SWOT Analysis on Present Technical Education in India

H. Raja and S. Pathak

ABSTRACT

Education is the most important sector to be looked into in the process of building a powerful nation. The stakeholders of the education system parents, students, universities, industries and the governments have to work as a team to fulfill this objective. To our disappointment, on the other hand, the diminishing standards of institutions and the teaching learning process that are being practiced in most of the professional and other institutions especially in India have apparently caused calamity and severe damage to the culture and character of the country as such. The material covered in this Paper mainly deals with such problems, lacunae in the operational procedures adopted in imparting knowledge, feasible solutions to overcome such problems and a code book that might bring renaissance in the system when properly understood, accepted and implemented.

Keywords: Higher Education, ICT Tools, SWOT Analysis

I. INTRODUCTION

Academic experts in India had been constantly visiting a number of professional institutions and industries in India and different foreign countries for decades on some pretext or the other, collecting significant data for the purpose of study and documentation. The data collected so far by the experts have formed the basis for our SWOT analysis especially for our study on the present plight of professional education in India (Pathak et al., 2019; Pathak et al., 2020).

Based on our study, the following have been identified as the strengths and weaknesses of Indian education system and opportunities and threats faced (Pathak et al., 2019; Pathak et al., 2020).

Strengths
1. Strong interest among our youth to study Engineering.
2. Considerable admission capacity has been created by the private sector (Raja et al., 2020).
3. Increasing interest of Industry Associations (CII, FICCI, ASSOCHAM, and NASSCOM) and of Professional Societies to collaborate with academic institutions (Chandrarak et al., 2021).
4. The Accreditation initiatives of NBA and NAAC are serving to promote quality improvement in Engineering Education (Raja et al., 2021).
5. The TEQIP scheme funded by the World Bank provides the necessary resources for up gradation of about 100 institutions in the country (Sahu et al., 2021; Kumar et al., 2021).

Weaknesses
1. Engineering Education perceived only as a business opportunity by some (Diwan et al., 2016).
2. Severe shortage of qualified and competent faculty, especially in ICT (Tiwari et al., 2021).
3. While there are islands of excellence, these are rather few in number (Raja et al., 2020).
4. Lack of interest among graduating engineers and doctors for pursuing either research degree programs or teaching careers (Vishwakarma et al., 2020).
5. Lack of availability of (Genuine) PhDs for faculty positions.
6. Lack of adequate industry-institute interaction
7. Mismatch between education received by graduates and job requirements.

II. OBSERVATIONS OF SWOT ANALYSIS

The technical education in India is governed by the following stakeholders (i) Employees, (ii) Students, (iii) Employers, (iv) Society, (v) Alumni and (vi) Government. Figure 1 show as to how these stakeholders are connected to the system (Lenka et al., 2018; Raja et al., 2018).

A. System Theoretic Approach to Study Present Day Technical Education in India

In general, a ‘system’ is defined as the one which transforms an input or a set of inputs into an output or a set of outputs. Systems are categorized as (i) single input single output (SISO) systems, (ii) single input multi output (SIMO) systems, (iii) multi input single output (MISO) systems and (iv) multi input multi output (MIMO) systems. Fig. 1 shows an overview of the technical (professional) education system in India (Sinha et al., 2011; Jain et al., 2020; Mahmood, 2020).
Technical education system in India is treated here as a multi input multi output (MIMO) system with commitments from the stakeholders as inputs and value additions (i) Career livelihood, (ii) Prosperity livelihood, (iii) Tangible/intangible support, (iv) Competent workforce, (v) Industrial development and (vi) Societal development as outputs. The system parameters involve the following functionalities (i) Manpower development, education and training, (ii) Career development and employment, (iii) Interaction and communication, (iv) Research, development and consultancy, (v) Continuing education and (vi) Work skill development. Figure 2 shows the matrix of the model of the professional education system in India (Mahmood et al., 2020; Chandrakar et al., 2020; Tiwari et al., 2020).

It is but natural that stakeholders of any system would have expectations and requirements from the system, be it a business house or charitable trust. But are the means and methodologies by which these are currently being fulfilled justified? – A sincere self-introspection is required. Let us have a quick review of what kind of expectations and requirements that stakeholders of the professional education system practiced in India have. Figure 3 pictorially outlines the expectations and requirements of stakeholders (Raja et al., 2018; Raja et al., 2017).

