6. Conclusions and Suggestions
6. CONCLUSIONS AND SUGGESTIONS

6.1 CONCLUSIONS

The study is basically related with analyzing the status of technical manpower in the state of Maharashtra and the problems of its proper deployment. The study covers various aspects related with technical education, development and deployment of technical manpower, analysis of various policies related with technical education and policies regarding advancement of the state in particular. The study also deals with various aspects of quality standard of technical education as well as industry institute interaction, so that a proper co-ordination can be established between demand and supply of technical manpower as well as problems related with its appropriate development. The major conclusion is based on various statistical aspects and policies executed by the Government as discussed in this chapter.

The concluding portion of this study explains the realities of employment, status of technical graduates, the problems faced by technical institutions and graduates and industry in further advancement of technical education and technology in the state.

6.1.1 OPINIONS REGARDING THE GROWTH AND PROSPECTS OF TECHNICAL COURSES

The two terms growth and development are used synonymously. Growth broadly refers to an increase in output or income while the term development refers to the underlying structural, institutional and qualitative changes that opened the capabilities. In any rational and honest society, one is more concerned with "how to develop" rather than "whether to develop". Education is one of the most important elements of human capital at it endows on with more energy and the inclination to use that energy in the service of social development. Technical education is always in the center stage of any economy. There are historical evidences to show that almost any country that reached the status of developed nation

* You are never given a wish without also being given the power to make it true

- R Bach (6.1)
had invariably achieved wonderful success in managing it’s technical education programs. 

*Therefore it is the urgent and pivotal need of the age to give a sincere attention and thought to the design and implementation of technical courses.*

Today’s observation shows the predominance of the human nature’s of comparing oneself with the other. Opening of one institutions leads to the opening of several other institutions. There is an unbound growth of technical institutions since 1986 onwards. In national policy on education 1986, one empirical formula has come out, that there should be 10% of the growth in technocrat’s passout. It is applicable to the linear system. But in the state like Maharashtra where there is already an unlimited growth, after every two years this formula should be revised and this 10% factor should be reduced to either by 0.5% or 1% depending upon the need.

In order to derive this demand the basic prerequisites is that, Government, Policy makers and industrialists should come together and chalk out the need of the industries in future. For this data of the industrial organization can be collected regionwise. It helps in forecasting the future requirement, so that proper planning in fulfilling the basic demand of the industries can be done. Due to this loss of human talents can be curtailed. Institutions should impart the basic fundamentals to the today’s budding technocrats. It is the responsibility of the industries to train them in the high-tech areas. This can achieved from collaborations with many organizations and nations. At the time of designing the courses the demand and supply of the technocrats has to kept in mind. In some disciplines like Civil, Mechanical, Electrical and Electronics the engineers are in excess where as some faculties like Bio-medical engineering, Nuclear Physics, computer sciences there is a dearth.

* Failure is the only opportunity to begin again, more intelligently

- Henry Ford
“In this century,
the microchip had extended the human brain,
machines had extended the human muscles.
In the present scenario,
the software has become the slab of steel.
Fiber optics and digital screens have become the railroads
and highways of transportation.
While information is now the actual material”
(Dr. A. A. Ghatol)

6.1.2 OPINIONS REGARDING CONTINUING EDUCATION FOR ENGINEERING MANPOWER

Many times one is forced to stop his/her studies at the graduation level
due to various personal reasons such as financial difficulties, lack of facilities in rural areas,
dearth of institutions or even when they exist, no accessibility. Keeping all these constraints in
mind one can improve one’s qualification for this Government of India had introduced a
scheme for continuing education for engineering manpower. Continuing education is - all
activities and efforts by the individual to upgrade his/her knowledge, abilities, competencies and understanding in his/her field of work or specialization so as to become a more
effective professional. 73

6.1.2.1 PROFESSIONAL DEVELOPMENT IN THE INDUSTRY:

The system of technical education is designed to cater to the needs of industry
for multilevel job positions. This ranges from training skilled workers, technicians, supervi-
sory staff or foreman, middle and top level managerial/executive personnel as well as research
planning and developmental staff. The objectives of the continuing education then can be iden-
tified as follows:

1) The Technicians and engineers engaged in industrial activity will have to update their
knowledge keeping in view the technological developments. Obsolescence can be observed in several sectors of industrial activity over a period ranging from 10 to 15

73 Panse M.S., Towards a Dynamic Continuing Technical Education System in India, University News, June 1993, pp. 1-10
years. Thus continuing education programs to replace old technologies may be come imperative.

