interest of learners as well as leading them to an understanding of key concepts. It is an approach that is appropriate not only in the learning of science and mathematics, but also in language learning and social studies. Process-based learning includes starting with questions about phenomena rather than with answers to be learned. It engages students actively in the collection and use of evidence, the formulation of hypotheses and the design of investigations and processes. It provides students with direct practical experience with mechanical, electronic and optical tools, placing a premium on their curiosity and creativity, and frequently using a student team approach to learning.

A second principle relevant to the notion of 'learning to learn' relates to the ideas that children develop about natural phenomena well before they are taught science and mathematics in school. In some cases, these ideas are in keeping with what is to be taught, but often there are significant differences between children's notions and the science they will meet in school. For example, it is very common for people to believe that plants can only get their energy for growth from the soil. Even when they observe plants growing only in air and water, this idea is not necessarily changed. Similarly, at a very early age a child will have learnt from experience that an effort has to be made to keep an object moving on the floor or across a table. Understandably, many years later in adult life, the

Box 4.1 Satellite Instructional Television Experiment (SITE)

In 1975-76, India launched a Satellite Instructional Television Experiment, using the American satellite ATS-6. Under the experiment, instructional television programmes specially designed for young and adult viewers were beamed to 2,400 villages spread over six states. An hour-and-a-half long morning transmission was designed for school children and a two-and-a-half hour transmission in the evening for adults. The teachers located in these villages switched on their school or community sets at the specified times and conducted pre- and post-telecast discussions for which they were trained and provided with written material. While environment-based general science was the central theme in the morning transmission, agriculture, animal husbandry, health and family planning topics were chosen for the evening transmission for adult learners.

An 'echo method' of training was adopted to provide in-service training of 2,400 primary school teachers as a part of the experiment. As a first step, 40 resource persons were trained from each state. These resource persons, in turn, trained 10 teacher-monitors each. This gave a total of 400 teacher-monitors. Each was responsible for training about 6 to 10 teachers from the neighbouring villages. A multimedia package was used for the training of teachers at all stages.

The experiment brought home many lessons.

Well-conceived co-ordination between the many authorities and agencies that must co-operate to make a success of such a programme is vital.

Close harmony between the hardware and the software is necessary. The technological infrastructure cannot be an end in itself: it is only a means to an end.

There must be multi-disciplinary teams to ensure that the learning messages are properly constructed, effectively delivered and supported, and that appropriate

links with users are established so that the programmes are concurrently evaluated, adjusted and improved.

Instructional broadcasts must be sensitive to local custom in terms of language and idiom, dress and social or agro-climatic environment, so that the local audience can identify itself with situations being portrayed. The error of beaming centrally-produced paddy cultivation programmes to wheat growing locations, as happened, can only confuse and destroy the credibility of the medium.

The programmes must be simple and not overloaded with information, and should be entertaining rather than overly didactic. Participatory formats are clearly superior to long monologues by 'experts' or 'leaders'.

Carefully prepared studio sets appear theatrical and contrived in contrast with live, outdoor programmes, with real people enacting their daily lives and experiences in real situations so that the local audience can recognise and share them.

Simple, portable equipment with facilities for quick movement, editing and processing is needed so as to enhance immediacy and relevance. Such low-gauge, low-cost equipment can also be handled by 'people' rather than 'experts' or 'technicians', thus helping to demystify the medium and break the rigid barriers that sometimes tend to divide the hardware and the software people.

SITE was very successful in teacher training and training the trainers – a role that the electronic media is particularly well-suited to play.

Subsequent evaluation established that whereas the television set nowhere displaced the extension worker, the reach and effectiveness of the extension worker were enhanced with the aid of farm broadcasting.

Adapted from: *Towards Learning to Learn* by A. K. Jalaluddin

same child will believe that a force has to act on a body to keep it in motion. Friction is felt, but is not recognized as a force. It is important to begin with students' prior ideas as the starting point in learning; this helps to ensure that learning becomes really effective, as initial ideas change and develop.

Even the most technologically literate citizens do not understand all technologies. There are some

that each person uses and understands, such as simple tools; others that he or she uses but does not understand, such as the motor car or the radio; and indeed, there may be still others that are understood, but not used, e.g. musical instruments. It is important for children to be presented with simple technology related to familiar objects. Children may first be introduced to concepts and

Box 4.2 A secondary school science project in Zimbabwe

The Zimbabwe Science Project (Zim-Sci) came into operation in 1981 as an emergency programme due to sudden expansion in secondary school enrolments after independence. It constituted a response to a lack of science teaching facilities and a shortage of qualified teachers. The project covers the first four years of secondary science education, emphasizing a practical approach. Details of experiments to be undertaken are provided in study guides; these together with the basic equipment kit are so designed that pupils can perform experiments themselves. The nature of the materials in the study guides is such that it promotes and sustains a classroom environment in which questioning, problem-solving and critical examination of information are integral elements. The Zim-Sci materials underwent re-

views and revision in the light of comments from teachers involved and the evaluation studies carried out by internal and external experts. The establishment of a 'marketing system' within the ministry of education was an important step towards ensuring the supply of equipment. In stimulating interest in Zim-Sci materials and equipment within Zimbabwe and in neighbouring countries, the marketing system plays a paramount role in promoting sub-regional co-operation among countries in Africa, especially those facing similar educational problems.

Education and training policies in sub-Saharan Africa,
UNESCO, 1987

mathematical ideas associated with simple tools and instruments, such as levers, balances, thermometers and voltmeters, followed by learning how more complicated machines can be built from these simple parts.

Another good approach is to start from children's particular interests. One child showed great admiration for the vacuum flask, regarding it as an incredibly wonderful invention. The child gave a very sensible explanation: 'Of course it is a great invention, how does it know when it is winter, and must keep my tea hot, and when it is summer, and must keep my lemonade cold?' A good teacher would use this observation as a starting point for a series of activities leading to concepts of heat conduction and thermal insulation (Joel, 1990). The teaching of technology should lead children and adults alike to 'operacy' – the ability to operate effectively in the technological world in which they live and to avoid suffering as a result of the misuse of sophisticated appliances.

How to help students transfer to real-life situations the formal knowledge they acquire at school is a major pedagogical task. There are no magic paths or easy solutions to ensure effective teaching of technology and science. A rich heritage of learning strategies and experimental results is now avail-

able, but the task of bringing them into classrooms and workshops on a larger scale has not yet been fully mastered. Where there are inspired teachers, the problem has largely been solved. But one cannot count on millions of inspired teachers, especially in the classrooms that cater for the less privileged members of society. There is a glut of new technologies, strategies, gadgets, materials and equipment available for classroom use. New approaches may work on a pilot scale, but which can be replicated on a large scale? Which are affordable, but robust enough to withstand the hardship of poor schools? One solution would be to collect examples of good practice, write them up and disseminate them widely with an assessment of why they have been found effective.

Teachers are the key to an effective implementation of the curriculum, so far as it relates to basic knowledge and its associated skills. Well qualified and highly motivated teachers are in the minority in most parts of the world. This situation does not help the introduction of primary science, numeracy and technology into the basic education curriculum, nor the shift to process-based learning. A priority issue for teacher education is to reconceptualize the time frame for the preparation of teachers. Are conventional arrangements for the initial

Box 4.3 The Radio Science Project, Papua New Guinea

The Radio Science Project addresses two of the most important educational issues in Papua New Guinea today: quality and efficiency. At a time when the standards of education are perceived to be declining, the project aims to develop a method for providing systematic, high quality instruction in primary science – a subject for which many teachers consider themselves inadequately prepared. Another aim of the project is to maximise the cost-effectiveness of distance education in Papua New Guinea – a critical goal because of severe budget cuts and rising enrolment rates.

The radio programmes are based on the official community (rural) school curriculum in science, plus aspects of health, agriculture and community life. The lessons teach the core science curriculum; they are not designed as supplementary material. The radio science lessons for grade 4 were broadcast in 1988, grade 5 in 1989, and grade 6 in 1990. Each week, for thirty weeks, children have two lessons of thirty minutes duration. Each lesson consists of a twenty minute radio broadcast

and a ten minute post-broadcast period. During the broadcast, the classroom teacher participates in a supportive role. After the radio portion of the lesson, the teacher conducts specific complementary post-broadcast activities, as outlined in a teacher's guide. Both the broadcast and the post-broadcast portions of the lesson are supported by worksheets and science materials.

The radio science lessons are based on the concept of interactive radio instruction that calls for maximum student participation during the broadcasts. The lessons are presented in a lively and engaging fashion that holds the children's attention and stimulates them to participate in the lessons. The scripts for the lessons are written specifically for the children using Papua New Guinean writers, actors, sound effects and examples; however, adaptation of these lessons for use in other countries should not be difficult.

Source: United States Agency for International Development

and subsequent training of teachers adequate? A prescribed one or two-year pre-service training programme followed up by occasional in-service courses will not be adequate preparation for teaching basic education with a changing curriculum. Teacher development needs to be considered on a continuum, beginning with the student teacher and ending only when the teacher retires.

In some countries teachers are becoming involved in curriculum development for basic education, including development of their own teaching materials. Projects to encourage such involvement are already under way – for example a UNDP-supported project in Guatemala. If the curriculum becomes 'fixed' or static, if it is confined by rigid syllabuses and rigid examinations, the notion of education for change will inevitably wither. The curriculum and teaching methods must evolve with the changing society, and it is the teacher in the community who needs to play a key role in bringing about these changes.

The introduction of technology education into

basic education is not easy. Developing the actual content is but one aspect of the problem; there is also the management of the practical activities and the design of learning processes that are relevant and appropriate. Teachers need support. In particular they need assistance in selecting hardware and software – and in developing materials to make their work more effective. They also need opportunities to communicate among themselves, both within the school and also on a wider basis through teachers' clubs and professional associations.

Policy considerations concern teacher recruitment, design of teacher-preparation programmes, whether to have 'specialist' teachers for science and technology or 'generalists' at the primary level, how to train the teacher educators and mechanisms to provide for continuing teacher education. Many other issues must be considered in re-conceptualizing teacher education to meet adequately the needs of basic education in a changing society. The creative use of community resources is a key issue: the use of community buildings, local tech-

nology work sites, shared teacher-worker expertise. Blending formal and non-formal learning is another: the use of museums, zoos, botanical gardens and other institutions should not be overlooked. Teachers can help relate learning within school to non-formal activities which can greatly enhance pupils' understanding.

Some examples of broadening the scope of basic education to extend it to real life situations

The Framework for Action to Meet Basic Learning Needs (see Appendix) identifies four components as necessities for broadening the scope of basic education so that the diversity, complexity and changing nature of basic learning needs of children and adults are met. Science and technology can make substantial contributions in terms of attitudes, knowledge and skills in each of these areas:

(i) *Learning begins at birth. Therefore, early child care and initial education are important. These can be provided through arrangements involving families, communities, or institutional programmes, as appropriate.*

For example, in India a non-formal education project for rural women was started because of problems associated with high infant mortality rates. Early marriages (from 11 years of age) and early pregnancies (average age of 14 years) resulted in a 60 per cent infant mortality rate for the first child. The practices and beliefs associated with this problem are deeply rooted in tradition and the circumstance of rural life. Traditional science teaching alone could not solve the problem. It required the combination of a practical medical treatment/instruction programme, an education programme in basic health, nutrition, infant care and child development, and a supplementary feeding programme for the mothers.

This project incorporates a non-traditional design that is multi-dimensional in terms of content, teaching methods and learning environments. It is technologically appropriate and meets the basic learning needs of the women it serves.

(ii) *The main delivery system for the basic education of children is primary schooling. Therefore, primary education must*

be universal to ensure that the basic learning needs of all children are met. Supplementary alternative programmes can help meet the basic learning needs of children with limited or no access to formal schooling, provided that they share the standards of learning applied to schools, and are adequately supported.

Most of the people of Sierra Leone live in the rural areas. Their life is difficult and they are unable to produce enough rice to feed themselves and the rest of the country. To improve the quality of rural life, the government asked UNDP and UNESCO to help make primary education more relevant to the needs of the people. A pilot project was set up at a rural teacher-training college at Bunumbu. Teachers and villagers got together, and a new curriculum was developed with stress on the practical and on self-help. Activities were launched to improve the quality and quantity of the rice crop, to devise more effective agricultural instruments and to relate learning in the classroom to these and other practical activities in the local community. The Bunumbu influence is now spreading to the rest of the country, and it is hoped that this will help to put to full use the resources, both human and natural, of Sierra Leone.

This project utilizes teacher trainers and the community in developing a technologically appropriate primary school curriculum that helps actualize the natural and human resources available for the improvement of the quality of life for all.

(iii) *The basic learning needs of youth and adults are diverse and should be met through a variety of delivery systems. Literacy programmes are indispensable because literacy is a necessary skill in itself and the foundation of other life skills... Other needs can be served by: skills training, apprenticeships, and specialized instruction on such topics as health, nutrition, population, safe water, the environment, family life, and other societal issues.*

In the villages of the Seti zone in Nepal which can be reached only on foot and are rarely visited, the people face a number of vital problems: food is limited, clean drinking water rare, hygiene minimal, health care practically unavailable, and education inadequate, especially for girls. To help them to improve their lives, a pilot education project was carried out jointly by the government of Nepal,

UNDP, UNICEF and UNESCO in five districts along the Seti river in order to demonstrate that education is a strong force for progress and a pre-requisite for the improvement of the condition of peasant women and their daughters. The project brings together young village girls, between the ages of 6 and 12 for two hours a day. The girls are taught to read, write and count, and also to carry out practical activities to improve their living conditions. These include improved hygiene and cleanliness, understanding problems of soil erosion and reforestation, growing vegetables and planting fruit trees.

This basic education project made use of many techniques and environments for teaching the technical skills. Knowledge and skills to construct minimum facilities to ensure safe drinking water and the disposal of human waste for healthy living provide one example of the science and technology curriculum content.

(iv) All available instruments and channels of information, communications, and social action must be used to reinforce the above components, convey essential knowledge, and inform and educate people on social issues.

Most of the science and mathematics teachers in Silicon Valley, the location of many hi-tech industries in California, had never worked in jobs outside school. Their knowledge of science and technology was entirely what they learned in school settings. A consortium of local industries initiated a programme in conjunction with a teacher-training institution to encourage teachers to learn first hand about science, technology and industrial work attitudes and skills. Teachers were hired for substantial summer positions consistent with their educational background. A 'mini-partnership' between

the teacher and an industry mentor was structured so that the two could communicate and plan. Some five per cent of their work time was reserved, so they could prepare materials for the classroom based upon their experience in industry. Computer equipment (modems) was supplied to each teacher for use during the school year so that the teacher's individual classroom and industrial work setting could be in communication via the computer.

This example of science and technology education, in this case directed at teachers, incorporates a community partnership design. One result was that direct information and communication channels were initiated and maintained in order to keep science and technology education in schools connected to practical work in the local environment.

Science and technology are major driving forces for change in the world; they are part of the heritage and hope of humanity. To flourish, they require a climate of critical societal acceptance and the existence of a dynamic and open scientific community.

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5. The Contribution of Education and Training to Economic and Social Development

The future is not some place we are going to, but one we are creating.

The paths to it are not found, but made, and the making of those pathways changes both the maker and the destination.

Motto of the Australian Commission
for the Future

Why education for change?

Looking to the future, it is clear that there will be far less stability in the work-place and in all forms of professional life. Not only are patterns of employment changing, they demand greater flexibility of individuals in the course of their working life. The impact of scientific and technological change on employment requirements has been outlined in the previous chapter. The current re-structuring of the economies of the countries of Eastern Europe is showing in a dramatic way the heavy burden such changes place on skill re-distribution and occupational flexibility. The ILO is now frequently asked for advice on how to find new occupations for workers when industrial enterprises such as coal mines and steel factories have to be closed down.

Economic and social development also plays an important role in changing the skill requirements of the workplace. In Australia, for example, it has been estimated that up to 50 per cent of the skills required in the new knowledge-based industries become redundant every three to five years. In a

twenty year period probably 50 per cent of all job categories will change (Ellyard, 1990).