Most of the students join professional courses only with the expectation of getting good placement with a large pay package whether they deserve or not, though their expectations are quite justified (Chandrakar et al., 2021; Prithiviraj et al., 2017).

Most of the faculty members and staff have taken up to teaching profession only because of the fact that they could not get into highly and indiscriminately paid ‘software jobs’ (!?) and those teaching jobs are available aplenty; they expect promotion and frequent hike in salaries whether they deserve or not, though their expectations are quite justified (Raja et al., 2017; Khan et al., 2016).

Most of the alumni of an institution, especially of a private self-financing institution do not even say that they studied in that institution, and they prefer to identify themselves with the university to which the institution is affiliated; they expect the parent institution to gain global identity, name and reputation which they would love to share though their expectations are quite justified (Rawat et al., 2016).

Most of the promoters of professional institutions have two agenda while promoting institutions; one is an open agenda, that is, to give wide publicity with false claims in order to attract students in bulk and the other is a hidden agenda, that is, to make money and make more money, though their expectations are quite justified (Shukla et al., 2016; Raja et al., 2016; Diwan et al., 2016).

The stakeholders under the category ‘Society’ are (i) Parents and (ii) Industries; parents force their wards to go in for professional courses only with the expectation of sending their wards to foreign countries or to companies (preferably software companies) to earn a lot of money instantly and immediately; companies wish to hire students indiscriminately only with the requirement of head counting and filling bench positions, though their expectations are quite justified (Mate et al., 2016; Khan et al., 2016).

The government organizations (most of the officials in key positions) under the coveted expectations ‘overall growth of the country and shining nation’, sanction permission indiscriminately to less known or unknown, never the less, greedy people to start up any number of institutions with same name, of course, after a nice
permutation and combination of their personal names and family names suffixed with least priority words like ‘Institute’, ‘College’ ‘Research Centre’ ‘School’, to name a few only, only for pecuniary and other benefits from the promoters (this fact has been brought out to light by media and apparently the governments are taking corrective steps to establish academic justice, let us hope so); though their expectations are quite justified. We wish to present here some of our observations as a revelation of the SWOT analysis. These observations are our opinions made on certain quantitative measures taken during the analysis (Diwan et al., 2016; Jain et al., 2020).

B. Attitudes of 21st Century Students, Teachers

Institutions and Parents (a general opinion as observed by many senior academicians, professionals, administrators, policy makers who volunteered to participate in the analysis (names and affiliations are kept confidential) (Bhensle et al., 2014; Pandey et al., 2014)

C. Attitude of Students

- Learning is very easy, and it requires no effort.
- Access to information is very easy and so knowledge is acquired without any effort.
- Like instant food, one can have instant knowledge, instant skills, instant experience.
- Prosperity requires no hard work, sacrifice and experience and it is a DEMAND (Pandey et al., 2014).

D. Attitude of Teachers

- Knowledge is a commodity to be transacted.
- Knowledge acquisition is need based and not interest based (Pandey et al., 2014).
- Research is a waste, but promotion is a MUST.

E. Attitude of Institutions

- Institution is a trading joint, and education is a pure business (Dewangan et al., 2014).
- Students are customers and Teachers are SALESMEN.
- Institution is a factory wherein quantity is a slogan and quality is a jargon (Dewangan et al., 2014).

F. Attitude of Parents

- Wards should somehow get into the best (?) schools (good looking buildings and canteen).
- Wards should at any cost earn more marks (even if they read books one day before examination) (Jangde et al., 2014).
- Wards should necessarily get into highly paid jobs (even if they know nothing and do nothing) (Chouhan et al., 2014).

III. TREND IN PROFESSIONAL INSTITUTIONS - A BIRD’S EYE VIEW

The past, present and future trends among major stakeholders ‘teachers’ and students’ of professional institutions, especially in India as observed by the analysts are briefly tabulated below (Tandand et al., 2013).

A. Warning

This trend might lead to the following (Shukla et al., 2013):
- Lack of Interest and Stagnation in Knowledge Generation.
- Improper Use of Knowledge in every walk of life.
- Self-Centered pseudo-Knowledge Based Society (Shukla et al., 2013).
- Suppression of Knowledge and Intellectual Exploitation.
- Proliferation of Look-Busy-Do-Nothing (LBDN) Attitude.
- Threat to National Integrity due to Knowledge Divide (Tiwari et al., 2009).
- Compartmentalization, Individualization and Recession.
- Unemployment, Social Injustice and Organized Crimes.
- More committees, conferences to talk about these evils (Raja et al., 2015).

