

## **The Challenge of Education - EDUCATION**

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### **Action is the Source of All Education:**

Education is the consolidation of all past experience, so that one can respond to -the environment effectively. Over thousands of years, in the process of evolution of the human race, mankind has collected vast amounts of experience in the form of knowledge. As the knowledge increased it was transferred, to future generations, first through cave paintings, oral words and then through the written word. The printing press and then the radio, photography, TV etc., and now the audio and videocassettes are only the means of transferring this experience as knowledge. But none of these methods can transfer the experience completely - even a simple one such as taste, nor can they give skills, which are part of every action Thus all these records of experience can whether cave paintings or video cassettes give us only information. This information becomes knowledge, when one tries to use it. Thus if education is gaining knowledge, action is the key element to convert information from books or other media into knowledge. One of the weaknesses of our present education system is that we give information and stop there » we mistake information for knowledge.

Even a farmer with little schooling, has a lot of education, - knowledge gained through experience and can easily stump a college graduate, who carries all book information from books, supported by little experience. Information is necessary but not adequate. And all information is not correct, so one cannot always trust It One must not be a slave to all the information, dished out by the printed books or other media.

### **Action is The Test of All Knowledge:**

They say gold is tested by fire and men are tested by adversity. We may add, knowledge is tested by action. Like the process of evolution of life, by natural selection, only that information, which succeeds in action, is retained as knowledge and the rest is discarded This has an additional advantage, that failures are also an experience and therefore knowledge, though quite different from the original Thus action always adds to knowledge. Even where we have true knowledge, action keeps honing it- sharpens it; it becomes more usable and dependable.

### **A Problem is a Good Point to Start Education:**

If knowledge is the information that has survived the action test, why not start where the problem is? I understand Kamaladevi Chattopadyaya once said we, Indians are good at finding a problem to, every solution. While action exposes worthless information, bookish information can only bring forth problems, real or imaginary; only action can solve problems and add to knowledge besides. A problem is really an opportunity- they are two sides of the same coin. Then why don't we all welcome problems?

### **Failures Lead to Success:**

We are afraid of failures that is why we avoid problems. Yet it is the tough problems that really produce the most valuable knowledge. If we remove the stigma attached to failures, we will probably all progress faster. It was Charles Kettering, Research Director of general Motors and a great inventor himself, who once said, graduate engineers have a fear of failure, because of the examinations in the schooling system-if you fail you are out of the system. This makes them less fit for becoming inventors. Inventors can't shy away from failures they learn from them. They fail a hundred times and succeed only once-at the end. May be examinations are not such a bad thing after all; if we can remove the stigma attached to the failures. If we can

delink the examinations from the stigma of failures, rather than the jobs-we may also be producing more inventors, which is what we want for faster development.

### **Science & Technology are Action:**

The progress of science is inherently linked to action. This is what distinguishes modern science from ancient philosophy. As Bronowski says hand is the cutting edge of the mind. Giving science in books only is like giving a container without the contents.

Yet that is what we have been doing, all -these years in our schools and colleges and wondering why science is not leading to development. The few, who do make good contributions, do so in spite of the school education system - not because of it.

### **Good Education Must Be Based on Action:**

Many accept that science education must be coupled to action in the laboratory, How many will accept the real life world as the best laboratory to learn science? Dividing school science into physics, chemistry, and biology makes no sense. Let us take the real life problems of the region and try to solve them and involve the school students in this endeavour. This will be the best science education- not only relevant but also with a problem solving orientation. In fact it will integrate education and development.

Such a novel approach to teaching of science is being tried for the last three years in Pabal, a village about 60 kms from Pune, Here the students explore the water resources, maintain borewell hand pumps, build their own facilities, give repair and fabrication facilities to the community, do animal health service and help in pest control. They experiment and explore new devices in construction, agriculture energy, and transport. They test and collect data, try to improve and invent. They use science and therefore will get a deeper insight into science than they would have by absorbing the present books on physics, chemistry, and biology.

Action is important not only for science education but also for history, geography, mathematics, and even languages, Action stimulates the intellect, through aiding memory and visualisation. We have to choose the kind of action most suited to the subject matter of interest.

### **Pursuit of Excellence:**

Science is based on learning the individual cases and then generalising. Our education system starts the other way around, Specialisation is not, knowing more and more about less and less. Specialisation is gaining knowledge from a wide area and focussing it on a small area to produce outstanding results. Everyone cannot achieve excellence but pursuit of excellence is possible for everyone. We all can strive to do better-today -than what we achieved yesterday. If we imbibe this pursuit of excellence, centre of excellence will spring up by themselves. They cannot be planned otherwise. If we want model schools as centres of excellence in every district, the best model that other schools will find it practicable to follow, will be those who are striving to excel without having special resources that others don't have.

Given better-selected students or more resources or favoured treatment, it would be feasible to produce elite schools, but these will not be model schools. On the other hand, a school that is striving on its own to excel, given only a helping hand in knowledge and software -through trained teachers, library and technical help may demonstrate to other schools, what can be achieved, under locally available conditions- some thing that is replicable, These schools will not only be models for others but will inspire others in the pursuit of excellence.