ORIENTATION TOWARDS EDUCATION IN INDIA

'Tamaso MāJyotirgamaya'

INTRODUCTION: The present education system prevailing in our country is about a century old. Presumably, the mass-education system in India was ushered in when Lord Mecaly recommended for it and was approved by the then British Government. For the past ten years or so, we see in the newspapers centenary celebrations of a number of educational institutions founded then.

At the end of nineteenth century when English education made a humble beginning in the schools, the purpose of that learning was, to equip youngsters for the recruitment of clerical posts. A pass in Metric examination was a sufficient qualification to get a clerical job. At that time British Government in India was in need of clerical staff. The slogan prevalent in those days was 'pass metric and get job'. A poor country like ours was obliged to meet those requirements and secured the jobs for livelihood. Having understood the psychology of the poverty struck masses, some more people were trained in some more category from the utilitarian point of view. Since the British population was small they had to seek the help of local people and train them utility wise. Slowly, the Arts, Science, Commerce, Law and many more branches of learning were introduced. It was all for their administrative requirements. In the educational field the steps were primary, secondary, college etc. For our learning the textbooks were coming from abroad and later they were printed in India. Every child in India started the English education with the rhyme 'Ba Ba black sheep'. We heavily depended on foreign textbooks and teaching. To please them we adopted their customs and culture at the cost of neglecting our rich heritage.

EDUCATION FOR JOBS: All our efforts in learning resulted ultimately in securing jobs. Our people achieved excellence in every field by their intelligence, sincerity and hardwork. Those who had excellent academic track records, such people were sent abroad for higher studies to U.K. It was considered a great honour at that time. A few people were encouraged by conferring some honour in various fields. Amongst them a few were research scientists.

Thus our orientation of learning is mainly earning. Once we get a job all other ambitions would themselves be set aside. Once a person starts earning, he would begin to think next phase of life.

Along with the other branches of knowledge, science education also made a significant beginning. The schools and colleges were equipped with laboratories to conduct experiments (practicals). The branch of scientific studies created an amount of interest and curiosity in the minds of science students compared to Arts and Commerce students. The science and mathematics students were proud of their studies.

Almost all the textbooks were of foreign origin except the local languages, Indian history, Indian geography, social studies etc. From the science textbooks one could easily observe that for all the scientific discoveries and researchers, the European countries were the origin. From the studies it was evident that it was the study of science of matter. A little better

understanding of nature and surrounding us. In the textbooks we could see that some of the laws and principles in the field of science were associated with the names of discoverers. For example, Newton's laws of motion; Faraday's laws of Electro-magnetism; Archimedes principle; etc.

SCIENCE, TECHNOLOGY AND ENGINEERING: Scientific principles as such cannot be appreciated by the public. When the laws are transformed into utility models, people would realise the usefulness of science. For example the Faraday's discoveries regarding laws of electro-magnetism were transformed into generators of electricity both AC and DC by others who were good in applied science. The present day primary and secondary batteries are the result of transformation of laws known as Faraday's laws of electrolysis. The present day's electrical transformers are the results of discovery electromagnetic induction. Like this there are innumerable examples in every field. The application trial models when proved satisfactory they were mass produced.

Whenever a scientific principle or an idea is transformed into a prototype or the utility model, the same has to undergo exhaustive trials. When the trials are successful from the technical point and user's point, the item is ready for mass production. The skill needed to transform a scientific law or a principle or an idea into utility models is generally known as technological skill.

The subsequent skill needed for mass production is known as engineering skill. The problems associated in mass production are entirely different from the above two stages. The construction of dams, bridges, buildings, setting up industry, etc. pertain to the branch of engineering. This is also generally called technological progress. However, one cannot draw a demarcation line between the latter two skills.

INVENTIONS: Through the 18^{th}, 19^{th}, and 20^{th} centuries, there were countless scientific inventions and application from the point of utility. We may recall some of them though not all.

1) The laws of motion and gravitation; by Newton. 2) Laws of Electro-Magnetism; laws of electrolysis by Faraday. 3) Radio; by Marconi 4) Telephony, 5) Television: Volve, semi-conductor, transistor. 7) X-ray; by Rontegen 8) Radio-activity; by Perri Curi and Madem Curi 9) Atomic structure; by Neals Bhor 10) Nuclear fission; Hhan and Strassman 11) Controlled chain reaction and non-controlled chain reaction. Former for electricity generation and latter for Atom-bomb, etc.

At no earlier civilizations there are traces or references of similar items, referred above.

