EDUCATION AND DEVELOPMENT

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Summary

Education addresses the human dimension of development and constitutes a cornerstone for harmonious human development. In its invaluable service to society and development, education has fundamental functions for bringing about personal and social development and assisting build relationships among individuals, groups, and nations, thereby making an indispensable contribution in the fight against ignorance, exclusion, poverty, and war.

At all levels, education brings the knowledge, skills, values, and attitudes people need to be able to survive, to develop their capacities to the full, to participate fully in development, to improve the quality of their life, and to be active citizens able to work for the improvement of society and the environment.

As we enter the twenty-first century, development remains the major challenge, and so does education. The right to education has become a human right recognized by all nations. There are many pressing factors that call for decisive action to ensure this right, and in particular the right to basic education, that is rightly being called “a passport to life.” This and other levels and forms of education should be in the frontline of any national agenda for development, because any nation seeking development and industrialization needs a scientifically and technologically literate labor force, and because democratic societies need the informed participation of every citizen in public and political life. The progress of knowledge and opportunities it offers for development make it necessary to strive for a “knowledge-based” and “learning” society that should benefit from “lifelong learning” through formal and informal education.

1. Introduction

Education and development are among the cornerstones of society's efforts to promote national welfare, culture, the acquisition of knowledge, and a harmonious coexistence with the environment. They encompass a uniquely wide range of activities that involve people at the grass-roots level and policy and decision makers, the state and private sectors, government and nongovernmental institutions, and national and international organizations. The returns and importance of the commitment to education and development can, for instance, be demonstrated by what has already been done in the industrialized countries to build up a democratic society of well-informed and cultured citizens, to meet their basic needs, to promote science and technology, and by all these means to increase the quality of life. The necessity for a sustained and reinforced commitment to education and development also stems from much of what is still to be done to meet the expectations and pressing needs of society, in particular in underprivileged countries that have not yet had a chance to adequately engage in, and benefit from, fully-fledged action for education and development.

2. Aspects and Concept of Development

The ultimate purpose of development is to improve the quality of life for all, be it in material, spiritual, or societal terms. This is why when addressing development problems account should be taken of various aspects, such as the economic, social, cultural, human, and technological and the concept of environmentally sound and sustainable development. In turn, these notions are interconnected and each may have important distinguishable facets. The facets that constitute intrinsic qualities of cultural development, for instance, are those relating to the arts, literature, indigenous cultural traditions and knowledge, the preservation of cultural heritage, the promotion of intercultural dialogue, education and science, etc. At the same time, the recognition of cultural factors in development strategies and due regard for them in the context of each society is a prerequisite for the sustainable character of social development, and for the promotion of creativity in education, science, and other spheres of social activity.

Guiding action-oriented national concepts of development may differ because of national priorities, available opportunities, and limitations at a given phase of development. The very concept of development at the global level may also evolve following changes in major factors affecting national policies, international relations, and the relationship between humankind and the environment. It is in this context that the United Nations Conference on the Environment and Development (UNCED), held in Rio de Janeiro in 1992, introduced a holistic concept of development referred to as "sustainable development."

This concept is based on the fact that development can only be viable if it is sustainable at the global level by virtue of being environmentally sound and socially and economically equitable. The importance and guiding role of this concept is two-fold. On one hand, it takes account of the unprecedented impact of anthropogenic activities, which are one of the major factors of global environmental change—unfortunately, this factor may be both positive and detrimental. On the other, it introduces the principle that all nations should participate in, and benefit from, sustainable development, and that

this development should be in harmony with the long-term interests of all. In this context the concept of sustainable development motivates all nations to assume common responsibility and take common action for the well-being of humankind and the entire planet. As concluded in Principle 3 of the Rio Declaration on Environment and Development issued by UNCED: "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."

3. Pressing Factors

As the world enters the twenty-first century, development remains the major challenge. At the beginning of the 1990s, the rate of global poverty stood at roughly 23%; that is to say, over 1200 million people, mostly in developing countries, were, and still are, living in absolute poverty (Asia ~675 million, Sub-Saharan Africa ~325 million, Latin America ~150 million, north Africa and the Middle East ~75 million, industrialized countries ~10 million). If account is taken of the average number of children in poor families, it transpires that the poverty trap plagues an alarming number of children and young people, whose prospects may even be worse than their parents' unless society takes remedial action to stop the spread of poverty and reverse it. Four hundred million people around the world are seriously malnourished and a great many lack sufficient nourishment. One-third of the children in poor families die before the age of five due to chronic hunger during the critical age of six months to two years. There are over 100 million homeless people in the world.

Since the middle of the twentieth century, global economic production has been growing at a record pace and has nearly quintupled; however not all nations and their people have benefited equally from this growth. The richest—20% of humankind—enjoy 86% of the world's income. On a global scale, the ratio between the income of the richest 20% of the population and that of the poorest 20% of the population ("equity ratio") is 15. The disparity between the haves and the have-nots in some ways mirrors other fundamental disparities between and within countries. A major disparity between countries is the gap between industrialized and developing countries, that is to say, the disparity in development. While the industrially more developed nations have been able to build up considerable capacity for promoting and benefiting from education, scientific research, and technological innovation, developing countries have been less fortunate and have had to struggle to meet the basic needs of their populations, with the least developed among them having to address emergency issues of survival.

