

MANAGEMENT OF ENGINEERING EDUCATION IN INDIA

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ABSTRACT

In this paper, management of engineering education in India shows the emerging trends in engineering and education sector. This paper introduces the student profiling system and evaluation of engineering institutions which can be used by management to improve the quality of engineering education. In era of globalization and building competence among students, management must focus on student profile creation, planning, evaluating, implementing and controlling the model of continuous quality education services provided by them for the ideal growth and development.

Keywords: Engineering, STEM, Engineering Education.

I. INTRODUCTION

Engineering education refers to teaching epistemology and professional practice of skills which includes undergraduate, postgraduate, and advanced engineering education. It is typically accompanied by examinations and supervised training as the need for developing the skills of engineering. Science, technology, engineering, and mathematics (STEM) education in schools serve as the foundation for engineering education. The present Engineering education intends to equip our students with key transferable skills which empower them to meet the needs and requirements of frequently changing technological and professional expectations of engineers. In the 21st century, the emergence of information technology, biotechnology enhances the life of human. The epistemological meaning of the word engine is to create which is derived from the Latin root "ingenerate" and in English it means 'to contrive'. Engineering is a systematic way of using human resources and material resources to fulfill human needs and requirements, which is much older than science. Science boosts the mental exercise of the inquisitiveness of a human being and refers to the understanding of natural phenomena only, whereas engineering has always endeavored to the needs of man from ancient times. Engineering started first in the places where measurements and computation were initiated. Mesopotamia, Egypt, Greece, and Rome were the places in the world where engineering has developed and flourished. Originally Engineering perturbed itself with structures of buildings, bridges, roads, canals etc. Fundamental role of an engineer is to convert theories of sciences into useful applications for the well-being of mankind with changing objectives from time to time. Specific practical problems are addressed by engineers whereas scientists are less bothered by practical applications of their innovations and investigations. Engineering is the application of science to realistic problems and systems for the benefit of mankind.

'Engineering' and 'engineers' is pre-historic. The man who discovered fire, build homes, and make tools and weapons were engineers. The historic and visible ancient civilizations are bright examples of engineering skills like a pyramid of Egypt, the Hanging Gardens of Babylon, and the Great Wall of China. The Roman civilization, Harappa Mahenjardaru civilization reminds us about the greatest engineers of the ancient world. India's technological education has an important contribution to the entire education system and plays a vital role in our social and economic development. However, due to several factors, the country's engineering education system is experiencing a decline. Poor infrastructure, lack of qualified departments, lack of funds, etc., resulting in unemployed engineering graduates. In this context, the country's manufacturing industry is suffering because it does not have a high-quality labour force. The Indian government has taken some positive steps to strengthen the manufacturing sector. However, addressing the issue at the grass-roots level remains largely ignored. In order to improve the quality of engineering education, a major reform of higher education policy is needed. After all, improvements in the education system will strengthen manufacturing, thereby expanding the country's economy and driving it on the path to progress (Sahoo and Das, 2019). A author recommended educational reforms and explained the key aspects of management and the outstanding value of the higher education system in India.. The study provides a comprehensive overview of the needs of value-based higher

education systems in India, Brazil and South Africa(Saeed,2020).today's most fittest strategy for developing economy is creation of knowledge for improve and innovate the business.

II. STUDENT PROFILE CREATION

The age of Indian college students belongs to the period of transition from adolescence into adulthood; this transition is influenced by social demands and responsibilities with specific challenges. Life Skill education during this transitional period may help the students to lead a satisfactory and quality life. Though as per culture the age of getting adult status varies from ancient times, in older times it was recognized as puberty or physical development but legally the age of 18 eighteen years is considered as the end of adolescence and beginning of adulthood. Young adulthood is a period of adjustment. The young adults try to meet social expectations and develop attitudes, interests, and values for the individual. The young adulthood stage persists for several years their college life. This period is considered a period of social and emotional stress, technological stress, a period of commitments, a period of value changes, and adjustment to a new life. Interview a few College students about their problems, difficulties, worries, and concerns both in the present context and regarding the future. Match your findings with the issues discussed above.

