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## Value Inculcation among Engineering Students

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### Abstract

*The profession of engineering, like any other, such as law, medicine and teaching is driven by professional codes of ethics and is enmeshed in social and moral responsibility. The public health, welfare and the environment safety are what the engineers are immensely responsible for. Hence, an exposure to the ethical dimension of the profession becomes highly desirable for the engineering students. Learning philosophical bases of ethical theories and enhancing the practical-moral decision making in difficult situations at the same time demand the practice of value inculcation which goes deeper into the formation of one's character. Value inculcation can be looked at from the standpoint of developing certain cognitive skills and spiritual-moral training so as to embody others' view-points and develop the universal sense of goodness, a moral perspective that equips a professional engineer for moral responsibility toward the society.*

**Key words, Value inculcation, ethics, students, engineering profession**

The Preamble of Engineering Council of India clearly states that ethics is fundamental to the values of engineering profession as this profession, the scientific knowledge and its practical use, directly affects the lives of people. The link between engineering and ethics comes from the impact engineering products and processes have on the society and environment. Hence, engineers owe social responsibility and must safeguard the safety, health and welfare of people and environment. Just as the professional incompetency is dangerous and may result into grave disasters so is the technical knowledge without the ethical direction and moral standards. Hence, the technical/professional expertise and adherence to ethical guidelines go hand-in-hand and also require value inculcation, a training toward moral sensibilities so that the professional requirements are met with social accountability. Value inculcation in the formal education thus is a precursor to developing ethical stance in one's professional life.

Like other professions, engineering profession is governed by codes of ethics, the strictures about do's and don'ts, the approved and disapproved professional behavior. Professional responsibilities are moral responsibilities which require both the understanding of technical knowledge and awareness about their ethical consequences. The word responsibility has many senses. It means 'mandatory' to follow certain guidelines like not disclosing propriety information to clients and dealers. It also is a matter of active responsibility to disclose certain important information in the interest of the public safety. In yet another sense, it means accountability for one's praiseworthy or blameworthy acts and decisions within the professional sphere. The study of ethics broadens students' knowledge about the ethical concepts, theories and ability in ethical decision making. Many disasters have occurred due to the lack of ethical knowledge and moral standards of people. Improper impact and risk assessment of engineering designs, poor and casual approach toward breakdown and preventing engineering maintenance, non-conformity to quality standards, lenient quality checks in the entire process of manufacturing, by-passing safety standards, non-compliance to the environmental norms and standards are some reasons for the grave disasters. As part of their responsibilities, compliance to defined standards, benchmarking better engineering designs and adoption of cleaner and greener technologies, engineering students and professionals also require to be aware of ethical dimension in the pursuit of excellence.

Various ethical theories define morality and moral behavior. While deontological theories regard actions to be moral when they comply with the demands of reason and done in the purity of duty or obligation, consequentialist theories weigh actions in terms of their consequences (good or bad), for example, the

utilitarian principle of ‘greatest good for the greatest number’. Similarly, virtue ethics seeks the development of certain virtuous traits like courage, honesty, justice, integrity etc. in the professionals for creating a right kind of work environment in the overall interest of the organization. These theories enable us to understand the nature of moral beliefs, judgments of good and bad and help logical analysis in overcoming the conflict of interests and take decisions in the interest of the welfare of society. They also orient us to evaluate things in terms of their intrinsic value other than their instrumental values. As Arne Naess (1973) in defending the idea of ‘deep ecology’, motivates us to see the intrinsic worth of non-human nature and our interconnectedness with it.<sup>1</sup> While the exposure to the ethical concepts and theories enhance ethical knowledge, there is a need to endow formal education with the right kind of training for value inculcation so that it yields desirable moral-professional responsibilities.

The National Policy on Education 2016 stresses on the importance of values. It states, “Value orientation is an over-arching and comprehensive area that needs conscious integration with general education at each stage including adult education, teacher education, and also technical and management education. Education has little meaning without development, nurture and internalization of values” (section, 3.2.1, NPE).<sup>2</sup> A value-based society thrives on the core values of social cohesion, religious amity and national integration. Value education assumes a far greater role in today’s globalized, highly competitive corporate world. Though the value-based society is a collective responsibility of all citizens, it is education that has been entrusted with this goal but this requires adoption of certain teaching-learning pedagogies toward value inculcation among students.

Informally we all learn moral, spiritual and religious values from our immediate environment and socio-religious affiliations. However, a socially responsible behavior requires cultivation of moral-social consciousness or moral sensibilities, that is, to view things from a universal or general standpoint above particularities or personal interests. Developing a moral perspective on things is a moral endeavor, a cultivation of one’s consciousness or character, called *bildung* in the humanist-hermeneutic tradition. The ability to discern what is good for all requires what Wilhelm von Humboldt calls the process of abstraction, that is, distancing oneself from one’s personal purposes to embrace others’ viewpoints. A cultivated soul has the habit of absorbing others’ viewpoints which involves the act of dialectic, i.e., alienating from one’s standpoint and appropriating or forming one’s opinions in the light of others. Besides these cognitive traits of abstraction and dialectic thinking, the other important trait is practical wisdom (*phronesis*) which according to Aristotle is the key intellectual virtue in matters of ethics. Practical wisdom requires both judging the general law and the situation in its own right. It flourishes on the average, the common which involves what is commonly good for all. Aristotle says, “Human action is variable and complex, and so practical wisdom concerns matters that are inexact. Its acquisition requires experience, and consists in one’s becoming able to see what matters in certain circumstances, and why. It is closely related to common sense, except that its sphere is that of the virtues as a whole”.<sup>3</sup> Vico also concedes that the common sense founds the community or social solidarity.<sup>4</sup> Moral sensibilities flourish with these cognitive skills of abstraction, dialectic and practical reasoning; for, they cultivate a universal sense, the idea of what is commonly good for all. Besides, as Gandhi stresses on the spiritual training for the realization of ‘soul-force’ and the practice of non-violence in annihilating selfishness and embodying others’ perspective to develop morality and peaceful existence these must find inclusion in any program of value education.<sup>5</sup>

Cultivation of such cognitive and non-cognitive traits is an important dimension in value inculcation, inclusion of which in formal education would give professionalized behavior a desirable ethical direction. Learning the theoretical aspects of values and ethics will definitely help understanding the application of righteous behavior and the required codes of ethics, especially for the students belonging to engineering and technical domains. Hence, engineering institutions must have the courses related to values and ethics in order to sensitize ethical awareness and develop moral sensibilities through cognitive skills and spiritual training.

## References

1. Naess, Arne, (1973), “The Shallow and the Deep, Long Range Ecology Movement: A Summary” in *Inquiry* (Oslo), Vol. 16.

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2. Ministry of Human Resource Development, (2016), National Policy on Education: Report of the Committee for evaluation of the new education policy, Government of India. Retrieved 30 October, 2017, from <http://www.nuepa.org/New/download/NEP2016/ReportNEP.pdf>.
  3. Aristotle, (2004) *Nicomachean Ethics*, Roger Crisp (trans. & ed.) Cambridge University Press.
  4. See, Gadamer, Hans-Georg, (1982), *Truth and Method*, New York: The Crossroad Company, p. 17.
  5. Gandhi, M.K., (1997), *Hind Swaraj and Other Writings*, Anthony J. Parel (ed.), Cambridge University Press India Pvt. Limited, New Delhi.