

## **Science and Technology Education in Harmony with Socio-Cultural Environment**

**Danduprolu Jayasree**

Lecturer in microbiology, D.K. Govt. Degree College for women, S.P.S.R.Nellore, Andhrapradesh,  
*Jsm8hcu@gmail.com*

### **Abstract**

Science and technology advancement resulted in quicker globalization and commercialization. Globalization signifies Omni present culture (DEPFE, NCERT). Globalization has brought a radical change in our socio-cultural environment. An inherent scientific reason exists in our traditional practices, but blind following of beliefs and practices no longer be sustained. That is why modern trends and styles emerged. Modern living styles have brought a great damage to nature and environment. Education in the broad sense will play a vital role in bringing the change required in divergent ways. The right understanding and attitude towards Science and technology can serve as a vehicle for promotion of inter-connectivity, inter dependence globally. So educating the value of such practices with right understanding can give the knowledge of exploring science and technology for harmony. Common beliefs about to think less of self, the need to care for others, the natural environment, conserving biodiversity, and respecting mutual fulfillment with other species & prosperity are essential for sustainable future. This kind of attitude towards education can only be possible when parents and teachers should feel responsibility and contributing their efforts in building strong pillars of society.

**Keywords:** Science And Technology, Value Education, Morals, Ethics, Culture, Society, Nature, Environment

### **1. INTRODUCTION**

The increased amounts of knowledge in the field of Science and technology have made human life so easy. But at the same time education of scientific and technological development and technocratic approaches unfortunately did not create the most favorable conditions for human society's existence as well as for the full development of each individual person. Ideal education should show solutions for all problems of society in turn leads to qualitative and quantitative contributions to the society.

Teaching science and technology with social justice and values improves the understanding in providing education for holistic development in a more systematic and focused way. It encourages pro-social behaviors in students. Teaching Science and Technology in harmony with socio-cultural environment seeks to nurture ethical development, inculcating values, attitudes and skills required for living in harmony, with others including nature.

Values should not be treated as ideal concepts but as "empowering tools"[1] which are helpful in meeting the challenges of the contemporary social world like environmental degradation due to exploitation, misuse of science and technology, inequalities, gender bias, adverse effects of globalization, privatization and so on. Education should provide values such as 'tolerance of disparity, mutual fulfillment and cooperation which pursue harmony rather than control over environment. Many research programs in science education have attempted different ways to fill this gap of meaningful learning (Millar et al., 2000). Novel approaches in education system paid special attention to the importance of such values as respect for life, justice, tolerance, human rights and gender equality. Then only, the future citizens will use the developing science and technology for the benefit of mankind by doing less damage to environment.

### **2. SCIENCE & TECHNOLOGY**

The teaching of science, technology and society to people is generally advocated by the science education community as critically needed information through science education curriculum (American association for the Advancement of Science, 1993:Bybee1993, National resources

Council 1996). Studying science and technology in conjunction with society considered as socially relevant topics which encourage interest, critical thinking, problem solving as well as decision-making capacity for a democratic system in students. The problem is that students do not integrate it into their everyday thinking (Anderson & Helms, 2001; Hart, 2002; Osborne et al., 2003).

Science and technology were the main basis of social progress not only in industrially developed nations but also all over the world. To reach these heights of progression, a technological approach took the upper hand in the modern educational system. This technological research studies developed circumstances and formed the special view of human being towards himself – confusion, depression, loneliness, stress; towards society – corruption, adulteration and towards environment of his existence – over exploitation. Because of this process, the balance between people and environment, between natural and social structures are under the threat of damage. This approach also was not good for the environment. The need for solution of these problems gave rise to much scientific research. Science and technology education was aimed not only at improving the conditions of human life and at raising the quality of life.

It is very clear that coming decades are going to be a boom of science and technology while we are still trying to cope up with the present challenges of new technology. There are many unfixed problems and irreversible damages raised by new technology done to the environment. Hence it has many good and bad consequences. Application of science and technology in a more humane and rationale way is related to moral and ethical responsibility. Educating and teaching good attitude can only guide individual to distinguish between the good and adverse of scientific and technological advancements.

### 3. SOCIAL & CULTURAL ASPECTS

Education can shape the society and can bring the change required. The present education is largely skill based because the top most priority given to science and technology. It has made student living at the level of self, in tensed and confused competitive environment and future citizens of society as such. It ultimately reflects society, in the form of selfishness, meaningless competition, fighting and corruption etc., Value based education plays a significant role in identifying problems of cut throat competitions of contemporary world and helps in further development of people, society and creates an environment of mutual benefits for sustainable development. Today humankind has been identified that economic growth and profitability alone cannot improve quality of human life. That is why attention towards culture has been considerably increased now days.

Only initial steps were made in recent educational programs to reflect socio-cultural or environmental components. Raising global market have encouraged science, technology, engineering and mathematics. But Socio-cultural problems were much more represented in the social sciences than in the natural ones. Previous studies have shown that science instruction which deliberately involves the discussion of socio-cultural views about science concepts generates positive attitudes towards the study of science [2]. So, to improvise education it is necessary to introduce principles of interdisciplinary and multidisciplinary approaches [3]. To develop such a kind of education it is important to evaluate modern social and cultural aspects in improving education system.

