

AN INTEGRATED APPROACH FOR COUNSELLING FOR PROFESSIONAL GROWTH IN TECHNICIANS AND ENGINEERS

Dr. V. Thanikchalam*

SYNOPSIS

A review of the existing counseling services reveals the inadequacy of trained staff, paucity of data / information, and disconnected networks of the Institute of Applied Manpower Research, NTIMS Units and the Technical Institutes, Directorate of Technical Education, and considering the problems faced by the students and their parents, an integrated approach for counseling technicians and engineers for professional growth is developed. The proposed approach integrates the existing resource institutes and provides an active platform for networking which will improve the efficiency and effectiveness of the technical education system.

INTRODUCTION:

Technical Education grows at a fast rate. In the next twenty years, India will likely enter

into the club of developed Nations. It has got all potentials. The growth of technical education is spectacular in the last ten years. The following table presents the current status:

| | Engineering Colleges | Intake | Polytechnics | Intake |
|------------------|----------------------|-----------------|--------------|-----------------|
| All India | 1,195 | 3,48,000 | 1,221 | 2,34,991 |

(Excludes IITs, and Agricultural Engineering Colleges under Agricultural Universities.) The above number is increasing every year.

Around 6,00,000 students join technical education institutions both polytechnics and

engineering colleges every year. This number may reach 1 million in another ten years. The students and parents are facing innumerable problems in choosing technical institutions and selecting appropriate programmes and courses.

*Professor & Head, Correspondence Course Unit, NITTTR, Taramani, Chennai - 600 113.

OBJECTIVES:

- To evaluate the needs of the high school and higher secondary students with respect to higher education programmes.
- To prepare for appropriate counselling process for professional growth and development of technicians and engineers.
- To identify the sources for developing data bank on employment potential of technicians and engineers.
- To suggest strategies to develop professional competencies in the students in collaboration with industries.

POLYTECHNIC PROGRAMMES:

Polytechnics offer diploma programmes in Engineering, Technology, Commerce, Architecture, Pharmacy and other industry related occupations in the following mode:

- Part-time courses for I.T.I. certificate holders conducted in the evenings holidays or distance education mode as in Andhra Pradesh and Maharashtra.
- Full-time courses (3 years).
- Full-time sandwich courses (3.5 years).
- Multipoint Entry Credit System (flexible programmes).

ENGINEERING COLLEGE PROGRAMMES:

Engineering Colleges offer 4 year degree, 5 year sandwich programmes dual degree and five year integrated master degree, 3 year lateral entry programmes, and 7 semester part-time degree programmes for diploma holders.

POLYTECHNIC STUDENTS:

Mostly lower middle class students apply. Their focus is immediate job after completion of

diploma programmes. The brightest students opt for B.E./B.Tech. degree through lateral entry.

ENGINEERING STUDENTS:

Mostly middle class to upper middle class family students apply. The brightest students plan for overseas programmes leading to masters and doctoral.

STUDENTS PROBLEMS:

Majority of the students are not having enough knowledge about the job potential, types of industries and types of jobs. Many times they are competing for same jobs. Even corporate sector releases ambiguous advertisement prescribing either degree or diploma as the basic qualification. Many times they settle down for diploma holders.

INDUSTRIAL SCENARIO:

After 1991, India joined World Trade Organization (WTO). Indian economy is globalized. Foreign Direct Investments (FDI) have contributed to modern production process. Indian goods and services are being exported to other countries, without any trade restrictions. Many hitech industries have been established in India. These industries select their employees only through well established and high performing institutes.

CURRENT HUMAN RESOURCES REQUIREMENTS AT TECHNICIAN LEVEL :

- i. 2 - 5% of the students get jobs in Government.
 - ii. 10 - 20% of the students get jobs in Private Sector.
 - iii. Less than 5% of the students are absorbed in family business or start entrepreneurship.
- Most of the hi-tech manufacturing companies need highly skilled

technicians.

- Manufacturing industries look for multiskilled people.
- There is a great demand for computer literate technicians.
- Since technology is upgraded quickly, there is a need for life long learning.

There is a great demand for highly skilled technicians in manufacturing industry.

CURRENT COMPETENCY REQUIREMENTS AT ENGINEERS LEVEL:

The modern manufacturing industry needs engineers with excellent exposure to design, manufacture, and manage human resources at shop floor level. They expect high competencies in planning, design, project management, human resource management and product development. For lower end jobs, there is a big competition from diploma holders.

Many companies select diploma holders instead of graduate engineers due to economic pay / salary expenditure on the employees.