World trends in demographic expansion indicate clearly that provision of employment opportunities cannot be dependent on the formal sector only. The United Nations Population Fund (UNFPA) estimates that the world population will double within forty years: in ten years it will have surpassed 6000 million. Clearly the formal sector of the economy cannot provide employment for all these people. Opportunities must be sought in the informal sector and in self-employment. In African countries, already 60 per cent of the urban labour force is working in the informal sector as variously defined. The situation is one in which the individual must take charge of his or her own destiny; many will need to look to self-employment. Education must help to build up the self-confidence to succeed in life and strike out on one's own. There need to be 'job creators' coming out of school rather than 'job seekers'.

The implications of this situation for education are manifold. There can be no sustained economic and social development without an active population capable of playing its full role in such development. This demands adequate preparation through education and training. It is clear that the body of knowledge required for gainful employment is changing ever more rapidly both in depth and in breadth. Therefore, all members of the work-force need access to lifelong learning opportunities. The move to a 'learning society' has profound implications for the education system; if primary and secondary schools can no longer be expected to

provide all the essential basic knowledge and skills needed throughout life, the schools will be relieved of a major burden which is currently stifling them. What is important is for pupils to leave school with the motivation and capacity for lifelong learning because they have the skills, such as literacy and numeracy, to access knowledge. It will then be up to society to provide the opportunities for lifelong learning.

One consequence of demographic expansion is that it has become more and more difficult for countries to provide the increasing number of educational institutions needed to keep pace with the demand for formal education. In those countries which are richly endowed with natural resources and the economic power and know-how to exploit them, the costs of education can, to a large extent, be met. In others, this is not so, and a sense of deprivation is already endemic. They have to find new solutions in each local context that are affordable, sustainable and fully cost-effective in terms of local resources.

Just when more and better education is required, much of the world's population is being left behind. Future workers and parents in poor countries need a greater understanding of their physical and social environment. They should be capable of using information to improve the quality of their lives. They should be catching up with industrial-country workers in respect to job skills and productivity. Some are catching up, but on average, 'the knowledge gap' appears to be increasing between wealthy and poor economies, and between the wealthy and poor within many countries. (World Bank, 1990 p. 68)

The contribution of basic education

There is a persuasive body of evidence that investment in the education and training of the labour force plays a crucial role in economic development. The empirical evidence takes five main forms: (1) growth accounting studies, which estimate the contribution to economic growth in a given time period of investment in the education of the labour force; (2) productivity studies, which estimate the contribution of additional education to the physical productivity of workers and farmers;

(3) benefit-cost studies, which evaluate the economic contribution of education and training in terms of their private costs (earnings foregone and other expenses incurred by students while in school) and public costs, and the additional income earned by those who benefit from the education and training; (4) studies which estimate the effect of women's education on long-term economic development and quality of life; and (5) studies that estimate the role of education in poverty alleviation.

The results of these studies suggest that in both developed and developing countries, educational investment has been one of the most important factors contributing to economic growth; that expenditures on education contribute positively to labour productivity; that the economic payoff of spending on education – from both a private and public standpoint – is high in absolute terms and compared to other investments; and that increased education of parents – especially mothers – has an important impact on child health and reduced fertility at all levels of economic development. (World Bank, 1990, p. 3)

One of the scholars who pioneered the notion of the economic value of schooling is the Nobel Prize-winning economist Theodore W. Schultz, who recently summarized his own beliefs after more than twenty years of research on human capital. In his view,

human capital is something that might account for the large amount of progress in the economy or increases in real income that is coming from some source. Physical capital in our society today explains roughly one-fourth of the income that we have. The rest seems to come from human beings. What has changed in human beings? They've accumulated abilities and skills. Extraordinary, when you look at it as a process over a fairly long period of time!

But not everyone agrees with the human capital model. There have been arguments that schooling does not really make youth more productive, just more 'trainable'. Dr. Kenneth Arrow, another Nobel Prize-winning economist, has studied the role of schools as a screen for employers:

The mere fact of being exposed to a variety of experiences produces a kind of 'trainability'. Individuals once they are out in the world after having done well in school ... will in fact show an ability to respond to new situations.

This chapter is based on material presented or available at the Roundtable entitled 'The Effects of Education and Training on Economic and Social Development' (T2), organized by the International Labour Organisation (ILO).

The Roundtable was chaired by:

George Kanaway
Director of Training, ILO

The presenters were:

Martin Carnoy (Moderator)
Stanford University, United States

Shahnaz Wazir Ali

Minister of State for Education, Pakistan
Sippananda Ketuthat
President, National Petrochemical Corporation,
Thailand

Publications used in the preparation of this chapter and available at the Conference included the following:

Investing in the Future by Jacques Hallak
(UNESCO:IIEP)

Improving Primary Education in Developing Countries:
A Review of Policy Options by Marlaine E. Lockheed
and Adriaan M. Verspoor (The World Bank)

Does schooling really increase an individual's productivity, and if it does, what goes on in schools that makes the student more productive? To explore this question, a team at Stanford University carried out an investigation into the relationship between the schooling and the productivity of the workers in a Mexican electronic assembly plant. The skills seemed simple, but despite a labour shortage in the area, the company would only hire workers with primary school completion certificates, that is, six years of basic education. The president of the company explained:

In our manufacturing environment, as in any other part of the world, I think, you need to do mathematical operations, simple division, arithmetic, subtraction, addition, multiplication, and you also need to read and write [...] when they come out of school you have to teach them certain specifications, like quality specifications, that they need to read.

The study also brought out the importance of quality control in industry. Those who can assume responsibility are likely to succeed in such a context. Furthermore, a real understanding of the nature of the operations helps productivity. Literacy, numeracy and being able to communicate with others are factors which can contribute a great deal to this understanding.

A second study was carried out in a Mexican automobile engine assembly plant that was pro-

ducing for the United States market. This was a sophisticated, automated plant where the required minimum was nine years of schooling. A more advanced knowledge of mathematics was a prerequisite for understanding the working of the plant. A capacity for problem solving and indeed for anticipating potential problems was essential. With machinery in the plant capable of producing 150 units an hour – a block or a head or a crank every 24 seconds – with machinery producing something so complicated and so quickly, it is not good enough five minutes later to know that something went wrong. The worker must be able to anticipate that there is going to be a production problem or, when one does occur, know how to pin-point it. Training and schooling can provide the essential basis for such problem solving skills which are of critical importance for a plant that seeks very high productivity in an automated environment.

It seemed also in this particular factory that a real learning environment had been created. Training started even before the plant was built, and the workers were eager to learn. The positive attitudes towards working and learning contributed considerably to the efficiency of the enterprise.

Experience in these industries suggests that it is already in primary and early secondary education that children learn skills which contribute directly to higher productivity. But important as these skills

Box 5.1 Addressing the needs of child workers in industry and urban areas

Increasing access to education in developing countries will require addressing the needs of working children, in both rural and urban settings. As long as children's earnings remain essential to family survival, creative and practical approaches to educating these children will have to be devised. Effective ways of dealing with child workers in industry and urban settings are described below.

India: In response to the persistent social and economic problems stemming from its millions of working children, the Government of India has launched pilot projects in areas with major concentrations of child labour, one of which is the match industry of Sivakasi.

In Sivakasi, there are 45,000 children employed in the match and fireworks industry. With the ultimate objective of eliminating child labour in this industry, the project aims to provide better health care, improve working conditions, provide non-formal education, and raise the community's general awareness of the problems of child labour. Because most children working in the match and firework industry have either dropped out of, or never attended, school, the project includes non-formal educational programmes that concentrate on imparting basic literacy skills. These programmes are being organized through a registered society whose members belong to voluntary organizations with experience in non-formal education. The Central Board for Workers' Education also organizes non-formal education and consciousness-raising classes. It holds ten weekend classes, with thirty pupils in a class, covering 1,800 children in a year.

Kenya: In 1964, children accounted for 21 per cent of Kenya's paid labour force, and although there is evidence that the number of children working for wages has declined, child labour is still prevalent. However, since the 1977 Employment (Children) Rules prohibit

paid child labour in industry, child workers are no longer officially counted. There are only two programmes in the country that address the needs of working children, both non-governmental. One is the Undugu Society of Kenya.

Established in 1973, the Undugu Society targets its activities at street children, mainly 'parking boys and girls' between 4 and 16 years old (who direct motorists to parking bays), and child prostitutes, mostly girls between 12 and 16. The activities include a number of programmes in basic education, vocational training, school sponsorship, income generation, and the provision of loans.

The Undugu Basic Education programme consists of informal education, with emphasis on practical skills and imparting literacy in Kiswahili and English. The programme is divided into three phases, individual students moving from one to the next according to aptitude. The more capable students are channelled into primary schools and the majority are prepared for self-employment. The course lasts for four years. The combination of this program with other programs has enabled the Undugu Society to become one of the most successful non-government organizations in Kenya and to provide supportive, preventive and developmental programs for street children. It has devised an alternative approach to primary education; shown that parking boys and girls can become useful members of society; promoted the informal sector; upgraded about 1,000 slum dwellings; helped single mothers to earn decent incomes; and organized the formation of numerous small businesses.

Sources: A. Narayan (1988). *Child labour policies and programmes: The Indian experience*, P. Onyango (1988). In A. Bequele and J. Boyden (eds.), *Combating Child Labour*. Geneva: International Labour Organisation.

are, it is school completion itself that sends a broader signal to employers; it tells them that these are the young people who can be taught new skills. If students have done well in their formal education, they have confidence in responding to new situations. This makes it particularly important for the school to give children a sense of success and the feeling that they can go on learning new things. If

they leave school with a sense of failure, if they leave before they have finished their course, this may be a tremendous liability for the rest of their lives.

When one looks at the rates of return on investment in education, it is easier to see relationships of this kind in the industrial sector. However, similar findings have also emerged from the rural sector. For example, a study summarizing the ef-

fects of education on agricultural production in thirteen countries concluded that four years of primary education increased farmer productivity by 8.7 per cent across all countries and by 10 per cent in those undergoing modernization. An important explanation for such increased productivity is that education helped farmers to be better able to choose among various inputs and to estimate their effects on their overall productivity. Basic education seems to help to expand horizons, widening the field for making better judgments. The increased socialization that it engenders increases the capacity for communication with others. It also leads to a deeper knowledge in terms of sensing, feeling and understanding the situation in which rural people operate.

It should be noted, moreover, that it is important for numeracy to go hand in hand with literacy. Innumerate farmers around the world feel the need to be able to recognize symbols for sums of money and to write them down, to read scales in measuring and weighing and to calculate prices in market situations. The following scenario is typical of the situation in many developing countries.

The residents of a small isolated village in West Africa sell their coffee to the coffee company, whose representatives pay weekly visits to the village. The company representatives weigh the coffee beans themselves, using their own balances, which the villagers cannot read. They are obliged to accept the word of the representatives as to the weight of the coffee. Although the price per kilo may be known, it is the representatives who multiply the weight by the unit price to obtain the amount to be paid to the farmer, who must again accept the representatives' word, since he cannot do the calculation by himself. The villagers correctly perceive that they are at the mercy of the traders. It was not surprising, therefore, that when a literacy campaign was launched in the village, the villagers stated emphatically that they were far more interested in numeracy than in literacy (Zepp, 1987).

Indeed, whenever numeracy training is offered to illiterate adults, the response is almost always overwhelming. Learning to calculate prices is a goal which adults readily perceive as affecting them directly and tangibly.

Education for the underprivileged

In all countries, children of poorer families are less apt to enrol in schools and more apt to drop out than children of better off families. Families pay for the education of their children both directly and indirectly. Direct outlays include expenses such as school fees, activities fees, examination fees, supplies, uniforms, transport and lunches. Families also incur indirect or opportunity costs in the form of foregone household labour or earned income of children in school. Parental decisions to bear the costs of educating their children are generally based on their perceptions that the returns from education will make the expenditure worthwhile either in terms of increased future income, increased overall household productivity or prestige. However, because poverty is often linked with limited educational attainment and low occupational status of parents, there tends to be little reinforcement of the value of education [...]

In poor families, children's labour is often critical to household income or survival, especially in rural areas [...] Studies from India and several African countries show that poor, rural girls in particular are seldom able to participate in school, given their many duties - drawing water, preparing food, gathering wood, tending younger children, helping with farm activities.

Child labour is not confined to rural areas. Throughout the developing world, millions of urban children are found working in industry and allied activities [...] The problems encountered by rural working children are exacerbated in urban settings [...] The effect on their schooling is considerable: those who do manage to attend school are found to be less able, less industrious and less regular in school attendance and continually disadvantaged throughout their school years and even later. (*Improving Primary Education in Developing Countries*, pp. 104-5)

Women and girls receive less education than men and boys in almost every country. The disparity is particularly acute in the rural areas of developing countries. Besides the obvious equity argument, it is now recognized that when women receive low levels of education, it hinders economic development and reinforces social inequality. Women represent an enormous potential source of human capital and of scientific and technical skills in agriculture, commerce and industry. The rate of return on investment in women's education is as

Box 5.2 *Non-formal learning centres for children of fishing communities in Indonesia*

The Government has a national Non-formal Education service organized under a Director General for Education, with provincial, district, sub-district and village structures to support extensive non-formal learning, skills training and income generation for children and adults in the age range 7 - 44. Among the children not

enrolled in school are those of some communities engaged in fishing and fish processing. Small learning groups of these children meet in the morning or evening in order not to encroach on the times of fishing.

Source: UNESCO

high or higher than for men, even if measured by income differential alone (without taking into account factors such as effects on fertility and child health). For example, women constitute an important source of skills in rapidly expanding electronic and communications manufacturing, and financial and computer services.

An interesting case study was made in Pakistan. It has been a long-standing tradition that Pakistani men from rural areas go to work in countries of the Arabian Gulf. They are likely to be away from home for periods of several years at a time, leaving their wives and families behind. Their only form of communication with their families has been by letter. Illiterate mothers have encouraged their children to become literate in order to read their father's letters, and so have been motivated to become literate themselves. In the absence of men, women have also found themselves managing the finances of their households and of their agricultural units. Over the years, participation rates in schooling have increased and attrition rates decreased. When the men returned they found that, in their absence, the women had actually increased the agricultural productivity of the land they had left behind. They encouraged the women in their efforts and their sons and daughters to remain in school.

Another disadvantaged group is the disabled, who may constitute up to 10 per cent of the population in some countries. Disabled people usually are more restricted in their mobility and may require special learning materials or individualized instruction. Their needs can be, and often are,

easily forgotten, especially in poor countries. Yet, with proper planning, most disabled persons could participate in basic education programmes and become productive members of society. One country that has made a special effort to provide education for the disabled is Zambia, where a special campaign for disabled children was launched in 1980. By 1985, there were thirty-five institutions serving over 2,000 pupils at the primary level, more than double the number served in 1980.

Human resources development and economic and social development

It is clear that there is a close connection between the development of human resources and economic and social development. There may still be unanswered questions about the precise nature of this connection, and about what makes school leavers more productive, better decision-makers and more desirable employees. No doubt the more successful workers in the future will be those who have a balanced personal development and who are open to new ideas and new opportunities. Quality education for lifelong learning is needed to produce such people, but quality education requires investment.

Until the drastic austerity of the 1980s, many developing countries had been spending around 4 or 5 per cent of their gross national product (GNP) on schooling and training each year. In the current period of slow (even negative) economic growth and austerity in developing countries, pub-

Box 5.3 Literacy and post-literacy programmes for girls and women in Togo

Togo, where the illiteracy rate among women is about 70 per cent, is one of the few African countries to have undertaken a sustained national programme to provide literacy for women. Until 1976, the national literacy programme was directed at both women and men. In 1977, a project destined specifically for women in the rural regions got off the ground with the principal aim of providing training in reading, writing and arithmetic, associated with income-generating activities.

UNESCO provided technical support for this difficult long-term task, while the Norwegian Agency for International Development (NORAD) and the Arab Fund for Development (AGFUND) gave financial assistance.

