**ETHICS IN TECHNICAL EDUCATION : IMPORTANCE, CHALLENGES AND SOLUTIONS**

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**Abstract:**

*To the Technology Age, ethics in technology is a subordinate field of ethics addressing the ethical questions of that age. It is often apprehended that technology itself is incompetent of possessing moral or ethical qualities, since "technology" is purely tool making; but now it is believed that each piece of technology is endowed with and glowing ethical commitments all the time, given to it by those that made it, and those that decided how it must be made and used. Whether merely a lifeless a moral 'tool' or a freeze picture of human values "ethics of technology" refers to two basic sections:*

* *The ethics involved in the development of new technology—whether it is always, never, or contextually right or wrong to invent and implement a technological innovation.*
* *The ethical questions that are worsen by the ways in which technology extends or restricts the power of individuals—how standard ethical questions are changed by the new powers.*

*In this paper section 1 includes introduction of ethics, section 2 is comprised of technical education and ethical views followed by section 3 consisting of Importance of ethical and moral values, section 4 contains ethical values to be taught as a parent, teacher and code of conduct for students and finally section 5 concludes the whole paper.*

***Keywords:*** *Ethical values, morals, teaching ethics*

**1. INTRODUCTION**

Technical education provides the brain power to run the value adding processes of the nation. For the development and contribution to the conversion of material and resources into value added products and services, ‘Technology’ is the vehicle for that. The growth rate of science and technology is very fast, but the rate of honoring values is deteriorating in general [10].

Einstein stressed this part of professional expertise by his profound words, “One lesson I have learnt in my long life. All our science deliberated against reality is ancient and candid. The foremost task of education is to make this a living force and bring it to clear consciousness which can be done only if our inner balance and existence both depend on it as only morality in us can bring beauty and dignity to life.

Knowledge and expertise with wisdom and values are the need of the day, in addition to many other reasons for lowered ethical values in professional dealing, one of the most important aspect is the rapid growth of technical education. The number of students enrolled has gone up manifolds, but the number of devoted teachers has not grown at the same rate. Hence, it is high time to think and act upon introducing ethics in technical education.

**2. TECHNICAL EDUCATION AND ETHICAL VIEWS**

In 21st century, ethical decision-making is very important skill. Many would profess that it has always been a important and needed skill. As we are living in complex era of human being, information and emerging technologies are advancing and being developed at rates that human mind normally can’t comprehend. So we need to integrate ethics in young student’s education [15].

Main objective of any university and educational institute in one’s life is to preserve, to collect, to advance and transmit knowledge, with this other responsibility of universities are to stress and promote the importance of human qualities like moral, ethics and spirituality for common good [12].

Education is not only teaching technical stuff but if we take it in a broad sense, it is ability to interpret and apply gained knowledge to human needs. Education is not only the things learned in schools colleges or universities; it is the experience one has received though his/her life’s journey. As we have defined education, technical education can be broadly defined as the mixture of science and art using which the laws, materials and power of nature can be made useful to mankind. So the aims of technical education may be summarized [8] as under.

I) Acquisition of technical knowledge

ii) Development of moral, ethical and spiritual qualities

iii) Application of these knowledge and skills for the common good of the society

**3. IMPORTANCE OF ETHICAL AND MORAL VALUES**

Ethical decision making can be taught in the combining with science, engineering, technology or any other field because technology education can be used to develop ethical decision-making skills in all age of students [13].

Select a real-life ethical challenge, which are appropriate for the maturity and knowledge levels of the learners to teach ethical decision-making skill. The knowledge can be very effective by using a real-life situation. Next decide whether the students have the basic subject background or not to deal effectively with the challenge and if not, it would be better to teach that content before engaging students in the experiment. As a part of this process, let the learner realize that he/she need additional knowledge to make good decisions. Learners will definitely learn that having the right information at the right time will help them make wise decisions about technology [14]. This is a key part of becoming a technologically well-educated citizen.