2) Depending on the type of industrial activity it may also become necessary for technical and managerial personnel to acquire the knowledge in related fields. In areas pertaining to the industrial activity, engineers or technicians of one specialization may be required to acquire knowledge in other disciplines.

3) The personal ambition to rise to higher levels in profession stimulates employees in industrial sector to seek avenues to acquire higher qualifications from the universities. A satisfied employee with ample opportunities to get elevated to higher levels in the employment will be an asset to the organization. Thus there is a need for industrial or research organization both public and private sectors to encourage their employees to prosecute their studies further to acquire higher qualifications either on full time basis, or part time basis.

6.1.2.2 TRAINING THE TEACHERS

Falling standards in higher education has become world wide phenomenon causing acute concern to policy makers. One of the reasons for the poor quality of college education is the amateurism that has come to mark the function of engineering college teachers in India.

For technical teachers there is no training program. It was assumed in the past that the teachers in technical education did not need any training in teaching methods as they were expected to evolve into competent teachers through “on the job” or voluntary efforts to improve their competence. Due to this wrong assumption amateurism in respect of teaching is evident today in technical education. This has adversely affected the quality of teaching. The quality improvement program (QIP) has failed to achieve this aim. It is imperative that the teachers be trained at the very initial stage of their career. Efforts should be made to

* No one knows what he can do till he tries

(6.4)
establish a technical education staff college in different regions of the country with broad objective of the pre-service, in-service training of technical teachers and conducting sponsored research and studies in technical education.

Thus the need of hour is the necessity of having professional training in different branches of engineering in order to equip the staff with the proper methodology to impart the knowledge to the budding engineers and this methodology keeps on changing according to the times, or else there can be a lot of communication barriers. There are very excellent and knowledgeable teachers in science and technology, but are not able to impart the same to their students. To avoid this caricature modern techniques of teaching could be taught to the staff by means of various modes. Seeing the plight of hundred of students who are out of universities with the degree but are not in a position to get into any institution due to the lack of ‘know-how’ of teaching are rejected in the interview or if at all they are employed they do the job only for the sake of job, not with an intention of drawing out the best from the students.

Thus it is clear that a well designed system of continuing education program for the employed manpower to provide ample opportunities for life long learning is necessary for industrial sector as well as for technical institution.

6.1.3 OPINIONS REGARDING EMPLOYMENT POTENTIAL FOR TECHNOCRATS

As we approach to the 21st century, rapid changes in the technology and world socio-economic order will have a profound impact on the professional environment in which our further engineering graduates will have to work. Since it takes a minimum of four years to complete a professional engineering degree and planning for curriculum changes requires two to three years of lead time, thus it is imperative that technical educational

* An intelligent plan is the first step to success

- Zig Ziglar
institutions examine their curricula with respect to preparing our future graduates for the next century. In a recent surveys of employers and management consultants about basic skills needed for technocrats were identified as:

a) **Academic skills**

   Ability to think critically, communicate effectively - both in terms of concrete data and abstract concepts and to learn continuously.

b) **Personnel management skills**

   Regardless of the field of employment, ability to project a positive, upbeat, adaptable and responsible attitude.

c) **Teamwork Skills**

   The 1990s and the 21st century is both about specialization from a solid generalized educational base and about teamwork - about recognizing and utilizing teamwork. *Very few jobs in the workplace of today are for “loners”*. The ability to work with others is very critical in all levels of an organization. An individual may in fact work concurrently for different projects as leader, junior member of a team or as a co-worker.

Thus the technocrats as a segment of labour market will have to face critical situations in the years to come. The reasons are as follows:

1) Changing the requirement of the industry.
2) Change in concept of skills.
3) Impact of computer on work structure and work system.
4) The increase in importance of highly specialized jobs.
5) Emphasis is given on continuous upgradation of knowledge.
6) Future is only for specialized workers.

Thus reducing employment chances for technical graduates who cannot improve their knowledgebase, skills and competence.

*This above all; Be true to thyself*

- Francis D Assisi
6.1.4 OPINIONS ABOUT LABOUR MARKET CONDITIONS

The researcher has already discussed the position of the labour market for different disciplines of technical education along with their estimation and absorption rate. If one summarizes this data the following conclusions can be drawn:

1) The labour market in Maharashtra is growing at a very slow rate. The expansion is restricted due to slow rate of industrial advancement.

2) Depressionary trend in the world economy as well as on the national scene.

3) The level of competition within the states from the industrialists coming in the other state is increasing, which has resulted in changing overall composition of industrial economy of market.