The particular features of this project, which has been implemented with a great deal of conviction by the Togolese authorities, derive from the fact that it is addressed to rural women throughout the country and makes use of the four principal Togolese languages: Ewe, Kabiye, Tem and Ben. The theoretical courses are accompanied by practical, productive activities such as manufacturing local soap and palm oil, cattle-rearing, agriculture, weaving, sewing, pottery and basket-work. Women are organized in productive units which both ensures their active participation in the literacy classes and enables them to derive immediate and concrete benefit from their knowledge. These activities are not new for Togolese women, but a knowledge of reading, writing and arithmetic enables them to be pursued more effectively. The women concerned are now able to keep accounts and registers; it is harder to swindle them in the markets where they sell their products; they are able to understand medical prescriptions and notice

boards; they take a greater interest in their children's school work; and they are able to read whatever they can find in the rural library as well as leaflets and local newspapers published in their own languages.

The literacy classes are conducted with the assistance of volunteers who have fifteen days' of teacher training and refresher courses every six months. The classes, organized as a function of the agricultural calendar, take place preferably before nightfall to save lamp oil and to reassure husbands who do not like their wives returning after dark.

Today, this project has achieved significant results: 12,000 women and girls have attended classes; some 521 literacy centres have been opened and equipped; and 1,030 literacy instructors, 600 rural organizers, 80 rural librarians and 60 'local writers' who act as correspondents for the local press have been trained. Over 54,000 copies of a whole range of teaching materials have been drawn up and distributed throughout the country. In addition, women have managed to increase their family earnings through the activities of the productive units.

Togolese women involved in literacy activities under this project have acquired new knowledge and are taking a greater interest and participating more willingly in community life. They are better able to understand the nature of the problems affecting them and at the same time are better equipped to confront the difficulties inherent in their two-fold handicap – being women and inhabitants of rural regions.

Source: K. Cheblowska, 1990, *Literacy for Rural Women in the Third World*. Paris, UNESCO

lic expenditure on education is generally declining in real terms, even though many children still have no place in school. Some governments under pressure to trim their budgets are prone to reduce expenditure on education because it is easier, politically, to do so than to cut expenditure in many other areas. Yet, investment in a country's human resources is now, and will be in the future, even more crucial than it was in the past. Education, more than ever before, is the key to unlocking the door to economic and social development.

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6. Environmental Education: A Component of Sustainable Development

Responsible citizenship can be developed through environmental education. The strategies are known. The tools are available. The real challenge lies in a willingness to do things differently [...]

Harold R. Hungerford and Trudi L. Volk

Environmental literacy for all

The world concern for peace among nations has never been greater than at the present time, but a world at peace with itself is viable only if it is at peace with nature. Concern is growing for an environment under threat locally, nationally and globally. It is a concern heightened by a desire not to put in jeopardy the world to be bequeathed to future generations. Faced at the same time with an ever-increasing demand for the benefits of development, how can states promote economic and social growth and yet pursue the long-term preservation of the natural resources on which their development ultimately depends?

The concept of sustainable, environmentally-sound, development offers a promising approach to tackling this dilemma. Two major United Nations reports – the Brundtland Commission's *Our Common Future* (United Nations, 1987) and UNEP's *The State of the World Environment* (UNEP, 1989) – have dramatically drawn attention to the pressing need to devise and put into practice, in all countries and all parts of the world, long-term environmental strategies for achieving sustainable development. The conclusion of *Our Common Future* was:

We found everywhere deep public concern for the environment, concern that has led not just to protests but often to changed behaviour. The challenge is to ensure that these new values are more adequately reflected in the principles and operations of political and economic structures.

How is this to be done? Implicit in the concept of 'sustainable development and intergenerational ethics' is a task of crucial importance: to hand down to generations to come, if not a better world, at least a world capable of providing the natural life-enhancing beauty and life-sustaining resources they will need. This calls for the environmental education and training of each generation to ensure widespread environmental literacy – the elementary knowledge, skills and motivation for people to participate in the solution, and anticipation, of environmental problems, and so make their own contribution to sustainable development. Indeed, it involves directing learning towards basic human needs. People everywhere strive for a safe, clean and healthy environment, for a sustainable food supply, for the protection of nature, wild life and genetic resources, and for a well-planned and pleasant environment conducive to the continued improvement of each individual's quality of life. These needs must also be considered when defining the basic learning needs of a community or a nation.

What is the contribution that environmental education can make to shaping attitudes and promoting action that will help create sustainable development? In the context of Education for All, the attributes of environmental education will be

considered from several viewpoints, both theoretical and practical, including examples from both formal and non-formal programmes. Attention will be directed to positive ways of bringing about change and finding solutions to problems.

In its evolution, environmental education has remained closely linked with the concept of the environment itself and the way in which it is perceived. The old view that equated the environment merely with its biological and physical aspects has given way to a wider conception which also takes into account its economic and socio-cultural aspects, and emphasizes the correlations between them. Environmental education is thus seen today not simply as a separate discipline or specific subject to be added to curricula, but rather as a dimension that must form an integral part of all curricula. Environmental education is the outcome of a re-orientation of various disciplines (natural sciences, social sciences and humanities) and of different educational experiences. Together, they make it possible to achieve an integrated perception of the environment as a whole and to act towards it in a way that is more rational and responds to social needs. Science education has a particularly important role to play in providing the conceptual framework for managing the biosphere (forests, soils, air, water, chemicals, energy, biological diversity and the human population) and the technosphere (human habitats, industry, transportation, etc.). How is it possible, for example, to promote and manage wildlife areas or agriculture and fisheries successfully without a real understanding of the ecological and physiological principles involved?

This all implies that environmental education must be interdisciplinary, action-oriented and problem solving at the interface between environmental constraints and economic needs. Considerations of basic ethical and human rights come into play, together with informed knowledge of the biosphere and of national and local cultural settings. For example, wildlife exists and has a value of its own regardless of its benefits to humanity; and the carrying capacity of a given environment is a natural function, and is independent of the number of people, livestock, dams, buildings, roads

etc., that the people and their authorities choose to have that environment support. Such factors cannot be ignored in environmental education.

Moreover, a certain environmental literacy can be attained by young children even before they can read and write, as well as by illiterate adults. There is plenty of evidence that much traditional wisdom about environmental protection and conservation is valuable and can be disseminated through formal and non-formal educational channels.

Changing learner behaviour through environmental education

An International Environmental Education Programme was jointly launched by UNESCO and UNEP in 1975 and has been steadily expanding ever since. Two meetings organized in the context of the programme created a framework for environmental education. These were the Intergovernmental Conference on Environmental Education (Tbilisi, 1977) and the International Congress on Environmental Education and Training (Moscow, 1987). The Tbilisi framework (UNESCO, 1980) covers environmental education at local, national, regional and international levels and for all age groups, inside and outside the formal school system, and throughout life – for environmental issues and knowledge about them are constantly evolving.

Five principal learning objectives were established:

- building awareness of the environment and sensitivity to it in its totality, natural and man-made;
- assimilation of appropriate and relevant knowledge about the environment;
- development of attitudes of ethical concern about the environment, motivating active participation in its protection;
- acquisition of skills enabling identification, solution or anticipation of environmental problems;
- active participation of all.

Thus environmental education is, by its very nature, interdisciplinary, holistic and problem-solving; it leads its learners to think globally and act locally,

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The Roundtable was chaired by:

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The presenters were:

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Assistant Director-General for Education, UNESCO

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laya, Malaysia

Chodchoy Sophonpanich

President, Thai Environment and Community
Development Association, Thailand

Papers used in the preparation of this chapter and available at the Conference included the following:

Environmental Education by UNESCO-UNEP Interna-
tional Environmental Education Programme

Changing Learning Behaviour Through Environmen-
tal Education by Harold Hungerford and Trudi L.
Volk

Environmental Education (Man and the Environment)
in Elementary Schools: A Malaysian Case Report by
Thilla Chelliah

The Magic Eyes Concept by Chodchoy Sophonpanich
Environmental Education in the Developing World by
James V. Connor

and to discover that global problems demand global action through international co-operation. By enabling learners to take part in planning their own learning experiences in, about and from the environment, it also provides opportunities for real participation in decision-making.

The educational task which is implied by these objectives is an ambitious one. The citizenship behaviour which they describe calls for an educational thrust which goes beyond 'education' in its traditional sense. Instead, they present a set of objectives which paint a broad picture of behaviour encompassing not only knowledge, attitudes and skills, but also active participation in society.

Early thinking in the field of environmental education assumed that behaviour can be changed solely by making human beings more knowledgeable about the environment and its associated issues. Research findings from a range of countries and from widely different social settings have shown that for learners to change their behaviour they need also to be able to make good decisions where problems have become *issues*—that is, in situations where people have differing beliefs and values

concerning the best ways of dealing with problems. Furthermore, research into environmental behaviour shows that learners need to have a sense of 'issue ownership' and 'empowerment'. Issue ownership implies that a person has real understanding of the issues with which he or she is dealing and that they are extremely important at a personal level to him or to her. Many people feel helpless and disenfranchised in relation to environmental problems and issues confronting their society. They need a sense of potency, and this can be achieved through acquiring skills involved in responsible decision-making (such as assessing and analysing good information) and then applying these skills to particular issues that are causing concern in their own environment. The skills involved in responsible decision-making should be taught, not the decisions themselves. If decisions are taught, students tend to accept them without embracing the underlying values.

On the basis of this rationale a number of critical components of a total educational programme for environmental education have been identified to effect changes in learner behaviour:

Critical Educational Components

Educational agencies can maximize opportunities to change learner behaviour in the environmental dimension if they:

- teach environmentally-significant concepts and the environmental interrelationships that exist within and between these concepts;
- provide carefully designed and in-depth opportunities for learners to achieve some level of environmental sensitivity which will promote a desire to behave in appropriate ways;
- provide a curriculum that will result in an in-depth knowledge of issues;
- provide a curriculum that will teach learners the skills of issue analysis and investigation as well as provide the time needed for the application of these skills;
- provide a curriculum that will teach learners the democratic skills needed to resolve controversial issues and provide the time needed for the application of these skills; and
- provide an instructional setting which increases learners' expectancy or reinforcement for acting in responsible ways, i.e., attempt to develop an internal locus of control in learners.

There seems to be no one best way to implement these components in an educational setting, though research and experience may give meaningful guidance concerning effective and successful strategies. One overall strategy is to make provision for reinforcement over time. Studies with 8th grade pupils in the United States have shown that without such reinforcement the original positive environmental behaviour eroded considerably over a three-year period. (Another approach to the general question of learning through participation in decision-making appears in Monograph II, chapter 6, where participation and communication are discussed.)

'Environmental sensitivity' is another area of study. A student may know that a particular plant is rare and may even know a great deal about its taxonomy and yet still pull it out by the roots. True environmental sensitivity means awareness of nature's life-giving and aesthetic significance. A child

who is aware of the inherent beauty of flowers in their natural setting will not uproot them. Several studies of this component (for example, Peterson, 1982 and Tanner, 1980) have led to the conclusion that it is important for learners to have frequent interaction with nature in informal outdoor settings over long periods of time. In the classroom, teachers who are themselves environmentally sensitive can be good role models for learners.

Two curricular strategies that have been found to be effective in promoting responsible citizenship in the United States are the 'issue investigation and action' model and the 'extended case study' model. In the former, the student learns to discriminate between environmental events, problems and issues. The impact of beliefs and values is emphasized and an issue analysis strategy is practised. Each student chooses an issue of particular interest to him or her, such as the effect on health of chemical treatment of drinking water, and investigates it in depth. He or she then prepares a report on the investigation and develops a plan for resolving the issue. If she or he wishes to implement this plan, the teacher helps in this activity. In the 'extended case study' model the student learns some of the same skills as in the other model, but focused on a pre-determined issue, often chosen by the teacher, such as the disposal of municipal waste. Research findings suggest that the extended case study model, although successful, is not as powerful in changing learner behaviour and motivating action as the issue investigation and action model (see display on page 57). The characteristics displayed are for ages 6-17 (Grades 1-12 only). It should be noted, however, that both models have been used very successfully in teacher-education programmes in the United States.

Environmental education in the developing world

The concept of environmental education as almost synonymous with 'education for sustainable development' raises many issues. There may be contradictions for the rural poor between the priorities for mere survival and the development pri-

A Comparison of Two Instructional Models for Environmental Education

	Issue Investigation Model	Case Study Model
Characteristics of students		
1. Appropriate grade levels	6-12	1-12
2. The student's role in the class	As an autonomous issue investigator	As a researcher in large or small groups
3. The extent to which the student gains in-depth knowledge of a wide variety of issues	A great extent	A small extent
4. The extent to which the student gains a sense of issue ownership	A great extent	A moderate extent
5. The extent to which the student gains new skills	Very high	Moderate
6. The extent to which the student is empowered to act on a variety of issues	A great extent	A small extent
7. The extent to which one can anticipate student involvement in issue solution outside school	A great extent	A moderate extent
Characteristics of instruction		
8. Issue focus	Multiple issues	A single issue
9. Instructional posture of teacher	Direct instruction followed by a role as facilitator of investigation and action	Initially traditional; as a facilitator during the group investigation
10. Demand for teacher flexibility	High	Moderate
11. Time needed	Typically 18 weeks	Usually much less than 18 weeks
12. Need for in-service education of teachers	Very high	High
13. Potential infusion into existing programmes	Low to moderate	Very high

Source: *Changing Learning Behaviour through Environmental Education*, Hungerford and Volk, p. 12.

curities of their countries. On the one hand, people are told to protect and conserve the environment – for example, by not chopping down trees or clearing the ground by burning the undergrowth – and on the other, they see their governments carrying

out 'development' projects, such as the building of dams and roads, which destroy the forest on a much more massive scale. The basic dilemma, therefore, is how, in each situation, to have sound and sustainable development without destroying

the environment. How can teachers balance ethical teaching about the environment with legitimate concerns of self-interest or of issues which remain controversial?

Many countries are currently re-considering the trends and structures of education and undertaking the reform of methods and content of education as a whole. Such efforts, which form part of a global process of renewal, provide a particularly favourable opportunity for incorporating environmental education at all levels and into all types of education. They also offer an opportunity to think through the meaning of 'environmental literacy' in each particular cultural and social context.

If environmental education is to take account of the specific environmental and developmental characteristics of each country, the bodies responsible for educational planning at the national, regional and local levels must work out and implement methodologies to identify and meet the requirements of that education, as well as of general educational activities, and of the training of the personnel required for development. India, for instance, has recently made it mandatory for all educational institutions to incorporate an environmental dimension into all formal and non-formal education programmes, from pre-primary up to and including the university level.

In many countries, there is concern that the introduction of environmental education into an already overloaded curriculum may place an unrealistic burden on learners and teachers alike. When this is felt to be the case, it is of special importance to ask the question: how best can the curriculum be restructured to provide education in, through and for the environment? In a number of countries, use has been made of the approach, referred to earlier, of regarding environmental education not as a subject apart but as a dimension of the curriculum and an outcome of re-orienting various disciplines on an interdisciplinary basis. A starting point would be for countries, perhaps acting collectively in a region or sub-region, to determine which are the key environmental concepts and issues of most immediate relevance to their own needs and then to use them as a basis for curriculum development.

To help countries in the enormous task of incorporating the environmental dimension into national education curricula, the UNESCO-UNEP International Programme for Environmental Education is contributing to the training and re-training of environmental educators: so far over 13,000 educators have been reached in 150 countries through training seminars. Concurrently, the programme has also developed model curricula and teaching materials adapted to the needs of different regions; teachers' guides, manuals and modules have been produced and distributed on a large scale worldwide.

While in most cases the use of children's books and teachers guides forms the basis of classroom teaching, there are other possibilities. Children in remote areas can benefit from distance learning by listening to radio programmes; in some cases they may also have access to television and computer satellite links. Reading material such as children's magazines on environment-related themes can provide inspiration for pupils and teachers alike.

In all developing countries, non-formal programmes can be useful. The Magic Eyes campaign in Thailand (described later in this chapter) is a significant example. Whereas the Ministry of Education is of paramount importance in formal education, in non-formal environmental education many other institutions and agencies can be involved. They may include the ministries responsible for communication, health, agriculture, environment, forestry, natural resources and water, as well as local communities, the media, non-governmental organizations and public and private enterprises. Various United Nations bodies and funding agencies are important actors at both the international and national levels and can be important also at the local level through the programmes they support. Organized religious and youth groups are valuable allies at the local level, as are other non-governmental organizations which are particularly useful for their energy, flexibility, creativity and willingness to live and work closely with communities. The development of new partnerships, especially with non-governmental organizations and the media, is essential for reaching out to all communities and to all parts of a country, however remote.