Main qualities are slightly intangible and not easily quantifiable, which actually give span to education. They are important to both technology learner as well as any educated person. Though one can argue that educators alone can’t stand all the influences that the civilization places on the students, colleges and universities can still remain the focal point where these desirable characteristics may be developed, refined, nurtured and sharpened.

Many in our civilization fail to recognize that development and promotion of these qualities in the students is a vital objective of university education [8]. Education of this kind can’t be given to a learner, but our universities and colleges do have responsibility to offer to them the environment, facilities and encouragement for acquiring these kinds of qualities.

The job of technology learner requires a good understanding of human nature and of the art of handling men. Given the power of modem technology, the results of wrong choices or of errors in execution can be shocking in terms of damage to the environment and the loss of life, liberty and property. Hence, accountable practice of technology requires an understanding of social values and needs, of the relative priorities of loyalty to public, to ones profession.

In the technology learner’s curriculum of most of universities in India, the content of social science and humanities has remained abysmally low and inadequate. Hence, the Institutions have to make special efforts to make up for this deficit by providing an environment for contact with experts from varied fields through series of guest lectures, debates, essay competitions and varied other extra-curricular activities.

Existence of role models amongst faculty and sensible encouragement of general reading will also improve the environment.

**4. CHALLANGES OF INCORPORATING ETHICAL AND MORAL VALUES IN STUDIES**

Regardless of how well intended, innovation and development of new technology have an ethical dimension, Technology itself is not capable of possessing moral or ethical qualities. There are four probable domains where unethical practices are prevalent to the max extent[17].

I. Regulatory bodies such as AICTE, UGC, NCTE and so on.

II. Institutes of Higher educations namely Engineering/ Management Institutes.

III. The society and the people.

IV. The teachers and the students.

**I. Regulatory bodies:**

1. Large numbers of affiliations are being given without going into the academic requirements for the particular course/discipline.eg the Chhattisgarh educational fiasco whereas 108 universities came up taking the advantage of regulatory loophole in 2002.Supreme court had to intervene to correct these anomalies and set guidelines for the future.
2. No check or a monitoring mechanism for the selection of qualified faculty is concerned. This is left to the desire of the management of the institute.
3. No check being performed by private institute with foreign universities Eg. “The director of the international student office at one university in New South Wales indicated they were actively pushing into markets in India where document fraud is a known and serious problem”. [16] The provisions laid down for the same are being openly broken.
4. Provisions related to pay and allowances of the faculty are not strictly followed by the Management of the privately run institutes of Engineering and Management.

**II. Institutes of Higher Education:**

1. No correlation exists between the salary shown and salary paid to the staff of many institutes.
2. Corrupt practices used during exams and sometimes even the faculty are also involved. The famous case of Anti copying Act in UP by BJP Government which was later on eliminated within one hour of Mr. Mulayam Singh Yadav becoming the chief Minister.
3. While selecting the faculty, lot of pressure of top management is applied which results in compromising the quality of teaching.
4. Increasing fee structure on one or the other excuse under the apparel of development charges by the institutes.
5. No correlation between higher increment in salary and performance appraisal.
6. Not concerned with professional ethics such as punctuality, attendance of faculty and students, results achieved, overall development of student’s personality, quality research work/ projects undertaken[18]. The main concern of these institutes is to make profits by hesitant means.
7. Donations accepted while giving admissions to students and further no accounts kept for these donations.

**III. The Society and the Parents**

1. Parents allowing their wards to show off their status, wealth and prestige through unethical ways may it be cars, clothes, jewellery or expensive mobile phones.
2. Non availability of parents in the Parent- teacher meets. No monitoring of the performance of the students by their parents.
3. No checks even when their wards are using the hi-tech services particularly internet as a result of which they fall victim to hacking and other cyber crimes.
4. The working parents hardly have any quality time to spare for their wards.