4) The policies of liberalization and globalization have also changed the overall economy scenario making many strong industrial bastions weak. The inflow of manufactured industrial goods, heavy rate of competition from multinationals have curtailed the chances of growth of rate of industrial employment.

5) The growth of Hi-Fi technology, advanced information technology and computerization has reduced many manual jobs as well as encourage a heavy mechanized system. Thus employment potential for degree and diploma holders is significantly reduced.

6) The existing setup of technical education offers a curriculum which is not be fitting the requirement of advanced manufacturing technology.

7) The inflow of technically competent workers coming from private institutions and autonomous body also has challenged employment potential of technical growth from conventional engineering institutes.

8) The falling standard and stagnant approach to quality improvement of engineering education and poor states of knowledge and skills has questions the credibility of engineering graduates. Thus become a basic challenge to the absorption of engineering graduates by highly renowned engineering and manufacturing institutes.

* Put your talent into your work, and your genius into your life

- Oscar Wilde (6.7)
9) The low level of Industry Institute Interaction is one more cause of poor absorption rate. In order to encourage this interaction the institute has to increase quality standard and offer a need base educational input to meet specific requirement of different industries.

6.1.5 OPINION REGARDING THE MANPOWER PLANNING OF THE TECHNICAL GRADUATES IN THE ECONOMY.

Technological change is an accelerating process. The opportunity for new techniques increases geometrically as the number of basic ideas increases arithmetically. Technology is a problem solving process. The selection of technology depends upon cultural, environmental and economic criteria that define a problem and the characteristics of it’s solution. The hired techno-personnel should be productive from the very first day, is the prime requirement of the industry. The general market trend is that the technocrats should generates three times of the amount, whatever the organization is spending on them. In order to survive in current dynamic world, one should take the correct decision in riding on the correct wave, otherwise it is lost to oneself, organization to which one belong and ultimately to national economy. The economy is rapidly being industrialized. Due to this -

1) The number of industries and potential of employment is increasing rapidly in the selection of technology in particular.

2) Maharashtra state is highly industrialized with high rate of industrial employment.

3) The demand for technical graduates in the state has always remained impressive. The absorption rate of technical graduates has always remained satisfactory. However this period is increasing.

4) This increase in the period of the absorption indicates that this growth rate is not in tune with absorption of technical manpower. The reasons are -
   a) Sluggish growth of industries in the last decade.

* HABIT, if not resisted, soon becomes a necessity
   - St. Agustine
b) Recessionary trends in the economy.

c) Stabilized industries require limited manpower.

d) High rate of increasing the technical institutes.

e) Continuous increase in supply of technical manpower higher than the demand rate of technical manpower.

f) The jobs are increasing in the specialized areas and there is a dearth of specialized courses and thus specialized personnel.

g) Need of quality education i.e. need based, value based.

h) Inadequate infrastructural level of institution and insufficient training facilities to improve the quality of the staff.

i) Lack of support from industrial agencies like Maharashtra Industrial Development Corporation (MIDC), Maharashtra Small Scale Industries Development Corporations (MSSIDC).

j) Limited monitoring by apex institutions like AICTE and ISTE.

k) Healthy and satisfactory Industry Institute Interaction is must.

A highly technically educated person with business acumen and further trained in handling and motivating people around him through intense training in Human resource skills as well as advanced hi-tech technology is a clear winner in any competitive environment that is prevailing at present or that the future is likely to bring in.

In the above discussion the researcher tried to analyzed and explain the various dimensions of growth, development of present status of technical education as well as industry institute interaction in the state of Maharashtra. It will be a tautology to say that technical education is the backbone of Higher education and in the ultimate sense national economy of any country. On the contrary it will not be out of place to accept that without

* WELL - TIMED silence is the most commanding expression

- Mark Helprin
sound and rational policy on technical education, industrial and economic growth of any country is beyond possible. The researcher has tried to throw light on various aspects of technical education as well as policies implemented by the Government in Maharashtra particular for the development of industries as well as technical education in the state. In this research the merits and limitations of these policies as well as their success and failures are analyzed. It will be a right to conclude that inspite of healthy initial growth of technical education the institute are facing certain problems. These problems are mostly functional and can be solved if an appropriate mix of rational policies and functional decision are executed. If one accepts the proposition that "Without technological advancement the social and economical stability is impossible, then there is no reason for adjustment and compromise to dilute it's quality and reduced pace."

6.2 VERIFICATION OF HYPOTHESIS

The study started with three basis hypothesis. This hypothesis is related with present status of technical manpower and quality and standard of technical education and evaluation of technical education as well as other employment related policies. In the study the attempt was made to evaluate the validity of the hypothesis.