A case study on the introduction of environmental education into primary schools (Malaysia)

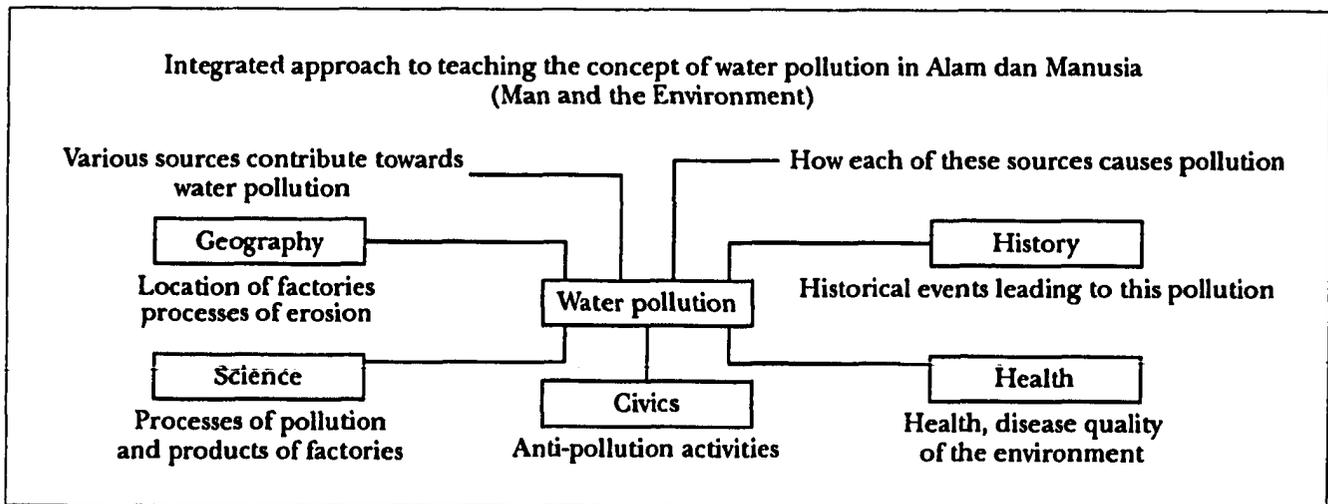
In 1974, the Government of Malaysia set up a cabinet committee to review the objectives and outcomes of the National Education Policy, with a particular focus on ascertaining whether the education system had been successful in evolving a society that was united, disciplined and trained. The committee highlighted several weaknesses in its report. It stated that the primary school curriculum in use at the time was highly academic in character, content laden and subject specific, placing little emphasis on the mastery of basic skills. The curriculum tended to be compartmentalized with little relationship between component disciplines.

Basing itself on the committee's findings, the curriculum development centre of the Ministry of Education developed a new primary-level curriculum which came into full operation in 1983. A major component of this is Alam dan Manusia (literally, Alam -that which surrounds the environment; and Manusia - human beings, people). Officially, the programme is referred to as 'Man and the Environment', where 'Man' refers generically to all human beings. It is taught from the 4th year onwards, when children are at least 9 years old, bringing together five traditional subjects - geography, history, science, civics and hygiene - and

treating them in an integrated way. The objectives of this curriculum centre on the need to impart knowledge and understanding of the interactions of people with their environment. Emphasis is also given to changes in the environment caused by such interactions and to the inculcation of positive attitudes and values towards solving problems. Training pupils to think, evaluate and draw conclusions is also considered important. The need to live in unity and harmony in the Malaysian context is stressed and forms a basis for the curriculum.

Integration of content is achieved through a thematic approach. The five main themes are: (i) man, animals and plants depend on several processes important to life; (ii) man, animals and plants are able to adapt to the environment; (iii) man modifies and controls the environment to fulfil his basic needs; (iv) interactions between individuals and between elements of the environment give rise to certain phenomena; and (v) the social responsibility and the equilibrium of the natural environment are attained through various processes, natural or initiated by man.

The thematic and topical approach to teaching the subject matter in Alam dan Manusia involves strategies that transcend subject boundaries. The methods and techniques used in the classroom also reflect an integrated approach. An example of an integrated approach to teaching the concept of water pollution is given below:



At the outset, teachers encountered some difficulties in teaching this curriculum because of the major changes in content and methods involved. In particular, training was needed to help them understand the meaning and use of the integrated approach to teaching and learning of concepts in science and social science, and the depth to which certain topics are to be taught at particular grade levels. A teaching approach using group work may also be adversely affected by time constraints. In addition, there was a need to educate parents and the general public to accept the new curriculum to replace the traditionally taught sciences and humanities.

A case study of non-governmental and community organizations promoting environmental education (Thailand)

There is mounting concern that environmental destruction is advancing at so swift a pace that there is no time left to wait for the next generation to be environmentally educated. Fortunately, reaching children and youth effectively can also be a means of reaching adults, thereby helping to change the behaviour of two generations at the same time. This is illustrated in the following case study.

The Thai Environmental and Community Development Association (TECDA) began work in the early 1980s with the aim of educating all the people to be environmentally aware. At the time the programme was launched environmental education was a relatively new concept in Thailand. TECDA hoped that awareness would lead to action, initially in people's own domains (in the house, outside the front gate), and then to participation in developing the community and the country as a whole. Thus, the idea of 'issue ownership', referred to earlier, was being put into practice to develop responsible citizenship. The ultimate aim of the project was to develop a love for, and attachment to, one's environment, so that people would no longer allow others to pollute, but would rather encourage them to conserve the environment. The important point was to present complex environ-

mental problems simply and to show how they affect individuals.

TECDA's basic mass education began with the 'MAGIC EYES' HELP KEEP THAILAND CLEAN CAMPAIGN. The Thai population is young: 60 per cent are under 25 years old. Young people have a major influence on society today, and they will be the future economic leaders, industrialists and policy makers. Therefore, the campaign was developed with children and youth as the main targets, and adults as secondary targets. A series of cartoon advertisements on television was directed at children to persuade them to put rubbish in its proper place and encourage them to 'police' adults and shame them into doing the same thing - with the words 'Ah-Ah! DON'T LITTER! MAGIC EYES SEE YOU'.

The campaign started in 1984 with advertising and promotion to get people involved. Life-size puppets, television advertisements, badges, stickers, T-shirts, posters and handbooks were used to promote the Magic Eyes. The logo of MAGIC EYES is shown below:



From the anti-litter campaign, the programme expanded to address problems of water pollution and forest destruction. The slogan was changed to **HELP KEEP THAILAND GREEN AND CLEAN**. Kindergartens are now teaching **MAGIC EYES** jingles the way nursery rhymes are taught as a means of instructing children not to litter.

In developing this programme, partnerships have been built up with various sectors of the community. In particular, they involve community leaders of various kinds, government officials, the private sector in the community, and schools. Financial contributions have been received from supporting companies, followed by actual participation and involvement whenever possible.

Activities and campaigns have also been launched to encourage the general public to participate in order to increase understanding of environmental problems and to raise the consciousness of different institutions (for example, factories, businesses and open-air markets) to their responsibilities for maintaining a good environment. Activities include tree-planting and anti-litter campaigns, contests among different groups (such as clean factory, clean market, street sweepers, and river-bank and floating restaurants), painting competitions, slogan contests, cartoon drawing and essay contests.

In January 1990, the Chao Phya River programme was launched to draw attention to the rapid deterioration of this river which runs through eleven provinces and has always been considered Thailand's life-line. The **MAGIC EYES** logo is used, but in a blue colour scheme. Since the start of the programme, interest in the Chao Phya River has increased markedly among individuals, communities, schools, university groups, mass media and the government. Examples of action include a trial programme to collect garbage along the riverside by boat, and the introduction of short- and long-term measures to solve the problem of water pollution at the Bangkok Fish Market.

The TECDA programme has been tremendously successful in getting Thai people informed about and involved in improving local environmental conditions. The number of people actively partici-

pating in the programme grew from 15,000 in 1984 to over 500,000 in 1989.

Commitment to environmental literacy

It is clear that the key issues and messages of environmental education must find a central place in both formal and non-formal education. The environmental dimension must pervade education on a lifelong basis.

The archetypal sequence,

parental → local → national → global

summarizes the individual's progressive awareness of the environment from early childhood through formal schooling to responsible adult citizenship. In the case of 'MAGIC EYES', the aim was to produce a new generation of environmentally literate children who would influence adults. In fact, after a few years, children and adults alike have been drawn into the programme.

While the general public is a primary target of environmental education, special efforts must be directed to key groups within society. The environmental education of politicians and public officials is indispensable, because they have a heavy responsibility for shaping policy and enacting legislation which will enhance rather than degrade the environment. Similarly, town-planners and architects should be well informed about, and sensitive to, environmental considerations and legislation, especially concerning the proper design and location of potentially polluting facilities of various types (power stations, factories, etc.).

The urgency of the environmental crisis must not be underestimated. In the words of Beverley Young, 'the planet is groaning'. There is a need to reach out to men, women and children everywhere, combining the use of formal, non-formal and informal approaches. More than a decade has passed since the Tbilisi Charter was adopted, but progress in implementing it has been far too slow. Schools cannot bear the whole burden of environmental education. The media, in particular, must be mobilized to bring environmental issues to the forefront of public attention and to present issues in ways that will motivate action.

Many countries have launched major programmes of environmental education and more are in the process of doing so. It is only through their concerted efforts that the world will be able to meet the challenge put persuasively by Michael Atchia at Jomtien: 'This Conference is invited to declare its commitment to achieving environmental literacy for all within the context of Education for All'.

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7. Population Education

The purpose of population education is to help people understand the impact of population change on their lives and to develop the decision-making skills they will need to cope with their population situation and improve it.

Joseph van Arendonk,
Assistant Executive Director, UNFPA

The impact of rapid population growth on the quality of life

Rapid population growth is one of the most serious impediments to development today; it strains resources and slows the growth of the economy. The world's population already numbers more than five billion. Continued growth in the 1990s is expected to be the most rapid ever in history, with an estimated 90 to 100 million added every year. When populations grow as rapidly as is now the case, it is difficult for reasonable development targets to be set and reached.

The education sector, for example, is under continuous pressure to 'keep up' - to build more schools and recruit more teachers - as more and more children move into the school-age group. At the same time, there is concern to improve the quality of education through better trained teachers, better buildings, smaller classes and more resources of all kinds. It is very hard to expect the education authorities to be able to concentrate on improving quality when it is difficult or impossible for them even to maintain existing programmes and services.

Population change affects all other sectors in comparable ways. It places particular strains on the provision of adequate health care for all members of society, on safeguarding jobs, on agricultural production, and on the distribution of adequate food supplies.

Population policy is a matter of controversy in many countries. It is affected by political, cultural and religious factors, and each country has to work out its population policy in relation to its own constraints. The effects of population policies are ultimately determined by individual decisions. For this reason alone it is vital for each individual to know and understand how changes in population patterns affect him or her as a person, and as a member of the family and of society as a whole. The multiplicity of decisions made by individuals about family size have a direct bearing on the quality of their lives.

The purpose of population education is to provide the tools and skills to help people understand how population issues relate to their daily life and to motivate them to take responsible decisions. Population education can help people to improve the well-being of their families and their communities, and it can have an especially important effect on the role of women in society.

Linking the classroom to life through population education

Population education, by providing a context to illustrate elements of general education, can give a flavour of relevance, linking classroom learning to

This chapter is based on material presented or available at the Roundtable of the same title (T4) organized by the United Nations Population Fund (UNFPA).

The Roundtable was chaired by:

Joseph van Arendonk
Assistant Executive Director, UNFPA

The presenters were:

O.J. Sikes (Moderator)
Chief, Education Communication and Youth Branch,
UNFPA

Jairo Palacio

UNESCO Regional Adviser on Population Education,
Latin America and the Caribbean, Venezuela
Madame Jacqueline Ki Zerbo
Coordinatrice, UNIFEM, Central and West Africa
Ansar Ali Khan
UNESCO Regional Adviser on Population Education,
Thailand

Papers used in this chapter and available at the Conference included the following:

Population Education: A Critical Population and Development Intervention by UNFPA

the living world. Meaningless demographic data can be transformed into dynamic elements of the learning process. Numbers can become living people, thus making population data more humane and meaningful, and hence promoting attitudes that are necessary for functioning in society. *Facts for Life* (UNICEF, WHO and UNESCO, 1989), which emphasizes the importance of elements of population education such as the spacing of births, pre-natal measures, the value of breast-feeding, the food needs of young children, home hygiene and the importance of vaccination, is being used as an important resource for curriculum planning in many countries. There is now a strong emphasis on the links between population education, on the one hand, and education concerning family life, sex, the environment and health, on the other.

A number of basic concepts having universal applicability form part of the content of population education.

First, there is the importance of having respect for others, especially persons of the opposite sex. If children can truly learn this, can understand what respect means and can hold it as a value, then they will refrain from behaviour which is potentially harmful to others.

A second equally important concept is that of self-respect and self-esteem. While this is pertinent to both boys and girls, it is particularly important

for girls. They should be exposed to the variety of options (employment opportunities, etc.) which will be opening up to them, for example, to finish their formal education and avoid early pregnancy.

Third, children and young people should learn to understand that it is possible to plan. This includes the importance and feasibility of family planning. When children leave school, at whatever age, they need to understand the importance of planning the first pregnancy in terms of the benefits (health, social, and economic) that planning can bring to them and their children. They should understand also that, ideally, children are born out of a conscious, carefully thought-out decision on the part of loving parents. The concept of planning should be taught early and is one of the most important in population education.

The fourth concept to convey is that behaviour has consequences. Since individuals can usually control their behaviour, they must accept responsibility for its consequences. If adolescents behave irresponsibly, for example, in the area of reproductive behaviour, they should understand that the consequences may have lifelong implications.

Finally, children and young people need to learn how to withstand social pressures. These may come from peers in societies where early adolescent sexual activity is prevalent; pressures can also come from parents or other relatives and neighbours who

expect young couples to have their first child as soon as possible after marriage. Population education should help learners to recognize these types of social pressure and help students to deal with them in a responsible manner.

Education of this type is not easy to convey. It is complex and demanding for teachers. Some new approaches to teaching and learning now being developed can contribute to the relevance and quality of the educational process itself. For example, well-reasoned decision-making, the development of a critical awareness and a strengthening of self-esteem provide the learner with an opportunity to clarify and reinforce values. Population education offers education systems the kind of interdisciplinary and holistic approach to a topic that they may otherwise lack. It also reinforces similar approaches in other fields related to the quality of life such as environmental and health education, while at the same time helping to improve links between the school and the community. When it is successful, population education can be a rewarding experience for pupil and teacher alike.

There are, of course, countries that are not experiencing rapid population growth and some in which an increase in population may even be considered desirable. However, as population education should always be relevant to the demographic and economic situation of a country, *all* countries can use it to enrich the quality of their education as a whole.

Population education and women's issues

Population education can play an especially important role in facilitating the understanding of women's issues and fostering the improvement of the situation of women. While women constitute half of the world's population, they make up 63 per cent of adult illiterates. The problem of access of women to general education and, therefore, also to population education, is particularly acute in Africa. This is why the pre-Jomtien regional consultation held in Dakar (November 1990) identified women as *the* priority group for Education for All action in Africa.

The concepts of 'population education' and 'improvement of the situation of women' are closely related. The essential common factor is that of the integration of women in development activity. The time has come for explicit recognition of the role of women as active agents of development. Population education is based on two main concerns, one for the family and the individual, the other for the major demographic trends. Women are at the centre of both. Through marriage and procreation, the woman is at the heart of the family and also of demographic change. As an individual, she must develop self-confidence and self-esteem. In particular, she needs to be perceived by society as a full human being.

