

(4.1) Aims of Teaching Physical and Life Sciences (Natural Science)

1. Knowledge aim. Teaching of physical and life science should aim for the necessary increase in the span of one's knowledge regarding physical and life sciences helping him to understand himself and his environment as adequately as possible. The starting in the lower classes may be made with the awareness of simple facts and principles used and observed in day to day life and the sphere of this awareness may then be progressively increased in the higher classes.

2. Practical aim. The knowledge is useful only when it is capable of being applied practically. It is in this sense obligatory on the part of a science teacher to teach practical aspect of all the scientific principles and knowledge imparted to his students. The students should not only know about the scientific principles and facts, but should also be able to use them practically in understanding their

self and environment surrounding them. They must be able to harness the forces of nature and secrets of scientific world for the welfare of the society in a more useful way by learning the use of scientific principles and facts as practically as possible.

3. Development of scientific attitude. Science education should aim for the development of scientific attitude among the learners. It should help in removing the superstitions, false beliefs, wrong notions spread in the society and cultivate the habits of proper reasoning, observation and experimentation, leading to a firm belief in the testing and verification of here saying and observed facts. The science education thus should aim in providing proper opportunity for the development of scientific temperament and attitude among the students. It should create among them a spirit of curiosity for knowing about the new things, discovering their environment and penetrating deeply into the nature of the things and events surrounding them and doing all this quite systematically by adopting scientific method of thinking and solving the problems.

4 Cultural aim. The development of the culture and civilization of a country is essentially linked with the progress and improvement in the study of sciences. This fact becomes quite imperative if we see that the countries who are said to be quite developed today are those countries who are considered to be more advanced in the matter of science education imparted to their youngsters. The history of the development of sciences also reveal the same fact. The countries, quite ahead in the study of sciences, are known to have quite developed civilization and rich cultural aspect. In fact, our civilization owes much to the development of science and technology and therefore if we want to go ahead in the matter of the development of civilization and culture, we have to strive for bringing progressive improvement in the study of sciences. In case our citizens remain aloof and ignorant about the development of science and technology, it will naturally lead us to lag behind. The key for utilizing what science has given us lies in the way and manner science is being taught in our schools. Therefore, science should be taught in the schools in such a way as (i) to grasp the progress in the field of sciences, (ii) apply it for the enhancement of our cultural heritage and development of our civilization, and (iii) appreciate the contribution of the study of science in the progress and development of the culture and civilization.

5. Social aim. Study of science should also aim in the development of social virtues among the students for leading a well adjusted

7. social life and contributing significantly towards the welfare and progress of the society. It should help a child to understand and apply all what is going on around him in the name of the developments in the field of science and technology. It will not only help him to adjust socially but also contribute towards the progress of his society, nation and humanity at large. He must also be made to understand that the welfare of his self is completely interlinked with the welfare of others living in the society. The study of sciences thus should aim in helping the children to imbibe essential social qualities and virtues for becoming a responsible useful citizen. It should help him to use the knowledge and skill of science for the progress and improvement of the society and educate him properly with the evils of the misuse of science and technology for the destructive ends.

6. Vocational aim. On attaining maturity one is supposed to earn his livelihood. Our science education should also strive for the achievement of this end. It becomes more essential by noting a significant development that today our day to day life, activities and all what is manufactured, consumed and applied is completely dominated by the knowledge of science and technology. In other words, today the key of all most all the professions and vocations lies in the knowledge and proficiency achieved in the field of science. The requirement of the latest technological advancement in all fields of life and vocations has thus made us to replan and set our science education for achieving the vocational aim *i.e.*, to prepare our youngster's to earn their livelihood by (i) learning the essential facts and principles of sciences, (ii) studying relevant courses of study and (iii) preparing himself for choosing, entering and becoming successful in various occupations and vocations not only for gaining economic independence but also contributing significantly towards the prosperity of their nation.

For achieving this end, science education in our schools must have a proper systematic programme. It must prepare the students for the different occupation and vocational courses. It should also provide them proper opportunities for the adoption of those scientific hobbies which can lead them in earning their livelihood by engaging into self employment projects and small scale industries.

7. Utilization of leisure time. Science education must also aim in helping the students to learn ways and means of utilising the leisure hours as fruitfully as possible. It must provide us the ways to relax and seek proper entertainment from the nature as well as

from the technological advancement. Besides that it may be aimed to cultivate useful scientific hobbies for the profitable utilisation of one's leisure time such as photography, vegetable growing, gardening, manufacturing of soaps, face powder, cream, tooth paste, ink, varnishes etc. and repairs of electrical gadgets and day to day use appliances like radio, watches, stoves, gas burners, cycle and scooters, fountain pens etc. In the way, science education may be easily aimed to utilize the leisure hours of the students in a very fruitful way.

8. Psychological aim. Science, if taught properly, may prove a potent means for the satisfaction of the psychological needs of the youngsters. Children have excessive curiosity for knowing and investigating the things and events around them. Their areas of interests, are quite wide and diversified. They want to do things with their own hands and verify their truth by actual observations and experimentation. Science education is capable of providing proper opportunities for all the students in satisfying their varying psychological needs and thus making them grow and develop as a well balanced individuals. Consequently, science education in our schools must provide for meeting out the psychological needs of the youngsters.

9. Helpful in the study of other subjects. All the subjects taught in the schools strive in their own ways to achieve the purposes or aims of education. They have many things in common with regard to the contents, nature and purposes. Therefore, the study in one subject is, directly or indirectly, influenced by the study in other subjects. Keeping this thing in mind, we must plan the study of sciences in such a way as we may (i) derive necessary help from the study of other subjects for studying science and also (ii) may utilise the knowledge of science in studying other subjects of the school curriculum.

10. Skill aim. Study of science at all levels should essentially aim to develop useful skills pertaining to scientific observation experimentation and practical use of scientific facts and principles. All though we cannot expect a very high degree of manual proficiency and technical skills from the children studying in schools, yet we may safely aim to cultivate (i) the habit of doing things independently, (ii) to manipulate and explore the things, (iii) to observe and experiment by handling suitable appliances and instruments, and (iv) to infer and draw conclusions in a very systematic and scientific way.