It was presumed in the first hypothesis that without a sound technical manpower national economic development is quite difficult and there is a need to streamline the structure of existing technical education policies. After analysing various facts and figures in the proceeding chapters the researcher has found that hypothesis is valid and has a sound logical basis. The researcher presumption that quality of technical education has to be enhanced is found valid.

The second hypothesis regarding upgrading the quality of technical education in the light of changing technical and economical scenario is found valid. Keeping

* Small opportunities are often the beginning of great enterprises
in mind the rapid development in the sphere of industrial advancement and changes in the technology, it becomes more appropriate to restructure the entire system of technical education by enhancing its quality.

The third hypothesis that quality of technical manpower is continuously enhanced is also found valid. The rate of technical obsolescence in India is very high. The competition at global level is increasing very rapidly and demand an upper age in terms of skills, competence and quality of technocrats. A high order technical knowledge has become the major basis of industrial foundation. It will not be possible to improve India’s national economy unless and until continuous effort are made to upgrade the quality of technical education. From this point of view the hypothesis is found valid, that there is need for continuous upgradation of technical manpower.

6.3 SUGGESTIONS

In the text discussed in the previous pages, the researcher has tried to find out the problems faced by the technical institutions, graduates and industry. Similarly an attempt has been made to discuss the various dimensions related with technical education such as quality standards, industry institute co-operation and status of technical education in the labour market. Keeping in mind the downfall of technocrats in the labour market it becomes necessary to improve the standard as well as demand of technical education so that high caliber youth with skills and knowledge can further be utilized for industrial development and nation building. Few suggestions are offered in the backdrop of above discussion.

6.3.1 SUGGESTIONS REGARDING IMPROVING QUALITY AND STANDARDS OF TECHNICAL EDUCATION.

A great quantitative expansion in the field of the higher education has taken place in India, during the last four decades. The Policy makers of the National Policy on

* THERE is no pillow so soft as a clear conscience
Education (1986) were concerned about the mushrooming of a large number of institutions within a short span without appropriate and adequate facilities. Hence it has become imperative to assess the quality and standard of technical education. This leads to the establishment of two bodies which have taken up accreditation of educational institutions and programs.

1) The national Board of Accreditation (NBA), under the aegis of the All India Council for Technical Education (AICTE)

2) National Assessment and Accreditation Council (NAAC) sponsored by the University Grants Commission.

**6.3.1.1 PREREQUISITES FOR ENSURING QUALITY OF EDUCATION**

There are five essential prerequisites for ensuring quality of education.78

1. Teaching aims and objectives should be clear, worthwhile and appropriate to student’s and employer’s needs.

2. Students and employers should contribute to the judgment of curriculum design, delivery and outcomes.

3. Curriculum policy should encourage new methods of promoting learning.

4. Staff development policy should include appointment, induction, appraisal and development.

5. Institutions should evaluate the attainment of their objectives, and adjust their practice accordingly.

Further, it is necessary to grant autonomous status to educational institutions to increase their effectiveness.

**6.3.1.2 PURPOSES OF ASSESSING QUALITY**

In order to increase effectiveness of educational institutions it is essential to assess quality.

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* 78 Sarkar N. R., Development of Higher Technical Education Central Bureau of Education, India 1946*
The various purpose of assessing quality are as follows -

1. Globalisation of education calls for an equivalence between the degrees awarded by different institutions.
2. If we cannot measure any aspect of an institution/program, we can not manage it.
3. What gets measured, gets done.
4. If we do not measure results, we cannot distinguish success from failure.
5. If we cannot identify success, we cannot reward it.
6. If we cannot reward success, we are probably rewarding failure.
7. If we can demonstrate results, we can gain credibility.
8. If we cannot recognize poor quality, we cannot correct it.

6.3.1.3 QUALITY AS APPLIED TO TECHNICAL INSTITUTIONS

According to Harrington “Quality is meeting or exceeding expectations. Quality is provides all customers with products and service that meets their needs and expectation on time at minimum cost.” Critical Factors of Quality in Educational Institutions

The major functions of an technical institution are teaching, Research & Extension Services and Administration. Samuel and Jagadeesan (1995, p 8) 54

6.3.1.4 FACTORS OF QUALITY IN HIGHER EDUCATIONAL INSTITUTIONS

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<tr>
<th>Teaching</th>
<th>Research &amp; Extension</th>
<th>Administration</th>
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<tbody>
<tr>
<td>2. Attitudes of faculty</td>
<td>2. Planning &amp; Scheduling</td>
<td>2. Files network</td>
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<tr>
<td>5. Teacher-Student relationship</td>
<td>5. Transfer of technology</td>
<td>5. Hierarchy importance given</td>
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<th>Teaching</th>
<th>Research &amp; Extension</th>
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<tr>
<td>7. Evaluation system</td>
<td>7. Literature availability</td>
<td>7. Training imparted for development professional</td>
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Fig. 6.1 Critical Factors of Quality in Higher Educational Institutions

6.3.1.5 STANDARDS - MEASURE OF TECHNICAL EDUCATION

The term ‘Standard’ signifies the following:

i) A criteria or basis for measurement

ii) A definite level of excellence aimed at or possible.