As already mentioned, population education comprises a range of topics and inter-disciplinary areas of the curriculum, including demography, human ecology, education on sex, family life, and nutrition. It is obvious that studies in such fields have close links with the status and role of women. Similarly, the search for ways of protecting the environment and improving health and nutrition in any given area pre-supposes a study of the role of women and identification of their needs in terms of knowledge, technologies and financial resources. In Africa, for example, the demographic scene is largely governed by factors such as early marriage (under 20 years for girls), polygamy and repeated child-births (the majority of women bear some five or six children, of whom two or three are girls). These social patterns exact a heavy price. Among adolescents, pregnancy is an all too common cause of girls dropping out of school. Often dropout occurs among academic under-achievers with the result that the education of these young women is cut short and their life options become limited. High infant and maternal mortality rates are also common consequences of early marriage and repeated child-births.

It is imperative to take action to ensure that all adults, especially women, are able to access information vital for their individual and collective well-being. Population education and education relating to 'women and development' are powerful vehicles which reinforce each other in transmitting this information.

Box 7.1 *Eliminating Discrimination against Women*

Article 10 of the *Convention on the Elimination of All Forms of Discrimination against Women* prescribes several educational measures to enhance gender equity:

States [...] shall take all appropriate measures to eliminate discrimination against women in order to ensure to them equal rights with men in the field of education and in particular to ensure, on a basis of equality of men and women;

The same conditions for career and vocational guidance, for access to studies and for the achievement of diplomas in educational establishments of all categories in rural as well as in urban areas; this equality shall be ensured in pre-school, general, technical, professional

and higher technical education, as well as in all types of vocational training;

Access to the same curricula, the same examinations, teaching staff with qualifications of the same standard and school premises and equipment of the same quality;

The elimination of any stereotyped concept of the roles of men and women at all levels and in all forms of education by encouraging co-education and other types of education which will help to achieve this aim and, in particular, by the revision of textbooks and school programmes and the adaptation of teaching methods [...]

(United Nations, 1979)

Introducing new content and methods in population education

Population education is important for people of all ages. In addition to primary and secondary school pupils, it should also be directed to out-of-school youth and adults, including those who are illiterate, and to community leaders and professional groups closely associated with social ser-

vices. Although in many countries it is important to make special provision for women and girls, this should not be to the detriment of educating boys and men, too.

In the past, primary school-age children were considered to be too young for such exposure, but it is now recognized that attitudes and beliefs are formed early in life, and that they can be influenced from a young age. Children's questions form a particularly meaningful basis for population edu-

Box 7.2 *Integration of population education into post-literacy programmes in Morocco*

The primary object of this project is to reinforce the ability of executive staff at the Ministry of Craft Trades and Social Affairs to plan and administer educational activities covering population questions in literacy training programmes. It was launched in 1987, with funds from the United Nations Population Fund (UNFPA) and is implemented by UNESCO.

To date the project has produced and distributed 60,000 copies of a reading manual and 1,200 copies of a teacher's guide. These cover subjects such as the structure and dynamics of the population, parental responsibility, health of the mother and child, family planning, social roles, development, the environment, civil status and censuses. Some 3,000 copies of three posters have

also been printed, dealing with family planning, the environment and the integration of women into development.

Thanks to this project, 15 members of the teaching staff at the National Institute for Social Action, 47 regional representatives, 73 supervisory staff and 280 primary level teachers responsible for adult education, have received training in the area of population and demography. Some 60,000 adults and 240 students have been trained.

Source: Cheblowska, K. (1990) *Literacy for Rural Women in the Third World*, Paris, UNESCO

cation, and teachers and parents alike should not side-step questions such as the perennial 'Where did I come from?' However, answers should not be too complicated for a young child to understand.

Teaching methods based upon class discussion of questions raised by pupils as well as by the teacher have proved effective in teaching population questions and issues. Such methods can help to clarify values, promote learning-by-doing and involve learners in practical experiences that make them aware of their feelings, ideas and beliefs. Although these methods are no more expensive than conventional methods, they do draw more heavily on the time and imagination of the teacher.

While young learners have several years to develop the ability to analyse population issues and see their role in shaping these issues, adults and out-of-school youth need to understand the immediate relevance of population issues to their daily lives. They are already at reproductive age and need sufficient information to enable them to control their own fertility and to make other population decisions such as those relating to migration. For this latter group, the content should be specific to their immediate needs and should provide appropriate education in an adequate and timely fashion to young adults of both sexes, for instance, couples about to be married.

During the 1980s, several important developments and redefinitions took place in population education. As a result, the relationships between population education and sex education, family life education and environmental education are now more clearly understood. In addition, the objectives of population education, including those concerning fertility, mortality and migration, have become more precise. New content has been incorporated into programmes, such as responsible parenthood, family planning, self-esteem, adolescent fertility, and prevention of Acquired Immunity Deficiency Syndrome (AIDS). Similarly, learning experiences have been designed to eliminate stereotypes contributing to discrimination based on gender. Once they are documented and evaluated, all these developments occurring at different paces in different parts of the world will un-

doubtedly be of great value in planning new activities and in improving ongoing programmes worldwide.

A continual problem is how to update the content of population education, particularly in terms of addressing difficult or controversial issues such as human sexuality, adolescent pregnancy (which is often followed by illegal abortion) and gender roles, rights and responsibilities. Of these, perhaps adolescent pregnancy is of greatest concern because it is emerging as an issue in a large number of countries, many of which have limited experience in developing educational approaches to deal with it. This is a particularly complex problem in Asia, with its diversity of cultures, requiring research to determine appropriate approaches in each case. A different problem exists in sub-Saharan Africa, where traditional practices are not bound by national borders, resulting in different family patterns and other cultural differences within the same country. One promising approach to the prevention of adolescent pregnancy involves the early identification of girls and boys with learning difficulties and those who are difficult to reach and teach due to discipline problems and truancy. These are precisely the children most likely to drop out of school early. Systematic identification and focused attention in a positive atmosphere can guide these young people towards responsible behaviour and to a better standard of life.

Among the most important aspects of population education are those which concern gender-role stereotypes and responsibilities. A few countries have started to address the need to develop adequate approaches, concepts and materials on gender roles and issues, and UNESCO is doing pioneering work in this area in Latin America. The development of teaching materials concerning gender roles must obviously be accompanied by the parallel development of materials designed to train teachers in the techniques of population education. Finally, the question of what content can effectively be inserted into crowded curricula needs to be carefully examined. Good materials have been developed in many countries, but do not always find their way into textbooks or other required reading materials.

Teacher preparation

Population education is complex and demanding on teachers. It is not just a question of mastery of new content, but also of new values, attitudes and behaviour. It is often difficult to find curriculum time and space within and between the various subject areas for population education in teacher education programmes. Both pre- and in-service courses should be participatory and have direct application to teachers' professional activities. Many population education programmes did not, for several years after their launching, include a pre-service training component. As a result, new teachers coming into the system were not exposed to population education through their teacher-preparation course. It is now clear that population education must be integrated into pre-service training and appropriate in-service activities.

Wherever population education has been introduced simultaneously at several different grade levels and in more than one subject, it has been necessary to train many teachers at a time, and this has required substantial financial resources. In addition, it has often been very difficult and time consuming to change traditional attitudes. Many teachers have had only limited professional training to start with, and both the content and the teaching methods in population education are new and more complex than in traditional subjects. However, programmes in several countries (e.g. El Salvador, India and Paraguay) have demonstrated that the development of new teaching skills through involvement in population education can make the task of teaching, in general, more interesting for teachers.

The training of field workers for population education aimed at out-of-school youth and adults poses a problem. UNESCO provided a forum for many countries of Asia and the Pacific to explore how each country might best proceed to train the huge number of teachers, adult literacy instructors and field personnel of various types working in this area. A review of experiences revealed that the training modalities widely used in that region included training by mobile teams, peer group training, distance training through radio, television

and correspondence, field operational seminars and internship programmes, as well as more traditional methods.

Examples of population education programmes

Population education, which is today one of the most rapidly growing educational innovations in the world, began to be accepted by governments in developing countries in the late 1960s and early 1970s. At that time, however, only a few countries had initiated national population education programmes in their school systems. By the mid-1980s, some 80 countries, and today more than 100, include population education in their schools. Within and between regions and countries, population education has been defined differently, and curricula reflect varying concerns. In some cases, the aim was to reduce population growth, while in others the main concern was improving health or lowering adolescent fertility. The titles of programmes – including family life education, sex education, quality of life education and population education – have generally reflected the area of greatest emphasis.

Some of the first programme efforts of the late 1960s and early 1970s were undertaken in Asia and the Pacific (India, Malaysia, the Philippines, Sri Lanka, Singapore and Thailand). Whereas the Asia region had no sex education programmes in the 1970s, by the late 1980s Thailand, the Philippines and several South Pacific countries had incorporated family life and sexuality content into their population education programme. These countries are now concentrating on incorporating the new programmes into the regular provision of all relevant institutions and on improving content. They are also developing prototype materials, refining teaching methodologies, adopting cost-effective teacher-training strategies, and including monitoring and evaluation as integral elements.

In Latin America and the Caribbean, population education started through work in sex education. This early orientation influenced the region's approach, so that balanced attention was eventually given to demographic, ecological and sex education

issues. Had these early efforts in sex education not taken place, the content of current population education might have focused more on broad demographic concerns, possibly to the exclusion of individual and family life issues, and it might not have experienced the widespread acceptance it has received. Current concerns in population education include expansion to national coverage, modernization of population education content and evaluation. The Dominican Republic, El Salvador, Nicaragua, Paraguay and Peru are in various stages of building the content into their national curricula. Prototype teaching materials have also been designed at the regional level.

In the Arab States, Egypt and Tunisia have long-standing programmes that have captured the interest of other countries. The preparation of reference materials in Arabic has contributed much to these efforts. In sub-Saharan Africa, though concern about problems of adolescent fertility was already being expressed in the 1960s and 1970s, little attention has been given to ways of modifying adolescent behaviour. Moreover, as rapid population growth has not been widely perceived as a problem, population education programmes deal largely with education for development, environmental issues and family life education. More recently, improved pedagogical skills have permitted a sharper focus on attitudinal and behavioural change, with increasing attention to the prevention of adolescent pregnancy, rapid population growth and AIDS.

The experience of the national population education programmes currently under way throughout the world (of which there are more than 100) has yielded valuable lessons, not least that population education is a complex undertaking. Not only do the aims of the programmes vary from country to country, but so do the strategies for carrying them out. Population education is often difficult to introduce, and it is typically slow to produce results; like other educational innovations, it needs time to mature. The introduction of population education into school systems has faced many obstacles that are common to all educational innovations: large, cumbersome and overburdened education systems; financial difficulties; inade-

quately trained personnel; limited supply of materials; shortage of staff; and resistance to change. Problems that have arisen specifically in introducing population education projects include the controversial nature of many of the topics as well as the sensitive character of some of the issues (such as sexuality and contraception). Often educators themselves have serious concerns at the outset about how to teach such subjects. This is a particular problem in those countries – indeed, most of them – where better training is hampered because of limited funds.

Other difficulties have arisen because different groups want to emphasize different content and approaches. For example, educators may want to focus on developing basic thinking and decision-making rather than on conveying specific messages, whereas family planning officials may want to convey specific messages on family size. Problems specific to population education also stem from the interdisciplinary nature of many of its topics, in contrast to the usual separation of content into discrete disciplines. Similarly, traditional teaching methods are rarely adequate for population education. Special problems occur, too, because of the need for close co-ordination among many groups and the occasional resistance or opposition to population education by policy-makers, education officials, teachers, parents – usually a result of misconceptions and misunderstandings.

Population education has not undergone a long period of testing; its rapid adoption and the limited number of educational leaders with extensive experience in this field have hampered progress. Furthermore, as in other areas of education, some of the results of population education occur out of the classroom, at a later time, and are thus difficult to evaluate. Attempts are under way to develop methodologies for long-term evaluation, but it will be some time before results are available.

Most school population education programmes are operated on a large-scale under the direct authority of a ministry of education. This facilitates their introduction because the national authority can give them priority and can rely on the existing education system for their planning and implementation. Basic decisions needed at the planning

stage include setting the levels of schooling and the specific grades at which to introduce population education. Ideally, it should be offered in all grades of primary and secondary education. However, introducing population education at all levels at once, as was done in India, the Republic of Korea and Thailand, is usually difficult and costly, particularly in terms of teacher training and materials production. A phased introduction has been found to be more feasible, giving the local staff experience to draw from as they expand the programme.

Experience has shown that the introduction of population education requires action by high-level policy-makers and planners, not just by educators alone. In many countries, the initial promotion of population education originated from a few individuals. Decision-makers may first react to the idea with indifference or even opposition. Thus the starting point is to develop consensus on the desirability of population education and to overcome opposition. Several countries, among them Yemen and Peru, have successfully addressed this challenge by holding a national seminar or a series of seminars for officials from all government agencies engaged in programme implementation. In such seminars, working groups discuss national population issues and the contents and methods of population education. Through this motivational process, consensus in favour of the innovation can be built. A complementary strategy used in some countries has been to make the public aware of the issues and of the need to address them in the school curriculum. An excellent example can be found in Burkina Faso, where participatory theatre is used at the community level. Seminars with religious leaders and media personnel can help build support. Other ways of generating public awareness such as newsletters or national fairs, as in China, have also proved useful.

Countries have found various ways to handle controversial issues in the curriculum. For example, surveys can be conducted to ascertain the nature and extent of opposition, as was done in the Philippines. Often such surveys reveal that the opposition is much less severe than it appeared to be initially. Because it is easier to prevent opposition

before it builds up than to deal with it after it has begun, some countries have organized massive national campaigns to forestall potential opposition. For example, a mass effort to make the public aware of the problems associated with teen-age pregnancies was organized in the Seychelles in 1979. Elsewhere, as in Colombia and the Philippines, active or potential opponents have been involved in the preparation of the curriculum. Meetings with parents and community leaders have also been held in the Dominican Republic and in Ecuador to clarify controversial concepts.

A range of management problems has been found to play an important role in the implementation of population education programmes. Two particular problems are common. One is how to ensure that the various people and institutions involved with population education have adequate access to appropriate information; current information on research results, census reports, policy changes, etc., must reach them rapidly. The second problem is that of co-ordination. This is a particular concern because various units within and outside ministries of education are involved. Links between formal and non-formal activities are especially important; where these are lacking programmes can be seriously hampered.

In the early years of population education programmes, monitoring and evaluation were given little attention, although many projects included some monitoring to comply with requirements of external funding agencies. Although the resultant information on the evolution and history of projects has been used to a certain extent to revise activities, monitoring has seldom served programme staff as a management tool. One way to improve population education programmes is to ensure that monitoring and evaluation become an integral and useful part of programme management.

External assistance for starting population education programmes in developing countries has been provided with the ultimate aim of building them into the prescribed school curriculum. Bearing in mind that introduction takes time, and it is not long since the first programme was launched, it is not surprising that few countries have yet succeeded in integrating population edu-

as well as by the public at large. Much remains to be done to change deep-rooted negative attitudes so that basic learning needs relating to population issues can be effectively addressed through education.

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8. Health in Education for All

Health education is a process based upon scientific principles which employs planned learning opportunities in order to enable individuals, acting separately or collectively, to make and act upon informed decisions about matters related to health.

European Symposium on
'Health Education in Pre-Service Training
of Teachers', 1986

The link between 'Health for All' and 'Education for All'

Health is a vital part of the basic learning needs of both children and adults. Developed and developing countries alike should provide health education for people of all ages, in school and out of school, including adult literacy programmes. A 'call for action' to identify and meet the basic health needs of all population groups was issued at the Jomtien Conference.

The twin goals, 'Education for All' and 'Health for All', are inseparably linked. Both are human rights and must be achieved concurrently. Good health is essential for effective learning, and education is a powerful means of enabling children and adults to attain and maintain good health. Studies have shown, for example, that an educated woman is more likely to act decisively in matters of family health, to take appropriate steps to improve nutrition and to seek care in time of illness. A study conducted recently in the United States involving more than 30,000 children in twenty different states

demonstrated conclusively that good health education programmes can achieve significant gains in both health and education.

In addition to benefiting children directly, health education can have an important multiplier effect on the community. When properly encouraged, children themselves become excellent health managers and activists within their own families and communities. Thus, effective teachers can be an invaluable resource for health in the community as well as in the school. This is of special importance for the developing world where school teachers outnumber health workers by five to one.