B. How do we come out of this situation?

The question that arises now is “Do we have a Basic Feasible Solution to overcome this problem?” Possibly ‘YES’ and possibly ‘NO’ – a paradoxical outlook is the only answer as on now. However, we shall look into the part of a Code Book developed by an NGO named Forum of Scientists Aiming Peace and Harmony (FOSAPAH) to resolve these kinds of problems (Diwan et al., 2015).

IV. THE CODE BOOK

Like ‘Ten Commandments’ this code book dictates certain ‘dos’ and ‘don’ts’ to the stakeholders ‘students’, ‘teachers’, ‘institutions’ and ‘parents’ (Patel et al., 2012; Patel et al., 2012).

A. For Students

Dos
- Read while you read and play while you play
- Be clean, eat well, do physical exercises, dress well.

### TABLE I: TEACHERS

<table>
<thead>
<tr>
<th>Issue</th>
<th>Teachers of the Past</th>
<th>Present Day Teachers</th>
<th>Teachers of the Future</th>
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</thead>
<tbody>
<tr>
<td>Bosses</td>
<td>Sages on the Stage</td>
<td>Facilitators</td>
<td>Guides on the Side</td>
</tr>
<tr>
<td>Leaders</td>
<td>Practiced Virtues</td>
<td>Pseudo Leaders</td>
<td>Leaders</td>
</tr>
<tr>
<td>Knowledge Generators</td>
<td>Knowledge Collectors</td>
<td>Knowledge Collectors</td>
<td>Knowledge Collectors</td>
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<tr>
<td>Socially Responsible</td>
<td>?</td>
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<td>?</td>
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</tbody>
</table>

### TABLE II: STUDENTS

<table>
<thead>
<tr>
<th>Issue</th>
<th>Students of the Past</th>
<th>Present Day Students</th>
<th>Students of the Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized Learners</td>
<td>Interactive Listeners</td>
<td>Practiced Virtues</td>
<td>Leaders</td>
</tr>
<tr>
<td>Knowledge Collectors</td>
<td>Knowledge Generators</td>
<td>Knowledge Collectors</td>
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• Be polite, respect every one, have civic sense, follow rules (Nagpure et al., 2012).
• Discuss concepts, attend classes regularly, write notes
• Use library and laboratories very well.
• Contact teachers, question them, discuss with them, confide in them.
• Ignite and kindle the FIRE in you to learn and learn more and more (Nagpure et al., 2012)
• Talk less, do more, behave yourself, present yourself, volunteer.
• Increase core competence, communication skills, ethical balance.
• Respect neighborhood, nature, ecology, fellow human beings.
• Understand, adapt, be silent and proactive, contribute and appreciate (Khan et al., 2015)
Don’ts (Raja et al., 2020; Kumar et al., 2020; Kumar et al., 2021)
• Do not postpone studies and writing assignments and records.
• Do not shout while talking anywhere in the campus or public places.
• Do not make ugly noises while eating and drinking (Raja et al., 2021).
• Do not litter on roads and inside buildings (Sinha et al., 2013).
• Do not drive fast (Speed thrills but it kills).
• Do not beg teachers for marks and irritate them (Sinha et al., 2015).
• Do not gossip and pass dirty comments on others.
• Do not misbehave in the class and cause embarrassment to others (Patra et al., 2018; Tiwari et al., 2020).
• Do not resort to malpractices in exams and cook up results in labs.
• Do not rag juniors and mislead fellow students (Ragging is a CRIME).
• Do not support mob mentality and take part in illegal activities (Raja et al., 2020).
• Do not steal books from library and components from labs.

V. SUMMARY
If the Dos and Don’ts of the Code Book are understood and practiced sincerely, the New Millennium Professional Education would turn out to be a multi-disciplinary, multi-mode, multi-media, multiple-partner enterprise. To be precise, the Professional Education System in India would turn out to be a Multiple Input Multiple Output (MIMO) Self Organizing System; else, it would turn out to be a Self-Destructive Chaotic System. Stakeholders! It is up to you to take it or leave it.

CONFLICT OF INTEREST
Authors declare that they do not have any conflict of interest.

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