FACED BY THE STUDENTS:

The following problems are synthesized based on the feedback received from the students, and teachers of the technical institutions:

1. After completion of school education there is no guidance available for the students for selecting professional programmes / courses. No school system has trained faculty / counselors to provide services to the students.
2. The course fee is very high in the private polytechnics and engineering colleges.
3. Most of the students could not get guidance from their family. Also in the technical institutions, there are no proper counsellors who can offer career guidance. All, the posts sanctioned for training and placement officers are vacant due to paucity of funds.
4. There is no match between her/his ambition and the courses offered. Most of the programmes are outmoded and inflexible. About 40 to 80% of the sanctioned posts of faculty are vacant. They are filled by part-time teachers.
5. About 85% of the students do not get exposure to industry. There is neither case study method nor industry based real life projects.
6. Since, many polytechnics colleges are located in rural places, the Industry-Institute Partnership is almost nil or not taking place due to paucity of initiatives and or due to lack of leadership.
7. About 95% students do not get apprenticeship training. There is total unwillingness of the industries to provide training. The funds allotted to Apprenticeship Training are very limited.
8. Many students do not have managerial skills for preparing bio-data and appear for interviews. Still many are not proficient in communication skills, problem solving skills, and interpersonal skills in the work place.
9. They are not aware of the expected competency profile by the industry. Most of the curricula are not prepared with the focused competencies.
10. There is no guide or coach for getting their problems solved due to paucity of trained staff.
11. Many technical institutions are not having qualified and experienced faculty. Majority of them are having only basic degree with less than two years of experience.
12. Many technical institutes are not having

any senior faculty with doctoral qualification or industrial experience.

AN INTEGRATED MODE FOR STUDENT SERVICES

From the above scenario, a draft model is prepared for providing services. This model has got six stages.

Stage-I : At 10th Standard / 12th Standard

Counselling about future scenario

- Further Professional Education
- Programmes available

Stage-II : Before Joining the Polytechnic / Engineering College

- About technician courses / engineering courses / job potential.

Stage-III : Counselling and Alloting the Branch

Details about Financial Assistance and Orientation to the Engineering Programmes

Stage-IV : Achievement Appraisal and Guidance

For selection of various courses, electives, and projects.

Stage-V : Exposure to Industries, and Job Profile

Supervising / Management development programmes; Guidance to job

Stage-VI : Career Development

Campus Interview, and Placement Services

Stage-VII : Alumini Services

Providing appropriate services after completion of the programmes

The needs are further described in the following section :

| Stage | Student Needs | Information to be Provided | Expected Outcome |
|-------|--|--|---|
| I | Future Programme : I.T.I. Polytechnic, Vocational +2 any other, Professional Programmes. | About the programmes, entry requirements, methods of application fees to be paid | Selection of college / Institute and courses |
| II | Types of diploma / degree programmes offered by the polytechnic / colleges | Course details, job potential, pay expected. industries, Government / Private Sector Companies | Selection of Appropriate Programmes. |
| III | Registration, Hostel Transport, Financial Assistance, Course Material, and Course Schedule | Counselling, verification, assistance for registration | Joined the programme |
| IV | Selection of electives, industry based projects, industrial training and internship | Nature of elective needs of industries, job potential | Selected appropriate programmes / industrial training |
| V | Career opportunities, growth and development | Employment news, campus interview, online registration, apprenticeship training and internship | Applied, appeared for interview and get selected |
| VI | Alumni needs ● Letters of reference ● Certificate | About student records. Achievement of special skills | Guidance and Assistance |

AGENCIES TO BE INVOLVED :

1. Training and placement officers; It is better to fill-up this post early in all technical institutes.
2. Joint Directors of Technical Education: They are in-charge of industry-institute-interaction. These officials can bring more success to the industry-institute interaction.
3. Regional officers of Confederation of Indian Industry (C.I.I.) who represent all the industries: Through C.I.I., they can prepare brochures on the human resource requirements, fields of specialization, scale of pay etc.
4. Institute of Applied Manpower Research, (IAMR) New Delhi and its NTMIS Centres: They can accelerate their data collection, preparation and distribution of reports.

5. State Level Chambers of Commerce: These chambers can extend assistance to the technical institutions for training and development.
6. Private online recruiting companies: Now, they can conduct one day exposure to the students.
7. Indian Society of Technical Education (I.S.T.E.): At National Level, ISTE can prepare Handbooks on job potential competencies, and relevant courses.
8. All India Council for Technical Education (AICTE): It can provide training programmes for Training and Placement Officers.
4. Courses, needs of completing the programmes: Each institution should bring detailed guide books to provide information and answers to frequently asked questions (FAQ). CDs can be prepared on the courses and procedures.
5. Career digest, online information, websites: In the last ten years, the institutions have prepared their web sites to provide all needed information for the students and others. Such websites should be updated every semester.
6. Students profile, address, e-mail ID: The Institution should encourage every students to have his/her e-mail ID.

INFORMATION TO BE MAINTAINED:

Considering the needs, the polytechnics and engineering colleges have to develop appropriate updated data bank:

1. Information brochure, application forms, certificates required, procedure for application. The State Ministry of Education in Cooperation with other Ministries should bring manuals of professional educational programmes every year.
2. Job profiles, needs, and industries: The Institute of Applied Manpower Research, New Delhi the Directorate of Technical Education, and the Technical Universities in Cooperation with State Industries Ministry could bring Job profile information brochure once in three years for all branches.
3. Projects, cooperating / networked industries.: In addition, the technical institutions could prepare their own information manuals based on this networked organizations.

LINKAGES:

With Schools

- The professional institutes should conduct open houses for the students and their parents every year.
- An informative book on the courses and programmes should be made available to schools.

With employers govt. departments private industries overseas employers.

- Appropriate information brochures on the networked industries, government departments should be prepared and circulated. With students / parents.
- Provide student and parent volunteers for clarify the doubts in the institutes.

SUMMARY:

The above model has been prepared based on the real needs of the students. Hence, it is essential for the polytechnic / college administrators to implement by preparing the needed information systematically and training the student counselors and after the services.

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