

## NEEDED EDUCATIONAL REVISION ON THE IMPACT OF TECHNOLOGY

[Kumaran Fernando](#)

Secretary-General  
United Nations Association  
Sri Lanka

According to paleontological research, the evolution of the human species from hominid to Homo sapiens spans a period of about three million years. A unique feature of the evolution of life is the development of the human brain, both in size and complexity. At a certain stage of evolution, neurological changes in the brain structure may have triggered off responses to external stimuli resulting in the first primate using a bone or a stick to supplement the hand in foraging for food. Hands and feet are naturally endowed tools. It can be inferred that technology, or the making and use of tools, is nearly as old as man. The evolution of technology is therefore the result of deliberate human action; the unfolding over time of the creative spirit of man. But in the last five decades of the present century, technology has developed at a pace unprecedented in history. New techniques following each other in rapid succession have left the mind of man baffled and stupefied. There is hardly any sphere of human activity that has not felt its impact, the destructive and negative impact often outweighing the positive. The inability to grasp the long-term implications of this phenomenon to the human species, and to life as a whole, is at the root of many problems confronting humankind today. It is therefore the moral responsibility of philosophers, scientists, theologians, policy-makers and administrators to help harness technology to ensure the preservation and enhancement of life in the widest sense of the term. This is a challenge that calls for a fundamental re-orientation of the entire educational system and its revision, as the theme of this conference seems to indicate.

In the first part of this presentation, we propose to dwell briefly on technology as ascending from lower to higher levels, followed by a discussion of other fields of human activity which are characterized by a fluctuating, up-down movement, and subsequently deal with proposals for the restructuring of the educational system. Whether the advent of technology is viewed as being accidental or purposeful does not materially effect our line of thinking. What is pertinent is its implications for the future direction of human affairs.

With the use of tools, human evolution took a great leap forward. Thence-forth the development of technology has throughout been on an ascending scale. This is a point we wish to stress, since the tendency is not evident in other fields of human activity, as we shall attempt to show later on in this presentation.

In lower animals we see evidence of building skills at a very rudimentary level and even the use of tools, but this ability has remained wholly static, instinctive and genetically programmed. There is no evidence of progression. In humankind, technology has developed from the crude to the highly complex, passing through the stone, copper, bronze and iron ages to mechanization, automation, computerization in modern times-ascendant progression all the way with a breathtaking burst of speed in the last five decades. But we do not see the same progression in other fields of human activity manifested in social, economic and political systems and institutions. Here we do not see progression from the lower to the higher, but what I would refer to as progression regression syndrome – periods of progress alternating with periods of decline. Let us identify a few such fields and pinpoint their progress and decline during the period of recorded history, politics, diplomacy, war and peace, human rights and culture.

As far as political systems are concerned, we see the relatively advanced theory and practice of democracy, the elective principal and republicanism in ancient Greece and India. There exist authentic records of the righteousness of rulers in Islamic and Christian countries. In between, we have periods of unmitigated authoritarianism, exemplified by the marauding Assyrians, Tartars, Huns and in modern military dictatorships, when life and death depend on the whims of one man or a dominant group. The norms of behavior of rulers then and now are determined not so much by moral considerations but largely by the material interests of individuals and groups. Thus expediency appears to be the guiding principle. It is the same with inter-state relations. Diplomacy then and to a large extent now, is directed to secure and safeguard the interest of dominant countries evoking similar behavior on the part of adversaries. Moral considerations, though avowed, play only a marginal role. It must be said in parenthesis that nascent international environment diplomacy has great promise for the future since it is based not on expediency but on moral principles. In the conduct of war and peace and the migration of peoples, periods of relative peace and calm have alternated with periods of war and conflict, some lasting for as long as one hundred years or more. There have been periods during the last six thousand years, as in Asokan India, when human rights were honored both in word and deed, alternating with periods when repression of the worst form were the norms. Finally, let us consider culture. The mind of man has found expression in the realistic cave drawings of prehistoric man, in song and dance, music and drama, painting and sculpture of exquisite beauty of form and grace, in widely removed periods of history and prehistory, with periods of decadence and decline in between.

These examples provide evidence for our contention that in all fields, other than technology, the outstanding fact is the operation of the progression- regression syndrome. Technology has been the willing handmaid both during periods of progress and of decline. With technology literally exploding in our faces, today the implications of this contradiction to the future of the human race become all too evident. The challenge before us is to ensure an uninterrupted progression in the functioning of political, economic and social systems, in the maintenance

of peace, the protection of human rights and cultural pursuits, in each of which technology must play a progressive, never regressive, role.