Formulating national policies on health education

Health education programmes can be part of an effective strategy for achieving important social goals. Thus, the *Framework for Action to Meet Basic Learning Needs*, adopted at Jomtien, invites countries to set targets for the 1990s. One suggested dimension is:

Expansion and provision of basic education and training in other essential skills required by youth and adults with programme effectiveness assessed in terms of behaviour changes and impacts on health, employment and productivity. (*Framework for Action*, para. 8.5).

A key prerequisite for the establishment of such programmes is the formulation of national and local policies on an intersectoral basis. Obviously there must be close collaboration between the

This chapter is based on material presented or available at the Roundtable entitled 'Health in Education for All: Enabling school-age children and adults for healthy living for children and adults' (T5), organized by the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO).

The Roundtable was chaired by:

Ali Fakhro
Minister of Education, Bahrain

The presenters were:

Dennis Tolsma (Moderator)
President, International Union for Health Education
Olikoye Ransome Kuti
Minister of Health, Nigeria
S.W.M. Perera
Director, Health Education and Publicity, Ministry of Health, Sri Lanka
Paz Ramos
Professor Emeritus, University of the Philippines

Komlan M. Siamevi
Director-General, Ministry of Health, Togo

Papers used in the preparation of this chapter and available at the Conference included the following:

Health in Education for All: Enabling school-age children and adults for healthy living by Division of Health, WHO
Health Education of School-age Children in the Americas by H. Ogden
School Health Education in European Schools: an overview by Trefor Williams
Health Education for School-age Population in Sri Lanka by S.W.M. Perera
Health Education for School-age Population in Nepal by C.B. Thapa
Health Education for School-age Population in Thailand by Somkuan Shampoeng
Health Education for School-age Population in India by K.P. Datta
Health Education for School-age Population in Indonesia by Nardho Gunawan

education and health ministries, but in some cases it needs to be much broader, involving such ministries as those responsible for science and technology, local government and the environment.

'Health' originated in an Anglo-Saxon term which meant the condition of being safe and sound or whole. In the course of time, it came to be seen in a less positive way, meaning simply the absence of disease. In recent years, the meaning has again become broader. Today it embraces physical health and hygiene, but also the mental, spiritual and social facets of human life. It follows that health education must be broadly based and include discussion of those factors that enhance the physical, emotional and social well-being of people. Seen in this perspective, the aims of health education are consonant with those of basic education. In practice, however, much teaching about health occurs as an incidental addition to other subjects, instead of as a planned part of the learning process.

National policies have been formulated and implemented in many countries with a view to

relating health education to local cultures, customs and attitudes. An example of one such effort on a broad intersectoral basis is provided by Sri Lanka. In 1978, the Ministries of Health and Education organized a seminar on health education for all regional directors of health and of education. This led to the formation in 1980 of a National Health Council with the Prime Minister as chairman. The Council comprises representatives of fourteen ministries, including Co-operatives, Indigenous Medicine, Textiles, Fisheries, Local Government and Local Industries, as well as Education and Health. It is charged with identifying major health problems and finding solutions to them. For example, diagnosis showed that 60 per cent of school children were anaemic and many were suffering from thyroid deficiencies. Working together with all its constituent ministries, the Council was able, through the school health authorities, to help remedy these deficiencies. The parallel efforts of those concerned with education and those with health, coupled with the political commitment the

Box 8.1 *The Co-operative School Health Education Programme in the Philippines*

In the Philippines, educators have a great concern for the full development of the individual in his or her total environment, bringing into focus the role of health in education. The UNICEF-WHO assisted National Co-ordinated School Health Education Programme was launched and operated jointly by the Department of Education, the Department of Health, the University of the Philippines and the Philippine Normal College. Its aim was to ensure that every child, whatever his or her economic background, should attain the highest possible standard of health.

The initial activities were planned on the assumption that the best results could be achieved if senior health and education personnel were fully convinced of the

need for improvements. Three summer institutes were held involving school doctors, dentists, supervisors and classroom teachers. Participants in these institutes provided leadership in subsequent provincial and municipal conferences. Guidelines for health education were drawn up, with variations for different parts of the country. Pilot programmes were set up in schools to serve as demonstration centres for in-service and pre-service education of teachers and health personnel, and a massive training and re-training programme was established. The success of this programme was due to the major national effort backed by strong political commitment and community support.

government has invested in the Council, have been the keys to success.

Health education in schools

In 1978, WHO and UNICEF co-sponsored an international conference (Alma-Ata, USSR), attended by delegates from 134 countries, to define the principles of primary health care and the role of governments and of national and international organizations in promoting its development. The Declaration of Alma-Ata stated that primary health care includes: education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water; maternal and child health care, including family planning; immunization against major infectious diseases; prevention and control of local endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs.

It also emphasized that primary health care is the key to attaining the target of 'Health for All by the Year 2000'. Delegates to the conference affirmed that 'the education sector [...] has an important part to play in the development and operation of primary health care'. Indeed, schools could

help provide all of the components of primary health care listed above and could ensure that young people 'be educated to have a good understanding of what health means, how to achieve it and how it contributes to social and economic development'. (World Health Organization, 1978)

There are over a thousand million school-age children in the world today. The world's education systems could influence the health of millions of children in their most formative years. Schooling thus presents a great opportunity for disseminating health knowledge, developing appropriate values and attitudes, and encouraging healthy behaviour patterns. As indicated at the beginning of this chapter, health education is a process. It involves learning out of which arise decisions which lead to actions. Conventional health education has concentrated on the individual, attempting to influence and change behaviour – irrespective of the myriad of social, environmental and political influences and pressures. However, there is growing recognition of the importance of seeing the individual pupil in this wider context if the learning process is to become really effective.

The International Union for Health Education has stated its position on school health education in a policy paper which underlines the following principle:

Any subject, whether AIDS or tobacco or nutrition [...] is best taught, not as a single stand-alone course, but rather within a more comprehensive school health education programme that provides planned sequential education about health at every grade level, that focuses on behavioural skills (e.g. decision-making, communication skills, negotiation skills etc.) and that consequently establishes a foundation for understanding relationships between personal behaviour and health. (*Hygie-The International Journal of Health Education*, 1988)

The 'health promoting school' is increasingly being used as a unifying concept for the many aspects of health education. There is a tacit recognition that health education does not end with schooling – but that its effect and influence on pupils is greatly intensified by the supportive network of school, home and community. In its simplest sense the 'health promoting school' is a force for the dynamic interaction of three strands – the classroom, the school community and the local environment. Its main characteristics are described below:

What children learn in the classroom through the health education curriculum depends for its effectiveness on the nature of the curriculum itself and the skills of the teachers.

What children learn incidentally from being in a school community through its ethics, policies, physical structures, regard for human relationships and dignity, should support and provide further development of what is taught in the classroom.

What children learn from their environment – through living in families, through contacts with other influential groups, through the media, and through the activities of the school health service and other health related services such as hospitals and public health campaigns – complements the other two strands.

The successful health promoting school is able to co-ordinate all these opportunities to learn to the best possible advantage and to focus all relevant influences on promoting the health of pupils and teachers. All too often, where there is excellent learning and teaching in the classroom related, perhaps, to tobacco or nutrition, the messages and influences are undone by bad experiences in school canteens or by the lack of coherent public policies with regard to smoking. Children learn more from

example and from good role models than from textbooks.

The concept of the 'health promoting school' is still in its infancy. Teachers can be encouraged to look critically but positively at their own schools and assess where short and long term initiatives might be taken and changes made. A short checklist against which schools can 'measure' themselves was assembled for European schools by a team of writers from the Netherlands, Spain, France and the United Kingdom. It comprised some twenty items. These can be used on a sliding scale, basing the assessment upon three vital questions: Does the school have a health education curriculum? Is the curriculum backed by the policies and ethos of the school? Are there constructive links with families and the community?

The health education curriculum is a key factor in improving health education. Some basic principles for developing a good curriculum concern the identification and, above all, the progressive development of key topics throughout the school career of students, using different strategies appropriate to their progressive stages of development. This is sometimes called the spiral approach to curriculum planning. As in other facets of the curriculum such as science and technology education, it is important to start where children are in their perception of a particular topic. They come to school with their own ideas about health topics, and these can provide important starting points in their own learning. It is important to use a wide variety of teaching and learning methods, including opportunities for taking decisions which lead to practical action.

Each country needs to draw up its own list of essential topics for health education. Furthermore, regional and local variations will be necessary. The following list, which comes from the Philippines, provides an example of such topics: human growth and physical development; personal health; prevention and control of disease; community health; drug abuse; consumer education; growth to maturity (including sex education); nutrition; mental and emotional health; and first aid.

Regional surveys of health education have been undertaken during the last decade, in Africa, Asia

and the Pacific, Latin America and the Caribbean, the Arab States, and in Europe and North America. The findings reveal inadequacies common to all. There has been a general tendency to give health education low priority. Teacher preparation and motivation have often been inadequate. Teaching methods are mostly didactic and teaching material meagre. Countries reported that it is usually easier to implement health education in primary schools than in secondary schools because of the overloaded curriculum in the latter. However, some serious regional and national efforts are now being made to develop meaningful health curricula. While certain curricula aim at a comprehensive coverage of health to meet the particular needs of different age groups, other curricula focus on priority health problems such as child survival and development, malnutrition, drug abuse, water and sanitation, and now AIDS.

A study of health education in twenty European countries revealed that the health issue which has galvanized European governments into action more than any other is that of drug abuse. School health education was reborn in the 1980s, driven by the anxiety of governments about the abuse of drugs among children and young people. School health education has become an important part of the struggle against the narcotics trade. Practically every European country has been stimulated to respond in some way. For example, in Sweden, in the early 1980s, Alcohol/Narcotics/Tobacco Co-ordinators were appointed at regional levels. Their role was to mobilize school and community efforts and to identify the most effective modes of health education. In Germany, school counsellors have the task of initiating and co-ordinating appropriate action at school to combat and prevent drug addiction and, in certain cases, of offering personal advice to pupils and parents. Research and evaluations of these and other widely ranging activities have furnished the basis for the principles which now guide the European school health movement.

These regional surveys showed that health education is often integrated with other subjects. Most frequently, it is integrated with science, physical education, home economics and the social sciences. At the primary school level integration should

present no major problems where each class has a single teacher responsible for covering the whole curriculum and who knows each pupil well. The core elements of a standard curriculum provide many opportunities for developing health education themes and topics. Indeed, health education can enhance some traditional curriculum areas by providing a relevance to children's own lives, a dimension often missing from conventional teaching. It can thus provide motivation to learn through linking with matters of consequence to them, such as the health of their family and friends. However, if care is not taken, the health messages and the skills associated with their translation into action may become muted because of the dominance of the host subject. Another drawback of curriculum integration is that it may impede implementation of the spiral health curriculum.

The integration of health education with the curriculum as a whole poses more problems at the secondary school level because the pattern of learning is usually based upon subject teaching. Of course health education can be integrated into several subjects, each taught by a different teacher, but this poses a problem of co-ordination. Care must be taken to ensure that important aspects are not left out and that unnecessary and boring repetition is avoided. Another difficulty is that the secondary school curriculum tends to be dominated by examinations, so subject teachers are reluctant to give time for non-examination aspects of the work. There is clearly a need for a 'health education base' within the curriculum. Often this base is science but the problem remains that even science teachers may not be able, willing or have time to deal with anything other than teaching about health. Yet, some schools draw together the diffuse strands of health education through special projects and health days or health weeks.

Links between school and community have been established in many countries to address health issues. School premises are used as temporary health posts and as centres where teachers and students can bring a better understanding of healthy living to the community. School children and teachers have played an active role in many national immunization campaigns. In Senegal and

in Syria, thousands of school children have made house-to-house visits to encourage parents and children to accept immunization. In Turkey, some 70,000 teachers helped encourage parents to have their children vaccinated during a national campaign in 1985. Children and teachers have also helped to promote oral re-hydration; for example, they organized oral re-hydration treatment centres in schools in Bolivia and in Tanzania. Teachers and students in Côte d'Ivoire formed a theatre group and performed sketches on immunization and oral re-hydration therapy. Such activities are not only beneficial in themselves, but involve children directly in action of a very positive kind.

As already indicated, the problem of drug abuse has galvanized many governments into action, not only those of industrialized countries. In the Philippines the ASEAN Centre for Education in the Prevention of Drug Abuse has been developing health education programmes to tackle the drug problem for over two decades. Around the world, ministries of education, aided in many cases by health ministries, have provided schools with a plethora of material resources. They have taken initiatives to enrich the curriculum and to develop community-school strategies. Some projects designed to tackle the alarming increase in the consumption of alcohol, tobacco and other dangerous drugs by young people are conducted as an extension of the school curriculum, with out-of-school activities reinforced by the mass media and supported by parents and youth clubs. In all these efforts, one important aim is to increase self-esteem, to improve decision-making skills and to develop the ability to cope with psychological stress in other ways than by using drugs.

By the mid and late 1980s, AIDS had joined drugs as another fearful health problem. Some of the principles which had been used to combat drug abuse have been used in tackling this new scourge. To help authorities launching national AIDS education programmes, WHO and UNESCO are supporting pilot projects in countries in Africa, Latin America and the Caribbean, and the Pacific. Project activities include the development of curricula based on what is now known about attitudes, behaviour and the concerns of children, but cur-

ricula that are nevertheless sensitive to local culture and acceptable to parents. These projects make use of a variety of educational techniques, including drama, art and song, as well of special booklets and printed material.

Health Education for Out-of-School Children

According to UNESCO estimates, in 1985 over 100 million children aged 6-11 years received no formal education. About 70 per cent were in the least developed countries and 60 per cent were girls. If enrolment trends continue, by the year 2000 the number of out-of-school children will almost double to 200 million. Against this grim background, the authorities pursuing the goals of 'Health for All' in each of the countries concerned will be looking for ways of providing health education to the huge numbers of children who cannot be reached through schooling.

'Out-of-school children' include orphans and children from underprivileged families. Some may have dropped out of school, but most of them never attended school. For all of them the essential problem is survival. Self-preservation and the demands of the family, if there is one, thrust adult responsibilities on them prematurely. Nevertheless, they have the right to education.

Among the out-of-school children are the 'street children'. It is estimated that there are 30 million street children in the world, victims of poverty, war, civil strife, and loss of parents. Half of the 30 million live in Latin America: seven million children alone live in the streets of Brazil's cities and towns. Community-based organizations have devised ways of reaching out to these children. In 1981, UNICEF, the Government of Brazil and the National Child Welfare Foundation initiated the Brazil Street Children's Project. It operates in seventy different locations with varied activities all directed to common goals. The project seeks to gain the confidence of the children, to provide meals, to arrange for health care and encourage ways of earning money. The main emphasis in all the activities is to encourage the child to become a decision-maker. It is of vital importance for the full development and

well-being of the child to build self-esteem and confidence and to ensure proper physical growth.

Brazil's experience illustrates different ways of meeting the health needs of street children. Their physical, mental and social needs require special study. A sound attempt to succour these unfortunate children, including an appropriate health education component, can then be planned. The lessons learnt from approaches like those of Brazil highlight the need to allow the children to make their own decisions about their health and ways of life. The responsibility of the health and the education services is to provide them with the necessary knowledge and skills, as well as an appropriate environment, for them to do so wisely.

Underprivileged children in urban areas who, with their families, struggle for survival, often do not value schooling, nor can they afford it. There has been an alarming increase in the number of poor urban families due in part to the growing migration from the rural to the urban areas. Far too many children either become 'street children', driven to engage in illicit activities or exploited as cheap unskilled labour, condemned to live in slums with no social identity or hope of escape. In a number of countries efforts are now being made to reach these children, often making use of the experience of Brazil.

Another group of children who do not go to school are those from poor families in rural areas where child labour is still regarded as an essential part of the way of life. Children, especially girls, are needed to carry out many daily activities such as collecting firewood and fodder, grazing animals, carrying out household chores and minding younger children. Being poor and female are two major reasons why many of these children do not go to school.