FLOW FROM WEST: All the above said knowledge both science (physical, chemical, biological, medical etc.) and applied science said above have come to us from the western side in the form of education, communication, books, periodicals, industries, industrial collaborations etc. We acquired wide range of knowledge through various levels of education, became specialists, acquired higher degrees(including (PhD's)), taught others in schools and colleges, established industries, produced products large number of employees are working there. All these progresses in our country are being appreciated by other nations as a developing country. However, the serious thinkers are sore over the fact that innovative discoveries are rare in our country. Western countries are making headway in almost all the recognised fields. There is no dearth for intellects in our country. Our country stands first in

respect of number of universities colleges and higher degree holders and PhD's. There is no problems for the Indians to get jobs abroad.

We may say for the modern scientific inventions and discoveries the European countries are the birth place. Those who took the lead before are keep lead now also.

THE INFLUENCE OF IT SECTOR: For the past two decades or so the IT sector has captivated the minds of the Engineering graduates. The high salaries offered is a point of attraction. The IT industry has absorbed a large chunk of highly qualified people. Comparatively science education haven't got many opportunities. Added to this no attractive salaries. Hence science education is suffering a setback. The apathy of science education should be tackled properly since this is the foundation for engineering also.

THE PROGRESS ON OUR SIDE: All the above is a fact looking from the point of view of material science. As for our country, before independence, Britishers ruled the country two hundred years. Before that Hindu and Muslim rulers were on mixed basis. The gross preoccupation was agriculture. There was good progress in the field of Architecture. The world famous monuments have been built. Although our nation did not pursue the type of science which western countries concentrated, our people pursued literary excellence. Mathematics, Astronomy, Medicine etc. The grammar of Pānini and the Nyayasutra of Kannada are the masterpiece which helps the study of every branch of knowledge. Yogic science, Scriptural science, Medical science, Agricultural science, Textile science, Diamond and jewellery works etc. The outcome is of world-class standard in all those fields.

The amazing achievements in the field of yogic science and scriptural science have attracted the world. The original discoveries and the subsequent researchers are wholly the contributions of India. These are no mean achievements. At one time India was a developed country. At that time the focus and scale of measurements or assessment were different.

THE CHANGING TIMES: Times have rapidly changed. The values have been drastically shifted. The modern wide range attractive products at home, at offices, dresses, fashions, consumables, the fast modes of communications, pattern of education, etc. have brought unbelievable changes. All these are mostly of western origin and imported; subsequently produced indigenously. People accept that these modern products have brought comfort to the life. There are fast means of transport and communication system to send products from one part to any part of the world. Hence product of any country can be available anywhere. It is happening too. When these facilities are available no one prefers a bullock cart.

When we are facing these changes factually every day, which are brought about by the progress of science and technology no one can ignore these. We cannot even today quote Harappa and Mehanjodaro civilizations and feel contended forever. Gone are the days when we could bask on the sun-shine of past glory. One should keep abreast with others. 'Now speak on the mobile phone; keeping the latest nuclear weapons in your arsenal and feel proud with a sense of developed nation'.

RE-ORIENTATION OF APPROACH TO EDUCATION: A time has come when we have to be really interested in material science or call it science or call it science of nature. The Rigveda instructs us 'Tamaso Mā Jyotirgamaya' (let us overcome ignorance and usher in the knowledge). At one time knowledge moved from east to west. Now the knowledge

of material science is flowing from west to east. As a nation we must forge ahead with progress. Not only we must fall in line with those who are advance, but also march ahead. For that first and foremost requirement is that the nation has to re-orient our outlook towards our education. One should learn for knowledge sake and not for the sake of job alone. Of course every boy when he turns to be a youth he needs some earning to support himself. To become independent to some extent is the pride of every youth. If this aspect is given a good thought and solved then there is a good prospect for study of science and Engineering. If one studies well, jobs are there for him. The government and big and small employers have to give a serious thought towards solution. A graduate stipendiary scheme may be introduced as an incentive. The teaching staff have to create real interest and passion in studies. They must motivate the youngsters. Not only one should learn through laboratory experiments but also more important is comprehension of hidden concepts. Student life is a premature part of life. It is life too early to conceive the concepts behind a theory or principle. As students we accumulate and not assimilate. But if the interest is deep rooted in us, one would attempt to pursue further in later days too when one is matured enough to analyse the problem more effectively. Such scholars should have the encouragement and scope too.

TIME TO FOCUS ON SCRIPTURAL SCIENCE: In this connection we recall the opinion of some of the scholars who have studied both material science and scriptural science i.e. Physics and meta-physics. The scriptural science deals with three things viz. God, beings (life), matter (inanimates). Since God is not the subject of material science, we will keep him out of our preview for the moment and concentrate on the latter two. The scriptural science is a colossal literature. It speaks on a number of topics. The above said three entities are inter-related.