It is towards this end that the restructuring of education became imperative, in order to keep pace with the impact of technology. The significance of such a restructuring lies in the preparation and development of the mind to understand the ultimate purpose of technology, as explained in the objectives of the International University of the Bio Environment. In the words of Dr. Agni Vlavianos-Arvanitis, President and Founder of the B.I.O., it is fundamental to bringing about a change from "the present inverted pyramid state of society, in which technology hovers on an unstable base in the air as it were, to a balanced society of the future, where technology will stand on a firmly grounded base with human rights occupying its stable summit."

Contemporary educational practice based on conflicting value systems condones, if not actually encourages, the use of technology for narrow partisan ends, making conflicts more difficult to resolve. Such conflicts, be they religious or political in origin, constitute, directly or indirectly, major threats to the environment. The raging Kuwaiti oil fires was a case in point. The role of the educators at all levels is to help formulate a unifying value system where technology is directed towards the improvement of life and the preservation of the bio-environment.

Contrary to expectations, automation, computerisation, the information re-volution and the tremendous potential of bio-technology have affected only marginally the quality of life of peoples in the developing countries. No attempt has been made to understand their ethical implications. The approach to conflict resolution, in which ethics should play a significant role, is based on expediency, with technology serving shortsighted sectarian interests with all its attendant consequences. The importance of basing education on a new unifying value system is seen clearly in the potential for both good and evil of genetic engineering. If the use of the new technology is not based on moral principles, then the consequences will be disastrous to humanity and to life on the planet. It is the responsibility of all concerned to lay down the correct guidelines based on universally recognized norms of moral conduct.

I have had the occasion to refer to the progression-regression syndrome in all fields other than technology. All round progression can be achieved only through the application of moral, ethical and humane values in all human relations in the spheres of politics, economics and diplomacy.

Having dealt with the moral implications of the question, we wish to discuss briefly the level of awareness of people, since technology impinges on their lives at every turn. Ignorance of implications places them at a disadvantage, since they can be imposed upon. Therefore people at all levels must be taught the rudimentary skills needed for living in the complex world of today. Hence a case can be made for the inclusion of 'functional technology literacy' in both formal and non-formal education. This is indeed a challenging proposition, since nearly one fifth of the world's five billion population is illiterate. This brings up the important issue of resolving, without delay, all conflicts, local, regional and global. The resulting peace dividend in the form of savings from disarmament can be utilized to finance programmes and projects to eliminate illiteracy in all its forms. As a corollary, 'conflict resolution' as a subject should figure prominently in the curriculum at all levels.

The next logical step in the process of education is methodology. Learning by doing has long been recognized as the most effective method of teaching. It stimulates student's interest and is a challenge to the ingenuity of the teacher. But traditional methods still find favor for both teaching and examination purposes. The widespread resort to the problem-solving, activity method, progressing from environmental studies at elementary level to research work at tertiary level, is the most effective way of understanding the impact of technology and countering its adverse effects.

Curriculum planning at the primary, secondary and tertiary level should have a compulsory provision for the inclusion of suitable projects for implementation by students, with the emphasis being placed on the integrated multi-disciplinary approach to learning and teaching. Money spent on such projects will be cost effective and productive with immediate benefits to the community. Involvement in such projects will help produce research scientists and administrators capable of making a positive contribution to the preservation of the bio-environment.

The restructuring of education incorporating the above components in both formal and non-formal education will have a far-reaching impact on peoples, values and attitudes and bring nearer to realization the objectives of the Biopolitics International Organisation. I may add that these components should be meaningfully integrated with the curricula and programs of all educational and other institutions, both clerical and secular. At this critical moment, what is called for is not a superficial revision but an overall re-orientation of the entire system, if the progression-regression syndrome is to be transformed into one of continuous progression in all areas of human endeavor.

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**Kumaran Fernando** is Founder and Secretary General of the United Nations Association of Sri Lanka and has represented the UNA at conferences all over the world. Founder and Chairman of the Flag Research Centre of Sri Lanka, the only one of its kind in Asia and Africa, he has been a member of many professional organisations including the Audubon Society of America, and is an honorary member of the UN Associations of the UK and the USA, as well as the Sagala Trust and the VASLA Flag Society.