Countries are grappling with this problem in various ways. For example, the Bangladesh Rural Advancement Committee (BRAC) is a voluntary agency trying to educate very poor rural children who cannot attend government schools or who do not stay in school. In some 2,500 villages throughout Bangladesh, children between the ages of 8 and 10 study under the BRAC Alternative Primary Education Programme. In the equivalent of grades

1 to 3, they learn to read and write and work with numbers, and they are taught science, social studies, health and hygiene. The programme offers a curriculum appropriate to rural culture and needs, one that can be taught by para-professionals recruited from the community and one that parents are eager to support with their time and labour. The learning environment does not alienate rural children: school hours are adapted to local conditions, and parent groups supervise the organization and management of each school centre. Some 60 per cent of the pupils are girls and the majority of teachers are women. The retention rate throughout all three years is very high, and almost all the children go on to continue their education in government schools. The plan has succeeded so well that it is to be extended to other parts of the country.

In Nepal, a non-formal education programme is being promoted as a means of catering for the needs of children who are out of school, including school drop-outs and illiterate youth. The objectives are to develop positive attitudes towards health and related subjects and to inculcate positive values towards personal and community development. Both governmental and non-governmental agencies are involved. Teaching/learning materials have been prepared for use in various non-formal education projects, especially for girls in rural areas.

Adult literacy and adult education programmes

Adult literacy programmes focused on health promotion are being carried out in many countries around the world. Sometimes the initiative and support come from specific concerns such as nutrition, family life or AIDS. In other cases they may integrate activities to meet more than one need: for example, a self-reliance and literacy programme in Bangladesh seeks to help the landless, the young and women. Education, health, family planning and income-generating activities are all incorporated in it. In Ecuador, a project uses key words such as 'doctor', 'vaccine', 'food', 'medicine' and 'anaemia' to teach literacy. These words are then used to stimulate discussions on health.

Guidebooks for instructors contain information on local health problems such as malnutrition, respiratory infections and intestinal parasites. They also help teachers to conduct discussions, answer questions, and suggest solutions to the problems of learners.

In 1985, the World Health Assembly adopted a resolution on women's functional literacy, health and development. It called upon the member states of WHO to show greater concern for women's health and nutrition, to assist women to carry out their roles as providers of health care and to give women opportunities to contribute to the achievement of the goals of 'Health for All'. In 1988, WHO initiated a project entitled 'Promoting Health through Women's Functional Literacy and Intersectoral Action'. The project was launched initially in Ghana, Nigeria, Zambia and Zimbabwe. Similar projects have now been established in Egypt and Gambia. The activities of these projects focus on improving the health and the quality of life of the community. They seek to encourage communal participation in functional literacy, in income generating activities for women, as well as in the improvement of the environment. The staff of the projects from the different participating countries meet together annually to exchange information, to consider progress made and to discuss the problems they have encountered.

Other programmes have been aimed specially at mothers and pre-school children. In India, for example, as part of the country's integrated child development services, mothers can come to health centres where they can learn about such topics as immunization, nutrition and a clean environment. The services are designed to help mothers develop good hygiene and health habits in children before they enter school.

The key role of teachers

The training of teachers in the principles and practices of health education is crucial for the success of health education programmes of all types. Teachers should understand the nature of the process of health education and how to apply it to the problems and needs of the children in school

and to the local community. There has been a real effort, particularly related to drugs and AIDS education, to improve the in-service training of teachers, but in general, less attention has been given to health during pre-service teacher education. Health, as a rule, has been linked mainly with biology and integrated science teaching, and to a certain extent, with home economics and physical education.

While there is now broad agreement that health education should find a firm place in the pre-service training of teachers, pressure on teaching time and the lack of suitable trainers pose problems. However, some countries such as the Philippines, have made massive efforts to provide both in-service and pre-service training for teachers as well as for other key personnel in public health and health education. There is also a masters degree programme in school health education for those who will become teacher trainers.

The availability of good teaching material is very important. UNICEF, working in co-operation with UNESCO and WHO, has developed a series of teachers' guides to support an action-oriented primary school health programme for five countries in the Middle East - Bahrain, Egypt, Jordan, Morocco, and the Sudan. There are six volumes for the first three grades of primary schooling: they cover some twenty-two topics ranging from simple human anatomy to first aid and oral rehydration therapy. The guides are now being taken up in several other countries of the Arab region as well as in Nigeria, Sierra Leone and China.

Teachers can have an important role to play in helping to detect physical and mental disabilities when children first enter school. Children suffering even from mild deafness, dyslexia, malnutrition and various deficiency diseases have impaired learning capacity. Early detection followed by remedial treatment can make all the difference to educational achievement (see also Monograph II, chapter 3). In some developing countries, for example Bolivia, efforts are being made to encourage teachers to become health promoters for the whole community and society. These countries may not have enough doctors, but teachers are to be found everywhere, even in remote rural areas.

Some innovative strategies

The 'Child-to-Child' Programme, pioneered in the United Kingdom and adopted in many developing countries, is based on the fact that many children spend much of their time caring for their younger siblings. In developing countries the youngest children pay the highest price in terms of illness. The main causes of infant mortality include malaria, diarrhoea, respiratory infections and infectious diseases, most of which are due to unhygienic conditions and malnutrition. All are, to a greater or lesser extent, subject to prevention or alleviation by public health education. Children are receptive to new ideas and have abundant energy to pass them on and apply them. If they are taught sound health principles, they are better able to look after the younger children in the family, carry new ideas into the home and help to reach out-of-school children.

The 'Child-to-Child' approach is based on four principles: (i) the importance of primary health care, that is, to develop within the community and in each of its members the ability to take responsibility for improvement of their own health; (ii) confidence in the ability of children, as members of their community, to spread the messages of primary health care among their parents, their families and their communities; (iii) the importance of action – in health education every lesson should be accompanied by practical work related to health care; and (iv) the need for co-operation, that is, mutually agreed action taken by educators and health workers.

Activity sheets and other learning resources have been developed, relevant to the country in which the programme is operating. Since it was launched in 1979, the International Year of the Child, 'Child-to-Child' has become operative in over sixty countries.

In Chile 'Child Helping Child' has been running in both urban and rural schools. It has forged a close partnership between teachers and community health workers. In Colombia, elementary school classrooms in both rural and urban schools have health learning centres, where children get ideas about health and nutrition that they are encour-

aged to take home and share with parents and siblings. Schools are also used as centres for immunization, distribution of oral re-hydration salts and other preventive health measures, especially in communities lacking a health centre.

A second innovative element in Colombia is the Health Scouts Programme for young people aged about 14-17. In grades 8 and 9 they receive basic instruction about those major health problems which exact the heaviest toll among the country's young people. Then, in grade 10, they do thirty hours community service gathering health data about their own and neighbouring families. They become, in effect, health guides or health monitors for their families in disease prevention, nutrition and child development.

In the Eastern Caribbean, the Pan American Health Organization has assisted three countries and territories – Dominica, St. Christopher and Nevis, and the British Virgin Islands – to develop policies on school health education and to strengthen health education in both the elementary and secondary schools through curriculum development and teacher training. The programme was designed to co-ordinate approaches among the health and education sectors. It brought health workers into the schools to explain the importance of personal care, healthy living and good interpersonal relationships. It also gave teachers instruction in health.

In a number of Asian countries health education is promoted through the mass media to create a favourable climate in which the people become aware of health issues and are able to make better decisions for themselves. In Thailand, the infrastructure of mass media is located mainly in the capital and in some of the large cities, but radio and television are widely available in rural areas. The Division of Health Education is making extensive use of major mass media available in Bangkok. Besides conducting its own health programmes on radio and television, it also inserts health articles in the newspapers and prepares press releases for the media – both public and private. In rural areas, radio and television constitute the most effective means of reaching the population at large. With initial support from the

Box 8.2 DOKTER CECIL in Indonesia

The DOKTER CECIL programme started as a pilot project in 1980, and during the last decade it has been accepted as an appropriate approach for health education in primary schools. From the start, political commitment for it was personified by the President of Indonesia himself inaugurating the first DOKTER CECIL.

The programme is based on the idea of having groups of children who can serve as motivators for changes which will promote better health in the school, the home and the community. Peer group members are linked together in a way that encourages partnership and responsibility. Candidates to be trained as DOKTER CECIL are selected from classes 4 to 6 using such

criteria as: having leadership potential and responsibility, being ready to help others and having good personal hygiene. The students receive special health training based on a problem solving approach. They are then expected to function as motivators for health by helping to improve conditions of the environment such as sanitation and cleanliness by carrying out first aid, by extending health education through help with anti-malaria precautions and encouragement of immunization. This programme, which started in two schools in Jakarta in 1980, has since been extended to all twenty seven provinces of Indonesia.

National Family Planning Programme, eleven of the provincial health offices have obtained weekly broadcasting time from local radio stations and also from television stations in some provinces.

These examples of innovative strategies serve to emphasize the need first to identify the basic health needs of different population groups and then to meet them through well-thought-out health education and training programmes. Projects now in operation around the world, and the emergence of new and innovative approaches, do provide grounds for measured optimism that signifi-

cant progress toward Health for All can be achieved.

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9. The Way Ahead

Throughout this monograph a number of key themes and issues have emerged. They need to be further explored if Education for All, in the terms set out in the *World Declaration* and in the *Framework for Action* is to become a reality.

The purpose of this final chapter is to draw attention to some of the main questions which will have to be addressed.

The transmission and enrichment of common cultural values constitute a fundamental aim of education. Whether for individual learners or for whole education systems, learning must be culturally appropriate if it is to be effective. However, there is an apparent dilemma: cultural development but also the safeguarding of cultural identity and traditions are both key educational goals. How are curriculum planners and educators in general to provide education that supports cultural maintenance but at the same time promotes effective learning of modern knowledge? Decisions have to be made about what counts as valuable knowledge and, therefore, warrants a place in the planned curriculum. Who is to decide which aspects of traditional culture have proved to be dysfunctional and which should be emphasized? How can such decisions be reached on the basis of a genuine consultative process?

A related issue is that of creating an environment within schools and other educational institutions that is conducive to the transmission of culture in a positive way and that reinforces the dynamic nature of culture. How can the school structure and organization, the curriculum, the learning materials and, above all, the teachers contribute to

the creation of such a positive learning environment? There is also the need to resolve potential cultural clashes between school and home. Here again, solutions depend on the forging of closer links between school, home and the wider community. If the school takes account of the needs, aspirations and cultural characteristics of those to be taught, of the parents and of the community, the risks of conflict will be minimized. The impact of culture on individual learners affects the notion of learning achievement. In what ways is motivation for learning achievement rooted in local and national culture?

In designing adult literacy programmes for specific groups, one challenge is to preserve what is of value in the indigenous culture and at the same time to renew what must be renewed, especially in the light of the profound influence on society of science and technology. The content and form of such programmes are much more effective if they are determined jointly with the prospective learners through discussion of their learning needs and examination of their aspirations and constraints. An understanding of cultural factors can help this participatory process of negotiating and assessing learning needs. How can this best be carried out in practice?

Language policy is of critical relevance for the success of Education for All. Language is a fundamental factor in the interplay between culture and the educational process. Literacy in the mother tongue is desirable for many reasons at the lower levels of schooling and in adult literacy programmes. However, several issues arise in the

context of language choice. A written language is the necessary medium of literacy, but the vast majority of languages are not written, and fewer than 100 have a significant literature. In practical terms, therefore, it may not be feasible always to use the mother tongue, and the language of literacy may then have to be another language understood by the learners. Most countries are multilingual and some form of language policy must precede literacy policy. How can viable solutions be found when language policy is a hotly debated issue? Education for All implies examining language needs from the community to the national level. While mother-tongue or 'near mother-tongue' literacy may well provide the basis for initial learning, provision may need to be made for subsequent instruction in national or internationally-used languages, especially to avoid risks of social, cultural and economic isolation. Another issue to address is the development of sustainable language policies for the world's vast numbers of refugees and displaced persons.

Experience over recent decades points overwhelmingly to the conclusion that there is no single global strategy for achieving adult literacy. Organizational and methodological approaches, as well as curricular content, have to be tailored to the particular political, social and cultural conditions prevailing in each setting. Whatever the strategies actually adopted, ways have to be found to: stimulate and sustain motivation; identify priority groups of learners; make literacy functional in relation to the living conditions of the learners and of their specific goals; improve the quality of programme offerings; and sustain and develop literacy skills. How can designers and implementers of adult literacy programmes in the field be assured of ready access to the rich array of relevant experiences, especially of literacy programmes for women in remote and rural areas?

While national authorities are responsible for promoting literacy, consideration must also be directed to ways in which international co-operation can be more effective and supportive. Surely there are ways to ensure that local and national governments and intergovernmental agencies work together more effectively with the vast number of private and non-governmental bodies also active in

the field in a concerted drive to achieve full adult literacy.

Science and technology form an increasingly significant part of modern culture and, as time goes on, they permeate more deeply the daily life of individuals and society. The consequences may be positive or negative, depending on how individuals and society make use of them. Very many people avoid learning about science and technology, regarding them as difficult fields of study, remote and beyond comprehension. They must be demystified and shown to be accessible to all. If this is not done, how can sound decisions be taken on a democratic basis on issues such as those concerning nuclear power or the wise use of natural resources? The impact of scientific discoveries and technological change on the requirements, content and processes of basic education cannot be overestimated. In each particular context the question must be asked: how can basic education best prepare children and adults to live in an increasingly technological world? What understandings and habits of mind are indispensable for all citizens in a scientifically literate society?

Some answers to these and other related questions have been suggested. Bridges need to be built between formal education and real life so that what is learned in school can be applied naturally and effectively in dealing with everyday needs and problems. If simple scientific and technological concepts and processes are introduced into basic education from an early age, together with literacy and numeracy, children can absorb them naturally. How can this be done? The challenge today is to choose teaching methods and strategies that transform learning into everyday skills. This may imply re-shaping many of the major components of the school system, including school organization, curriculum and pupil-teacher relationships.

The pace of scientific discovery and of the application of technological findings to both large- and small-scale industry and commerce is accelerating. By creating new products and transforming production processes, technological innovation also changes the nature of work, responsibilities and power relationships in the workplace. It has a no less radical influence on the agricultural sector.

The education system will need to be more aware of, and more sensitive to, ways in which changes occur in whole clusters of skills required for basic competency in many jobs. How can better links be established between the formal education system and the world of work? What are the prospects for a more dynamic relationship between education and industry, commerce and agriculture, particularly with a view to revitalizing the educational process and to meeting manpower requirements?

The concept of lifelong learning is particularly relevant to this rapidly evolving situation. It is difficult to foresee the abilities and capabilities that the new technologies will require, and consequently it is difficult to plan realistically for them. What is clear is that the more successful workers in the future are likely to be those who are flexible and open to new ideas and opportunities. If 'quality education' is needed to produce such people, then what is meant by quality and how can it be achieved in the context of lifelong learning?

Another important area is women and science and technology. Women are poorly represented in the practice both of science and of technology and in the places where decisions about them are made. Relatively few women are in a position to take advantage of employment opportunities that depend on science-related qualifications. Yet women constitute a considerable potential source of scientific and technical skills. Prevailing societal attitudes with regard to male domination of science and technology still receive constant reinforcement from parents, teachers, and employers. It has been established that these attitudes are acquired at a very early age. How can basic education courses encourage girls to persevere in scientific and technological fields and to embark on careers in them?

Quality of life issues loom ever larger on the global landscape. Solutions are needed for the many environmental problems that beset humanity. Population growth continues to exacerbate economic, social and environmental problems, particularly in the poorest parts of the world. Widespread health and nutrition problems jeopardize the Alma Ata target of Health for All by the Year 2000. These issues are inseparably linked with

Education for All. The challenge posed to basic education in all these areas is not only to teach appropriate knowledge, attitudes and skills but also to develop behaviour which leads to action. This places a heavy responsibility on the teachers who need to have the professional background and the motivation to undertake this task.

Although there is growing awareness of the need for solutions to environmental problems, there is no lessening of the public demands for the benefits of development which may lead to environmental degradation. How can basic education contribute to understanding this dilemma and hence to its resolution? How can public authorities reach out to men, women and children, using formal, non-formal and informal approaches in a concerted drive to bring environmental issues to the forefront of public concern in ways that will motivate positive action? How can the media be encouraged to complement the work of the education sector in promoting environmental education?