The beings are called chetanas or Jeevas or life or soul. The matter is Achetana or Jada or inanimate things. The former topic concerns medical science and the latter topic concerns the material science.

The narrations and statements appearing there may not be verified in the laboratories. For the realisation of scriptural science external laboratory may not be of much use; our soul, body and mind are the seat of experiments. External labs are an added advantage. To this, if Yoga is combined a person will be endowed with extra-ordinary ability to deal with the thought processes. The scholars are of the opinion that in the scriptures the Upanishad sections contain a number of statements and narrations on the fundamentals of nature. Some of these researchers are current in the scientific field.

For example the modern science explains the origin of life as follows:

1) The current theory on life's origin is that giant molecules similar to protons and nucleic acids, reacted together with the watery surface environment of young earth commonly called primordial soup. They say that this subject remains controversial and yet to be explained fully.

2) Salt water of the ocean: The As regards the evolution of the matter science explains: it starts with either next gases-molecular agitation-formation of water-formation of earth.

The scriptural science states: Space (Akash)-gases-heat-water-earth-etc.

The point one should notice here is that science explains the sea water is salty because rivers have taken salts from earth to the ocean.

The order of evolution more or less agree in both the systems. Moreover the river waters are sweet throughout the flow. Hence one can conclude that ocean water is salty naturally since it is first manifested.

3) There are statements in the scriptural science that iron on chemical reaction can be converted to gold.

4) As regards the sun, scientists describes it is the burning of gases like hydrogen, helium etc. with nuclear fission the body is burning at 6000 degree centigrade. With passage of time there should be reduction in the size and heat also is expected to diminish. How old is the sun? Scientists have their own calculations, scriptures have their own calculations. The year assessed are at least 9-10 digits. Still sun has not undergone perceptible change in respect of light, heat or size. The sun has remained constant. The sun forms the clouds and sustains life. The description does not answer all the properties of sun.

The scriptural science reveals that there are twelve suns, as against several suns stated by science.

6) A source of heat may not be a source of light. A light emitting source may not be used as a heat source. Scientists differ in concluding the temperature of the sun based on spectrum analysis alone.

7) Of the Indian rivers, the water of Ganges has been observed to be distinct. Some time ago the Jadhavpur University undertook investigations. They found that certain bacteria's will not survive more than 24 hours whereas in the other river waters they live even 2-3 days. Those property was first observed by British doctor.

8) Of late yoga is attracting the attention of not only Indian masses but also foreigners are evincing more interest. They want patent 124 Āsanas. Yoga is a composite package of Āsanas, Prānayama, Meditation and prayers. This is purely the heritage of India.

9) In a tree the juice that is circulating is the same from top to bottom. But the taste of the bark, leaves, flowers and fruits of the same tree differs. The taste of the fruits attracts the world. One observes this phenomena. But the mystery still remains. Further the trees experience joy and sorrow is a question.

SCOPE FOR A RE-LOOK: Hundreds of phenomena of fundamental nature can be quoted from sculptural and yogic sciences, the science is also actively engaged in search of truth in these areas. In all these investigations, there is a scope to further probe and have a re-look into the analysis.

What was happening hither to was that Sanskrit scholars who knew scriptures could not see certain things there from the scientific angle because of non –familiarity of scientific outlook. Those who were scientists could not see scriptures for want of Sanskrit knowledge and scriptures. There are volumes of scientific literatures in Sanskrit, but those have not been pursued vigorously with experimental support. It is now possible for a team of scientists with training in Sanskrit and scriptures to make some headway in science of scriptural origin. It is

possible that some new idea will be discovered. What is needed is relentless persuasion of the available literature with scientific outlook.

THE CONCLUSION: The whole world appreciates the scientific and technological advances achieved during the past two centuries. I appeal to the scientists of Indian origin to look into the scriptural and yogic sciences, available in Upanishads and vast allied literature. We feel there is scope for the Indian scientists to check or verify the researches and discoveries undertaken in different parts of the world. Ultimately by any means, if the truth is realised the whole world will be benefited.

It is emphasized that the statements in these texts (scriptures) are nothing but facts. To realise these truths laboratory is the soul body and mind of every human being in addition to external laboratories. With guided approach many people have realised amazing truths, why not the scientists who are constantly in search of truths. We welcome knowledge to come to us from all directions. I once again repeat the Rigveda 'Tamaso Mā Jyotirgamaya'.

Om Tat Sat