EDUCATION & VALUES

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It is widely recognized that education, adequate in quality and scale, is today the most powerful instrument for national development, welfare and security. The instrument must, of course, be wisely used for education is such a potent instrument that bad education is not only bad in itself but it can do great and lasting harm.

Perhaps the single most important characteristic of our times is that for the first time in man's history the world has become knowledge-based, largely science-and-technology-based, imparting to education a role and significance as never before in history. The growth rate of science and technology,globally speaking, is extraordinarily fast. The doubling period,as it is called, is about ten to fifteen years. This means that the growth in science and technology, that is, the new discoveries and development in the next ten years or so, would be about equal in volume to the knowledge that mankind has gathered over the preceding several centuries.

A knowledge-based world and a certain measure of unpredictability are inseparable. The new knowledge which will be discovered, acquired tomorrow, is unknown today; if it were known today, it would not be new knowledge tomorrow. There would thus be no advancemant of knowledge.

A knowledge-based world is an 'open world'. Past experience and 'models' are generally of not much use in dealing with the problems and challenges of living in a rapidly changing uncertain world. Mankind has to become accustomed to world which offers greater opportunities for creativity in every sphere of life. The electronic revolution which has led to the presence of automation, artificial intellignece, personal computers in everyday use will likely be an integral component in education and is certain to have a profound impact, perhaps even greater than that of the invention of the printing press five centuries ago. We have to be prepared for it, and this has to be reflected in our current thinking.

Our times represent a period of transition from the industrial age to a New Age. At this point we may remind ourselves of Einstein's profound words: "One lesson I have learnt in a long life. All our science measured against reality is primitive and childlike: yet it is the most precious thing we have." Therefore, while it is imperative that modern education should give an important place, even a central place, to science and technology, we must remember that in some essential respects science and technology have severe limitations and to ignore these would be fatal to the progress of society and even its survival. Niels Bohr used to say that to be merely 'logical' is not really 'thinking'.

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'Thinking' must contain a certain creativity going beyond logic and the rigid chain of casualty. To be only logical means that the next stape is contained in the first one; there is no element of creativity, no novelty. To 'think' is to be something more than to be merely logical. And this is important when we consider the question of overcoming the present barriers between science and humanism, between knowledge and wisdom. To achieve this is not all easy. But the barriers between science and humanism have to be overcome, otherwise what happens is that we produce 'experts' not 'educated human beings'. And what is an 'expert'? The greatest expert is all knowledge and no wisdom. Knowledge without wisdom or ethical-moral values degenerates into arrogance and is of little avail to the individual or of benefit to the community. In overvoming barriers between science and values there must be no compromise whatsover as regards the objectivity and autonomy of science. Fortunately, current developments of significance in both the physical and biological sciences open up totally unexpected possibilities towards overcoming the rigid Cartesian partition between science and values.

R.W. Sperry, in his Noble Prize address on "Some Effects of Disconnecting the Cerebral Hemispheres", expounded the viewpoint in which the scientific and the humanistic views of man and the world are no longer in positiom. He concludes: "A unifying new interpretative framework emerges with far-reaching impact not only for science but for those ultimate value-belief guidelines by which mankind has tried to live and find meaning".

In an oft-quoted statement (1951) Erwin Schroedinger says:

"I consider science an intergrating part of our endeavor to answer the one great philosophical question which embraces all others, the one that Plotinus expressed by his brief: "Who are we?" And more than that: I consider this not one of the tasks, but the task of science, the only one that really counts."

Science, perhaps unexpectedly, is now moving towards a more unified world view which includes both knowledge and values as complementary and mutually reinforcing. We are gradually moving away from what is "one of the most firmly entrenched taboos of twentieth century science" that "any mingling of knowledge with values is unlawful, forbidden". When science and values (ahimsa) go together, the way lies open to a world of liberty, justice, prosperity, and joy for all. The barriers between science and values cannot be broken by going back to ancient times. At that time science in the modern sense did not exist although philosophy was highly advanced. The task of linking mature science and mature philosophy is a task of the present times, and more so of the future.

Let us ask what would be a meaningful 'coordinate frame' for education today. What basic principles or 'laws' should guide educational reform and reconstruction? The very first factor in this coordinate frame is that the modern world is One World. It is a 'Global Village'. The destiny of mankind hangs together. In a scientific and technical sense, mankind and the entire flora and fauna is ecologically one system. We cannot within a country and between countries have development of only one part and let the other parts lag behind, for that can lead only to ruination for all. The great lesson of science today is that Mankind is indivisible.

To come to the second point : the incredibly rapid growth of science and technology. As mentioned earlier, the doubling period is ten to fifteen years. Science and

technology are exploding, but wisdom is imploding. Knowledge is expanding but the human personality is shrinkinfg. Because of the explosion of knowledge with a simultaneous implosion of wisdom, we find grave aberrations and imbalances which have brought mankind to the verge of ruin. There is the explosion of population. There is the explosion of violence in diverse forms. Greed, hatred and delusion form a rapidly rising spiral- the GHD sprial. Thus on the one hand, we have the exponentially rising sprial of Science, Technology and Productivity-the STP sprial; on the other we have the GHD sprial. The military expenditure worldwide per minute is more than a million US dollars (Rupees one Crore) to fuel the Greed-Hatred-Delusion sprial. Every minute more than a million dollars are spent to make the world a worse place for us and for our children than it was a minute before. More than half the total number of scientists and engineers work on the development of weapons of mass destruction. But how tragic is the situation when we come to think of the means of promoting self-control and training in self-discipline! Where is the salvation? In all probability it lies in good education and in "good science", that is, science used to human ends. If salvation lies through education, how desperately important it is that it be 'good education'. Today's world situation is to no small extent a result of 'bad education'- education divorced from values, from character building.