Suggestions have been made of ways of incorporating environmental themes into basic education, as well as of re-grouping traditional subjects, such as geography, history, science, civics and hygiene, and teaching them in an integrated way so that environmental themes and issues can come to the fore. This implies curricular reform and an imaginative approach to reorganizing teaching time. Countries could work together collectively within a region or sub-region to determine which environmental concepts are of the greatest relevance to their particular societies.

Population education is one of the most rapidly growing educational innovations in the world. It is also an element of central and critical importance for any development programme that is concerned with using education to improve the quality of life for present and future generations. Many questions need to be answered concerning the content of population education and the approach to it. Which teaching strategies have been found to be effective? How can controversial issues be handled? If population education cannot be introduced at all levels of education at the same time, where should be the starting point? How can teachers be appropriately prepared?

The reciprocal relationship between health and learning capacity is now recognized. Health is a necessary prerequisite for good learning, and education can promote good health. There is a need for countries to formulate clear policies on health education and to ensure that policies and activities of the health and education sectors are co-ordinated. How can this best be achieved? The concept of the 'health-promoting school' is a relatively new one; it provides a model for health education within the school, in the community and in the local environment. How can the idea of a health-promoting school be implemented more widely, and how can teachers be motivated to become role models for healthy living?

Looking ahead, it is clear that the challenge of Education for All reaches far beyond the personal development of individuals, extending to communities, nations and indeed to humanity as a whole. Thus, it is not only a matter of enabling each individual to continue to learn and develop, but to enable societies to do so collectively. The community will become increasingly involved in schooling and the school in turn will become increasingly involved with the community. The underlying

concept is the 'learning society', in which formal and non-formal learning opportunities for children, youth and adults are broadened outside as well as within the school. Applying such a concept requires educational structures and processes that provide these opportunities and the skills of learning to learn, as well as the motivation for lifelong learning.

How are such structures and processes to be put in place in a particular national or local setting? Although this question will be examined in more depth in Monograph II, elements of an answer are evident from the preceding discussion of the purpose and context of Education for All.

The World Conference on Education for All provided a unique opportunity to identify and launch initiatives to meet the diverse learning needs of people of all ages. The way ahead now lies in the hands of governments, educational leaders and the countless groups and individuals engaged in the educational enterprise throughout the world. The questions and issues raised in this and the two subsequent monographs need to be addressed with urgency if Education for All is to be achieved in the not too distant future.

Appendix

World Declaration on Education for All *Meeting Basic Learning Needs*

PREAMBLE

More than 40 years ago, the nations of the world, speaking through the Universal Declaration of Human Rights, asserted that "everyone has a right to education". Despite notable efforts by countries around the globe to ensure the right to education for all, the following realities persist:

- More than 100 million children, including at least 60 million girls, have no access to primary schooling;
- More than 960 million adults, two-thirds of whom are women, are illiterate, and functional illiteracy is a significant problem in all countries, industrialized and developing;
- More than one-third of the world's adults have no access to the printed knowledge, new skills and technologies that could improve the quality of their lives and help them shape, and adapt to, social and cultural change; and
- More than 100 million children and countless adults fail to complete basic education programmes; millions more satisfy the attendance requirements but do not acquire essential knowledge and skills;

At the same time, the world faces daunting problems: notably mounting debt burdens, the threat of economic stagnation and decline, rapid population growth, widening economic disparities among and within nations, war, occupation, civil strife, violent crime, the prevent-

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able deaths of millions of children and widespread environmental degradation. These problems constrain efforts to meet basic learning needs, while the lack of basic education among a significant proportion of the population prevents societies from addressing such problems with strength and purpose.

These problems have led to major setbacks in basic education in the 1980s in many of the least developed countries. In some other countries, economic growth has been available to finance education expansion, but even so, many millions remain in poverty and unschooled or illiterate. In certain industrialized countries too, cutbacks in government expenditure over the 1980s have led to the deterioration of education.

Yet the world is also at the threshold of a new century, with all its promise and possibilities. Today, there is genuine progress toward peaceful detente and greater cooperation among nations. Today, the essential rights and capacities of women are being realized. Today, there are many useful scientific and cultural developments. Today, the sheer quantity of information available in the world – much of it relevant to survival and basic well-being – is exponentially greater than that available only a few years ago, and the rate of its growth is accelerating. This includes information about obtaining more life-enhancing knowledge – or learning how to learn. A synergistic effect occurs when important information is coupled with another modern advance – our new capacity to communicate.

These new forces, when combined with the cumulative experience of reform, innovation, research and the remarkable educational progress of many countries, make the goal of basic education for all – for the first time in history – an attainable goal.

Therefore, we participants in the World Conference on Education for All, assembled in Jomtien, Thailand, from 5 to 9 March, 1990:

Recalling that education is a fundamental right for all people, women and men, of all ages, throughout our world;

Understanding that education can help ensure a safer, healthier, more prosperous and environmentally sound world, while simultaneously contributing to social, economic, and cultural progress, tolerance, and international cooperation;

Knowing that education is an indispensable key to, though not a sufficient condition for, personal and social improvement;

Recognizing that traditional knowledge and indigenous cultural heritage have a value and validity in their own right and a capacity to both define and promote development;

Acknowledging that, overall, the current provision of education is

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seriously deficient and that it must be made more relevant and qualitatively improved, and made universally available;

Recognizing that sound basic education is fundamental to the strengthening of higher levels of education and of scientific and technological literacy and capacity and thus to self-reliant development; and

Recognizing the necessity to give to present and coming generations an expanded vision of, and a renewed commitment to, basic education to address the scale and complexity of the challenge;

proclaim the following

World Declaration on Education for All: Meeting Basic Learning Needs

EDUCATION FOR ALL: THE PURPOSE

ARTICLE 1 • MEETING BASIC LEARNING NEEDS

1. Every person – child, youth and adult – shall be able to benefit from educational opportunities designed to meet their basic learning needs. These needs comprise both essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as knowledge, skills, values, and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning. The scope of basic learning needs and how they should be met varies with individual countries and cultures, and inevitably, changes with the passage of time.

2. The satisfaction of these needs empowers individuals in any society and confers upon them a responsibility to respect and build upon their collective cultural, linguistic and spiritual heritage, to promote the education of others, to further the cause of social justice, to achieve environmental protection, to be tolerant towards social, political and religious systems which differ from their own, ensuring that commonly accepted humanistic values and human rights are upheld, and to work for international peace and solidarity in an interdependent world.

3. Another and no less fundamental aim of educational development is the transmission and enrichment of common cultural and moral

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values. It is in these values that the individual and society find their identity and worth.

4. Basic education is more than an end in itself. It is the foundation for lifelong learning and human development on which countries may build, systematically, further levels and types of education and training.

EDUCATION FOR ALL: AN EXPANDED VISION AND A RENEWED COMMITMENT

ARTICLE 2 • SHAPING THE VISION

1. To serve the basic learning needs of all requires more than a recommitment to basic education as it now exists. What is needed is an "expanded vision" that surpasses present resource levels, institutional structures, curricula, and conventional delivery systems while building on the best in current practices. New possibilities exist today which result from the convergence of the increase in information and the unprecedented capacity to communicate. We must seize them with creativity and a determination for increased effectiveness.

2. As elaborated in Articles III-VII, the expanded vision encompasses:

- Universalizing access and promoting equity;
- Focussing on learning;
- Broadening the means and scope of basic education;
- Enhancing the environment for learning;
- Strengthening partnerships.

3. The realization of an enormous potential for human progress and empowerment is contingent upon whether people can be enabled to acquire the education and the start needed to tap into the ever-expanding pool of relevant knowledge and the new means for sharing this knowledge.

ARTICLE 3 • UNIVERSALIZING ACCESS AND PROMOTING EQUITY

1. Basic education should be provided to all children, youth and adults. To this end, basic education services of quality should be expanded and consistent measures must be taken to reduce disparities.

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2. For basic education to be equitable, all children, youth and adults must be given the opportunity to achieve and maintain an acceptable level of learning.

3. The most urgent priority is to ensure access to, and improve the quality of, education for girls and women, and to remove every obstacle that hampers their active participation. All gender stereotyping in education should be eliminated.

4. An active commitment must be made to removing educational disparities. Underserved groups: the poor; street and working children; rural and remote populations; nomads and migrant workers; indigenous peoples; ethnic, racial, and linguistic minorities; refugees; those displaced by war; and people under occupation, should not suffer any discrimination in access to learning opportunities.

5. The learning needs of the disabled demand special attention. Steps need to be taken to provide equal access to education to every category of disabled persons as an integral part of the education system.

ARTICLE 4 • FOCUSING ON LEARNING

Whether or not expanded educational opportunities will translate into meaningful development – for an individual or for society – depends ultimately on whether people actually learn as a result of those opportunities, i.e., whether they incorporate useful knowledge, reasoning ability, skills, and values. The focus of basic education must, therefore, be on actual learning acquisition and outcome, rather than exclusively upon enrolment, continued participation in organized programmes and completion of certification requirements. Active and participatory approaches are particularly valuable in assuring learning acquisition and allowing learners to reach their fullest potential. It is, therefore, necessary to define acceptable levels of learning acquisition for educational programmes and to improve and apply systems of assessing learning achievement.

ARTICLE 5 • BROADENING THE MEANS AND SCOPE OF BASIC EDUCATION

The diversity, complexity, and changing nature of basic learning needs of children, youth and adults necessitates broadening and constantly

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redefining the scope of basic education to include the following components:

- *Learning begins at birth.* This calls for early childhood care and initial education. These can be provided through arrangements involving families, communities, or institutional programmes, as appropriate.
- *The main delivery system for the basic education of children outside the family is primary schooling.* Primary education must be universal, ensure that the basic learning needs of all children are satisfied, and take into account the culture, needs, and opportunities of the community. Supplementary alternative programmes can help meet the basic learning needs of children with limited or no access to formal schooling, provided that they share the same standards of learning applied to schools, and are adequately supported.
- *The basic learning needs of youth and adults are diverse and should be met through a variety of delivery systems.* Literacy programmes are indispensable because literacy is a necessary skill in itself and the foundation of other life skills. Literacy in the mother-tongue strengthens cultural identity and heritage. Other needs can be served by: skills training, apprenticeships, and formal and non-formal education programmes in health, nutrition, population, agricultural techniques, the environment, science, technology, family life, including fertility awareness, and other societal issues.
- *All available instruments and channels of information, communications, and social action could be used to help convey essential knowledge and inform and educate people on social issues.* In addition to the traditional means, libraries, television, radio and other media can be mobilized to realize their potential towards meeting basic education needs of all.

These components should constitute an integrated system – complementary, mutually reinforcing, and of comparable standards, and they should contribute to creating and developing possibilities for lifelong learning.

ARTICLE 6 • ENHANCING THE ENVIRONMENT FOR LEARNING

Learning does not take place in isolation. Societies, therefore, must ensure that all learners receive the nutrition, health care, and general physical and emotional support they need in order to participate actively in and benefit from their education. Knowledge and skills that will enhance the learning environment of children should be integrated

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into community learning programmes for adults. The education of children and their parents or other caretakers is mutually supportive and this interaction should be used to create, for all, a learning environment of vibrancy and warmth.

ARTICLE 7 • STRENGTHENING PARTNERSHIPS

National, regional, and local educational authorities have a unique obligation to provide basic education for all, but they cannot be expected to supply every human, financial or organizational requirement for this task. New and revitalized partnerships at all levels will be necessary: partnerships among all sub-sectors and forms of education, recognizing the special role of teachers and that of administrators and other educational personnel; partnerships between education and other government departments, including planning, finance, labour, communications, and other social sectors; partnerships between government and non-governmental organizations, the private sector, local communities, religious groups, and families. The recognition of the vital role of both families and teachers is particularly important. In this context, the terms and conditions of service of teachers and their status, which constitute a determining factor in the implementation of education for all, must be urgently improved in all countries in line with the joint ILO/ UNESCO Recommendation Concerning the Status of Teachers (1966). Genuine partnerships contribute to the planning, implementing, managing and evaluating of basic education programmes. When we speak of "an expanded vision and a renewed commitment", partnerships are at the heart of it.

EDUCATION FOR ALL: THE REQUIREMENTS

ARTICLE 8 • DEVELOPING A SUPPORTIVE POLICY CONTEXT

1. Supportive policies in the social, cultural, and economic sectors are required in order to realize the full provision and utilization of basic education for individual and societal improvement. The provision of basic education for all depends on political commitment and political will backed by appropriate fiscal measures and reinforced by educational policy reforms and institutional strengthening. Suitable economic, trade, labour, employment and health policies will enhance learners' incentives and contributions to societal development.

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2. Societies should also insure a strong intellectual and scientific environment for basic education. This implies improving higher education and developing scientific research. Close contact with contemporary technological and scientific knowledge should be possible at every level of education.

ARTICLE 9 • MOBILIZING RESOURCES

1. **If the basic learning needs of all are to be met through a much broader scope of action than in the past, it will be essential to mobilize existing and new financial and human resources, public, private and voluntary.** All of society has a contribution to make, recognizing that time, energy and funding directed to basic education are perhaps the most profound investment in people and in the future of a country which can be made.

2. Enlarged public-sector support means drawing on the resources of all the government agencies responsible for human development, through increased absolute and proportional allocations to basic education services with the clear recognition of competing claims on national resources of which education is an important one, but not the only one. Serious attention to improving the efficiency of existing educational resources and programmes will not only produce more, it can also be expected to attract new resources. The urgent task of meeting basic learning needs may require a reallocation between sectors, as, for example, a transfer from military to educational expenditure. Above all, special protection for basic education will be required in countries undergoing structural adjustment and facing severe external debt burdens. Today, more than ever, education must be seen as a fundamental dimension of any social, cultural, and economic design.

ARTICLE 10 • STRENGTHENING INTERNATIONAL SOLIDARITY

1. **Meeting basic learning needs constitutes a common and universal human responsibility. It requires international solidarity and equitable and fair economic relations in order to redress existing economic disparities.** All nations have valuable knowledge and experiences to share for designing effective educational policies and programmes.

2. Substantial and long-term increases in resources for basic education will be needed. The world community, including intergovernmental

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agencies and institutions, has an urgent responsibility to alleviate the constraints that prevent some countries from achieving the goal of education for all. It will mean the adoption of measures that augment the national budgets of the poorest countries or serve to relieve heavy debt burdens. Creditors and debtors must seek innovative and equitable formulae to resolve these burdens, since the capacity of many developing countries to respond effectively to education and other basic needs will be greatly helped by finding solutions to the debt problem.

3. Basic learning needs of adults and children must be addressed wherever they exist. Least developed and low-income countries have special needs which require priority in international support for basic education in the 1990s.

4. All nations must also work together to resolve conflicts and strife, to end military occupations, and to settle displaced populations, or to facilitate their return to their countries of origin, and ensure that their basic learning needs are met. Only a stable and peaceful environment can create the conditions in which every human being, child and adult alike, may benefit from the goals of this Declaration.

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We, the participants in the World Conference on Education for All, reaffirm the right of all people to education. This is the foundation of our determination, singly and together, to ensure education for all.

We commit ourselves to act cooperatively through our own spheres of responsibility, taking all necessary steps to achieve the goals of education for all. Together we call on governments, concerned organizations and individuals to join in this urgent undertaking.

The basic learning needs of all can and must be met. There can be no more meaningful way to begin the International Literacy Year, to move forward the goals of the United Nations Decade of Disabled Persons (1983-99), the World Decade for Cultural Development (1988-97), the Fourth United Nations Development Decade (1991-2000), of the Convention on the Elimination of Discrimination against Women and the Forward Looking Strategies for the Advancement of Women, and of the Convention on

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the Rights of the Child. There has never been a more propitious time to commit ourselves to providing basic learning opportunities for all the people of the world.

We adopt, therefore, this *World Declaration on Education for All: Meeting Basic Learning Needs* and agree on the *Framework for Action to Meet Basic Learning Needs*, to achieve the goals set forth in this Declaration.

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