**IV. The Teachers and the Students**

1. Students disobey the code of conduct during day to day life in the college.
2. Attendance and regularity issues on the rise.
3. Teacher’s commitment towards their profession particularly those teachers taking private home tuitions.
4. Internal assessment of teacher is another subject of debate which is being used as double weapon for and against the students by some of our teachers.

**5. ETHICAL VALUES IMPLICITLY TAUGHT IN SCIENCE EDUCATION**

People agreed that ethical values that are cross-culturally accepted, such as virtues of honesty, benevolence, and mutual respect among persons, should be inherent in science education. Teachers must be trained to teach science as a practice and not by rote for ethical training to be implicit in science education. If teachers do not understand, communicate, and model the practice of science for their students, there is nothing within which to incorporate ethical practices and behavior as a scientist [13].

**5.1 SOLUTION FOR IMPARTING ETHICAL VALUES IN TECHNICAL EDUCATION**

We Indians are taught ethics from our childhood in the Form of stories of ancient Shastras, life characters of great path makers like Shri Krishna, Lord Buddha, Chanakya, Swami Vivekananda and others. But as one grows up, one finds the world surrounding him/her operating in a manner which one finds very difficult to call ethical. Subsequently, one gets acquainted and used lathe environment. This makes it difficult to demonstrate and practice ethics in one’s professional life, when situations demand them. This phenomenon continues and eventually diminishes ethical practice from common life. Of course, even in present times, we do find exemplary demonstration of ethical practices by corporate leaders like N.R. Narayana Murthy of Infosys, Azim Premji of Wipro, Ratan Tata of the Tata Croup and others.

Everyone in the system of technical education has to play a role. A few propositions are presented here under.

**5.1.1 Role of Individual as Parent**

It is observed in recent times that parent’s role, except for pre-primary or primary studies of the children, regarding ethics, are becoming rather a marginal one. In general, the institutes of higher education hardly find any parent as visitor with interest in ascertaining the progress of their children, in terms of ethical values. We as parents and teachers are supposed to work together to improve the present grim situation.

**5.1.2 System of Education**

Technical education is of paramount importance in shaping the character and thought of the people and giving a new direction. At present, it is predominantly scientific and economic with a view to prepare the students for competitive commercial socket Therefore, weightage to morale and ethical values is due, which should be delivered in the form of course content at all levels of education.

**5.1.3 Role of a Teacher**

The teacher has dual roles to play. Firstly, a teacher is expected to improve continuously in his area. This is possible through hard and sincere efforts in the academic pursuits. This is imbibing Ethics in Technical Education. Secondly, perhaps more difficult, he has to set himself as a role model for generation next to emulate in ethical terms. This role modelling has to be convincing, genuine and confidence inspiring.

**5.1.4 Codes of Conduct for Students**

As we know, many organizations have developed codes of conduct for the ethical functioning in the dealings with external and internal stakeholders. Each education institute must formulate such a code, and the same must be religiously followed.

**6. CONCLUSION**

At the start of the century, we are to start learning the lessons forgotten. At a time when a question mark is raised on the social and cultural value system, it is very crucial and important to cultivate ethical behaviour amongst upcoming youth expected to generate positive value for nation through practice of engineering and technological knowledge.

You need character to be successful in the long run, as an individual as well as a society and ethics are more rewarding for this purpose than traditional parameters of results and achievements. This has to be done as part of development of a total personality of a technocrat, which is one of the prime responsibilities of technical education institutions.

Total quality principles, since their inception have proved to be most effective and appropriate for improving organizations through their impact on human aspects, as they target fundamentals and cover every walk of life.

Fortunately, a realization has now dawned on important sections of the society that commitment for values stems from genuine beginning.

As we have discussed in this paper the importance and challenges of adding ethics in technical education, it is need of the hour that all concerned should come forward and consciously participate in the process of cultivating ethical values to sustain our competitive advantage in an increasingly competitive corporate world through total quality.

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**BIOGRAPHIES**

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