I stress the crucial need for an interaction between science and values. What is the meaning and purpose of linking knowledge and values? It is basically character building, an endeavor to promote morality in our actions, individually, collectively, and globally. In Einstein's inspiring words (November 1950):

"The most important human endeavor is the striving for morality in our actions. Our inner balance and even our very existence depend on it. Only morality in our actions can give beauty and dignity to life. To make this a living force and bring it to clear consciousness is perhaps the foremost task of education."

In a world changing at a terrific pace, it is important that there should be continuing and serious thinking by professionally committed people on educational problems and developments. A major development in Indian education arising from the Report of Radhakrishnan Commission was the setting up of the University Grants Commission. The establishment of a permanent School Commission (both at the center and in the states) seems urgently necessary. It would mean that policy and decision about school education, within the general framework laid down by the Government, would be largely in the hands of those who understand education, who are aware of the needs of the community, and knowledgeable about new educational developments and research in the country and elsewhere.

In any scheme of educational reconstruction and reform, an element of flexibility and diversity is essential. The situation in practically every sphere of life, including the pattern of employment, is changing so fast today that not a few of the recommendations of education commissioners are often our of date by time their reports are published. (For instance, many educationally advanced countries are now seriously considering, for various reasons, a reduction in the duration of the first degree courses from the usual three years to two years. This is relevant for us as well.)

To quote from an important 1983 report:

If an unfriendly foreign power had attempted to impose on us the mediocre

educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves.... We have, in effect, been committing an act of unthinking unilateral educational disarmament.

The quotation is form the Report of the Commission appointed by President Ronald Reagan in 1981. And the reports says that not since 1957 (the Sputnik Year) has there been such a general agreement that high school education in the USA is in a mess. "Sooner or later the administration will have to intervene", it added. Among other stratling things, the Report says that more than twenty million American adults cannot read, cannot write, cannot comprehend the English language.

The phenomenon of educational crisis is part of the phenomenon of a dynamic world radically changing in the span of the lifetime of one generation. One reason for the 'chaos' in education is the burgeoning of new opportunites and aspirations for hundreds of millions who had so long been denied all education and were living at a level of real deprivation. Today education is important for survival and progress, and great are the opportunities--individually and collectively--to contribute to man's advancement.

The link between education and productivity is a basic characteristic of knowledge-based society where most production activity is science-and-tecnology-based and will be increasingly so in the future. No nation without effectively linking education and national productivity can have the resources to provide universal primary education and universal literacy. If education does not contribute to productivity, directly and indirectly, it will inevitably be restricted to only a small, privileged fraction of the total population.

The place and role of research in the entire process is apparent. We know that to improve agricultural productivity we need science and technology. This E.R.P. conection is a relatively new thing: Education, Research and Productivity. It is because of this interaction that universal primary education becomes possible. Education is 'dead education' unless it has research component and it has little utility unles it is to some degree related to productivity. There is a real and urgent need for research as regards what is to be taught, how it is taught and how children learn, and the whole psychology of child development.

Education which does not value and promote excellence is, in the end, a waste of effort and resources. Excellence is to be understood as extending over a wide range of interests and activities, that is studies, research, teaching, technical skills, promotion of social and moral values, sports, etc. The meaning of excellence, and how to identify it, needs to be examined continually.

To support excellence is not to oppose the concept of equlity of opportunities. It should be emphasized that excellence in an individual implies a corresponding obligation to serve the community in one's special field : the greater the excellence, the greater the obligation, especially towards the weaker sections of the community. Where this is lacking, education would widen and not reduce the gap between the advantaged and the disadvantaged. Education must help to bridge the gap between the rich and the poor, otherwise it would be self-defeating, even harmful.

To ignore the principle of emphasis on excellence in education is to kill the very soul of education. Divorced from excellence, education develops negatives attitudes and has a negative influence on students and teachers, especially so in a period of rapid

expansion of education. Expansion generally entails fall in quality because while it takes less than ten years to double student enrolments, it takes much longer to double the number of competent, devoted teachers.

Today great science and great poverty and suffering exit side by side. This is because the passion for knowledge has somehow become divorced from passion for the people. What we need is to combine education, research and productivity (ERP) with wisdom, with the welfare of the people. In this the teacher has the key role. Even a small number of committed teachers can exercise a great influence.

In the ultimate analysis, the basis of everything in education is self discipline and self-control. Self-discipline is not imposed discipline; it comes through the example of persons of conviction and character. Such examples are highly infectious, and have a high multiplying effect. Evil is infectious but good is more so: light always triumphs over darkness, and truth triumphs over falsehood. In educational institutions there can be no place whatsoever for violence of any kind, in thought, word or deed. Ahimsa is both the foundation and fruit of goood education. Violence can in the end only lead to more violence. And if self- discipline and social-moral values are not respected, cultivated, and nriched in educational institutions, where else can there be a place for them?

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