As per Piaget's theory at the young adulthood stage cognitive abilities increases in various directions, this includes thinking in logical and deductive order. The young adult can synthesize information and put judgment with proper analysis on any idea which is possible due to their abilities and skills which involve themselves in critical and evaluative thinking. Young adults are only after convincing about the utility and relevance of rules, norms, or standards they accept and follow. Cognitive abilities help young adults plan, make strategies, and decide their future. Young adults are found to engage themselves in activities like crosswords, analyzing films, reading a range of books, surfing the internet, and playing strategy-based games, which is possible due to their cognitive potential, competence, and autonomy. As per Erikson's theory, young adulthood is the period of development of identity and intimacy, they seek answers to about their existence and individual identity, which is difficult to answer and involves the synthesis of one's need, experience, and his future goal. The answer to these questions reveals gender identity, carrier choice, self-image, self-concept, and sense of freedom, one's value, formulating goals, and deciding upon a satisfying lifestyle. This is also the stage of intimacy where they like to develop relationships that exhibit a sense of satisfaction, but the failure to which may lead to isolation. Lawrence Kohlberg's findings say young adulthood is the period of redefining and reconstructing values as per individual and keeping themselves abiding by the self-chosen ethical principle, moral responsibility. From Bandar and Waiter Michel's view, the culture and environment emphasize the personality development of young adults by the acquisition of thoughts, feelings, and actions of role models and vicarious learning.

Indian students are suffering from the problems of population explosion, poverty, underemployment, urbanization, environmental issues, insecurity, competition, rivalry, technological stress, and uncertainty about the future. These challenges require a strong sense of self-cognitive, affective, and psychomotor abilities. Challenges faced by the Indian College Student in Havighurst's Developmental Tasks, 1972 are as follows.

- Achievement of Independence from their parents and others in terms of emotion.
- Self preparation for a desired career
- Preparation for family and marriage life
- Keep ready to take civic responsibilities
- To achieve socially responsible behavior
- To achieve the gender, role.
- To achieve more logical and ideological interpersonal relationships.
- To adapt advanced roles in society.
- To find friendly group.
- To develop constructive leisure time activities.

Globalization and technological change in our life and socio economical structure are the major factors that influence the young adult in the family; we need to develop a program that addresses the needs and challenges faced by young adults by transforming their ability to overcome the challenges. Life Skills Education and Universal Human Values can promote competence among young adults.

In the age of globalization and modernization, young adults are facing challenges in the selection of vocations because of the increasing varieties of careers and changing features of society, which emerges as a specialization of tasks, displacement of sexual stereotype occupation, lack of security at works, unrealistic expectation from individuals by their organizations in corporate mode, poor self-appraisal, unemployment, and underemployment. The present scenario of carrier choice by young adults destroys the individual's sense of self. The role played in describing an individual's identity develops a psychological moratorium or endorse their parent chosen goals and values.

Gender itself develops a clear picture in development of individual's identity. The society and social movements induce the changing behavior and concept of society in terms of gender and sexual identity. The young adults deals with uncertainty, doubt, suspicion, rivalry, exploitation and competition etc. The management of stress is the major challenge of the present era. The use of alcohol and toxic elements develops neurotic conflicts and anxiety which gaining popularity affects social, psychological and financial aspects related to young adults in their college life. The young adults are also facing difficulty in developing interpersonal relationship among friends, peers, family members and colleagues. The healthy relationship can be developed by openness in communication, unbiased acceptance, right evaluation, natural acceptance which must be practiced in their education. The self identity searching is based on one's attitudes, feelings, values, beliefs and individual learning expectation.

III. EVALUATION OF ENGINEERING INSTITUTIONS FOR IMPROVING QUALITY

Before discussing the subject of evaluation of management bodies, it is important to understand the working system of institutions. The management institutions system is mainly invested by students, who are trained to obtain the needs of the business world through a process, with teachers using physics and ethnographic management information resources. Evaluation refers to examining the components of the system and checking whether they meet the desired standards to meet the quality requirements of the College for quality education. The evaluation of the engineering institutes should be based on

1. Student profile formation and evaluation just beginning of the course
2. The productive characteristics and placement of students who are employed by other means within six months of the end of the course through a campus interview or otherwise.
3. Strict implementation of the curriculum as planned to provide students with a variety of learning experiences in order to develop the desired skills.
4. Number of participants in extracurricular activities for personality development.
5. Provide teachers with academic freedom to promote innovation, research and development in the teaching process.
6. Development of regular training and retraining programs for staff development.
7. Dynamic linkages with the world of work and community.
8. Environment for growth and development.
9. Regular seminars, workshops and live projects are the main resources for students.
10. Plan and organize all academic and common course activities of the institutes in advance.
11. The interaction of Industry with institute.

IV. CONCLUSION

Thus in competitive environment to create competent work force the institute management must have to plan, implement and evaluate quality and reinforce the courses. Engineering plays a vital role in society, whether it is the manufacture of machines, software, systems, or some kind of structure. Because engineering projects are often complex, they require many dedicated staff, which is why engineering management is so important.

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