Science and technology have become basic components of human activity because of their returns and proven ability to find new and efficient ways to respond to economic, social, and cultural demands. The gap in science and technology between industrialized and developing countries therefore has an adverse effect, slowing down progress in the latter. The scale of the gap can be illustrated by some figures relating to scientific production. In 1993, the share of scientific publications in different parts of the world was as follows: 6.7% for all developing countries in Africa, Asia, and Latin America; 1.4% for newly industrialized economies of Asia (Republic of Korea, Malaysia, Singapore, Chinese Hong Kong, and Taipei); and 91.9% for developed industrialized countries, of which 66.8% were shared by the European Union (31.5%) and the United

States (35.3%). Industrialization is not, of course, the only root of leadership in science. The excellence of traditional national scientific schools of thinking and that of human resources available are other basic prerequisites for productive science. Science is not a national phenomenon. By its nature, science crosses borders. When analyzing the contribution to science by scientists of developing nations, sight should not be lost of the significant contribution being made by a great number of them who are working in industrialized countries. Hence these scientists constitute an important investment of the developing regions to the advancement of world science and it is therefore only fair that developed and developing nations (sometimes referred to as "the north" and "the south," respectively) should share scientific knowledge and returns from science.

The gap in science and technology as well as that in access to and quality of education and in information technologies leads to a gap in knowledge. The latter constitutes a new and dangerous disadvantage in an age when more prosperous nations are moving towards a knowledge-based society in which knowledge and education are a real driving force of development.

A further major development challenge relates to the environment, which is being seriously affected by the process of industrialization and unwise economic practices. As estimated in *A Worldwatch Institute Report on Progress Towards Sustainable Development*, since the middle of the twentieth century there has been a loss of nearly one-fifth of the topsoil of cropland, and one-fifth of the world's tropical rain forests. The level of carbon dioxide has increased by 13% and it is suggested that the hotter summers and drought-reduced harvests of the 1980s were caused by the resulting greenhouse effect. The worldwide depletion of the protective ozone layer, dead lakes, acid rains, soil erosion, etc. are alarming indicators of degradation of the environment that has reached such a scale that the environment has begun to shape economic development. It is in this context that a common action for sustainable development is called for. The twentieth century saw striking progress in science and technology, agricultural and industrial productivity, food and energy supply, health care, and international cooperation for the preservation of the environment and biological diversity. These and many other examples demonstrate the ability of humankind to solve its problems if it acts with determination and wisdom.

4. Role of Education

Human beings are actors in the process of development. Education that brings people the knowledge and skills necessary for their lives and for creative activity in modern society is, therefore, one of the basic elements of development. This element relates to the human dimension of development and constitutes a part of what is called human development. However, the important proactive role of human beings in development should never be misread as, or reduced to, an instrumental role to attain development goals. This is because the human dimension of development implies, first and foremost, that development is destined for the prosperity of people and not vice versa. In Principle 1, the Rio Declaration on Environment and Development proclaims: "Human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."

In its service to society and development, education has a multitude of functions to fulfill. As emphasized in the Report of the International Commission on Education for the Twenty-first Century, published by UNESCO in 1996, education has a fundamental role in bringing about personal and social development and building relationships among individuals, groups, and nations. It is one of the principal means available to foster a deeper and more harmonious form of human development and thereby to reduce poverty, exclusion, ignorance, oppression, and war. A number of contributions made by education have important bearings on development. The following areas in which the involvement of education is particularly essential may also be cited:

- the promotion of humanistic ideals and ethical standards underlying development;
- human resources development that encompasses a wide range of actions, including those referred to further on;
- the eradication of illiteracy and the provision of basic education;
- higher levels of education, including technical and vocational education and training and higher education in universities and other higher education institutions;
- lifelong education and professional training;
- the education of women and promotion of their role in society;
- the education and training of policy and decision makers;
- the promotion of public awareness through formal and informal education;
- the transfer and sharing of knowledge;
- science and technology education;
- environmental education;
- health education;
- the introduction and promotion of information technologies;
- the promotion of research capacities and the advancement of knowledge; and
- cultural development.

Although this recapitulation may not be exhaustive, it shows that development has deep roots in education.

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Biographical Sketch

V.T. Zharov is a professor of physical chemistry and a senior advisor to UNESCO Science Sector. He studied at St. Petersburg University in Russia and worked there as a researcher and university teacher for over 20 years. He has been awarded a Ph.D. and a senior doctorate (D.Sc.) and has been a full professor, a dean of chemistry faculty, and a vice-rector of the university. He is the author of many articles and monographs, in chemical thermodynamics, particularly concerning the use of topology and a qualitative theory of differential equations. For 14 years, from 1984, he was the director of a division of basic sciences in UNESCO and led the implementation of its programs for improvement of science education, strengthening research capacities of developing countries, and promotion of international cooperation in basic research.