### 4. CULTURE

Culture shapes the way we see the world. It therefore has the capacity to bring about the change of possible way forward for life on planet earth. Today, that goal is still a long way off. A global crisis faces humanity at the dawn of the 21<sup>st</sup> century, marked by increased poverty in our asymmetrical world, environmental degradation and short-sightedness in policy making. Culture is a crucial key to solve this crisis; (Source: preface, world culture report, UNESCO publishing, paris-1999).

The world commission on culture and development defined culture as “ways of living together”

and argued that this made culture a core element of sustainable development. Culture is an important concept in education for sustainable development. Human is a social animal, he lives in groups. In current scenario, human is afraid of no other cruel animal rather he is afraid of his own species due to inhumane interactions. Almost all of the grave threats in front of human and planetary survival originate due to human actions, and what is needed are new, or re-discovered, norms and values that can guide our action towards sustainable development i.e., fulfilling today's human needs by preserving and protecting the natural environment for future generations requires equitable and harmonious interaction between individuals and communities.

## **5. ENVIRONMENT**

Life arose from panchabhutas (five elements – The Air, water, fire, earth and akash). The reckless exploitation of these elements has brought today's scarcity and pollution problems which ultimately lead to question of survival on this planet. Our traditional culture practices with or without knowingly has given the top most priority and respect to panchabhutas, because our forefathers who shaped our culture and tradition know very well that these five elements are very essential for survival of life. Making students aware of the environment, making them knowledgeable about the importance of elements and the need for its protection is an immediate social concern. The over exploitation of environment, Ozone layer depletion, Global warming, pollution, deforestation, new technological choices, living styles etc., are cause of environmental degradation in the last century. It is important to educate science and technology along with realization of the inter dependence relationship between human and the environment for living in harmony with nature. Not only Individual's health but also the whole life on earth can no longer be maintained without concerning the preservation of biodiversity and sustainability of the environment.

## **6. TEACHING SCIENCE & TECHNOLOGY**

Science is assimilated with facts, knowledge and experiments. The subject matter of science enables student to develop critical thinking skills and knowledge of applicability. Any topic of science education must be explained for its social relevance. Teacher must be able to create a question in student mind that, what would be the applicable benefit out of particular topic explained, and also facilitate to identify the mutual support and collaboration between lives for survival. Human who are at the highest level of evolution must realize this value of survival based on inter dependence and collaboration [1]. This can be possible only when the individual at the level of student is trained towards right understanding of facts. While carrying on educational functions, teaching staff and educational institutions should establish collaboration with corresponding special scientific and research institutions involved in solving social and cultural problems. Cultural and educational institutions have made a valuable contribution by analyzing scientific and technological knowledge and distributing it among the population.

## **7. DISCUSSION**

Education must guide the students to decide what is prior important for their happy living and sustainable development. Science and Technology education is needed and must work for the improvement of harmonious human living. But at the same time this education should not disturb the environment, socio-cultural aspects of a given society. Current education system has too much intervening of science and technology, dominating the real education, because of this, the younger generation struggling to achieve something without knowing what is valuable and needed for their happy life.

In current scenario the importance of Science & Technological development is definitely not negligible. Hence Science and technology education is needed to reach the increasing demands of increasing population, for easy and better human living, but at what cost; it should not be at the cost of future generation's basic needs. Owing to use of uncontrolled technology, now we are at the sharp edge of scarcity of natural resources and already lost very important biodiversity.

In this globalised and privatized society, each one of us running after something to achieve. In this busy we left behind our values, morals and ethics. Because of this missing link in current education system, our relations in life, society, nature and environment everything is suffering.

In the name of culture and tradition we should not tell children Do's and Don'ts. Every culture and tradition has purposeful and meaningful customs. Try to explain the benefit and reasons to follow it, once we understand the value behind it, then no other cross culture traditions can disturb it. Morals and values must be inculcated into the minds of children along with their brought up. Then only student can think about the application of his learned knowledge for the betterment of society.

Parents and teachers play a very important role in shaping the society. The way of thinking of parents with regard to education must be changed. Now a day's everyone perceive education as the source of good job and future earnings. However education gives knowledge and wisdom with which we can benefit ourselves and also used for the betterment of society without causing much damage to nature and environment. Introduction of value education as a subject in curriculum of study is a very good step. It is a great responsibility on teachers to take forward the message and inject these values and ethics situationally into the minds of students. It will give fruitful results in near future when it reaches to students in an effective manner.

However, achieving sustainability people will need to be motivated with the most enlightened legislation, the cleanest science and technology, the most sophisticated research. All these qualities without values will not succeed in shaping society towards sustainability.

## **8. CONCLUSION**

Value education provides every citizen with the opportunity to acquire knowledge—is to identify what is prior important, skills – is to achieve goal of prior important, attitudes—to think of betterment of society, ethics and values – to lead his life harmoniously. It motivates and empowers learners to take responsible decisions which are important for good thought and behavior for sustainable development. In conclusion, it is possible only by united effort that humankind can create a harmonious world of sustainable happiness and prosperity.

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## **AUTHORS BIOGRAPHY**



### **Danduprolu Jayasree**

Place of work: D.K. (W). Govt. Degree College, Nellore

Academic degree: M.Sc, M.Tech

Academic status: Assistant professor

Job title: Faculty of Microbiology

Postgraduate specialty: M.Tech (Medical biotechnology), University of Hyderabad.