For assessing Quality, we have to establish measurable standards. This can be done by laying down Performance indicators for each of the Key Performance Areas.

The performance indicators must

a) be achievable

b) be measurable

c) specify a time frame for completion

d) assign responsibilities to specific persons or teams

6.3.1.6 ACCREDITATION AS A PROCESS OF QUALITY ASSURANCE

Accreditation is a process of quality assurance, whereby an approved institution or program is appraised at intervals, not exceeding six years, by a group of external peers as to whether it meets the norms and standards prescribed by the Accrediting Agency from time to time.

* If you educate a man, you educate an individual, but if you educate a woman you educate a family

- Henry Wallace (6.14)
The objectives of accreditation are -

a) To assist the public, prospective students, educational institutions, professional societies, potential employers and government agencies, in identifying those institutions and their specific programs which meet the minimum norms and standards prescribed by the Council.

b) To provide guidance for the improvement of the existing institutions and programs and also for development of new programs.

c) To stimulate the process of bringing about continually improvement in Technical Education in the country.

Initially accreditation has been kept as a voluntary process. But later it will become a compulsion since students will apply only to accredited institutes.

Later on, accreditation may be made essential for institutes applying for an increase in seats. Only, those institutes may be considered for grants which works for research, development and modernization. These steps will act as pressures on the institute to seek accreditation. Accreditation for Engineering programs has already started from June 1996. During the period upto September 1996, about 50 programs have been graded using a four point scale i.e. A,B,C and Not-accredited.

6.3.1.7 METHODS OF ASSESSING QUALITY AND STANDARDS

The procedure for assessing Quality and Standards consists of :

i) Questionnaires,

ii) on-site visit.

i) Questionnaires:

The Questionnaires can be mailed to the institutions before the on-site visit by experts. This will enable the institution to conduct a self-study. The filled in questionnaire

* The best way to predict the future is to create it

- Peter Drucker
should be reviewed and discussed by the members of the team before visiting the institution. The information provided by the institute will form the basis for evaluation. The questionnaires should not ask information which would not be used in the accreditation process. The responses to the questionnaire should be amenable for computerization.

The Questionnaire can contain fixed response, restricted response and open ended Questions covering all the relevant aspects of the program/institution. The responses to the Questionnaire should be authentic, the Head of the institution should certify that.

ii) On-Site Visit:

The on-site visit has to be conducted by a team of experts who have been specially trained for conducting accreditation. The main purposes of the on-site visit are;

1. To validate the information furnished by the institute in the Questionnaire.
2. To supplement the above information with other relevant information.
3. To assess to qualitative factors associated with the accreditation criteria which cannot be evaluated reliably from the information furnished in the questionnaire.

These factors will include the following:

a) Learning environment
b) Organizational culture
c) Morale of students and staff
d) Quality of work done by the staff and students.

Reports of the on-site visit:

Based on the observations the teams have to submit two reports.

1) A full and detailed report containing conclusions, evidences and recommendations for the use of the Accrediating Agency. This report will be held confidential.

* Determine that the things can and shall be done, and then we shall find the way

- Abraham Lincoln
2) A brief report highlighting the strengths and weaknesses of the institution identified by the visiting team. This report will be sent to the concerned institution for enabling it to initiate remedial measures.

6.3.1.8 TOTAL QUALITY MANAGEMENT IN TECHNICAL INSTITUTION (TQM)

6.3.1.8.1. A NEED FOR QUALITY MANAGEMENT

In the post liberalization era, during this decade accelerated industrial growth and information explosion provide the most fundamental challenges to the Management of Technical Institutions in India. The changes are so profound and accelerating that any attempt to respond them using established principles, models, practices and processes are likely to be out of order. At the same time there is a critical need to establish a common platform of understanding technical education management so that the demands of the reforms do not result in slow and delayed response. It will further deteriorate trust by industries and society in accepting technical institutions passouts and services.

There is an urgent need for technical institutes to develop a sophisticated response to this new changing environment or climate. Designing or adopting structures and models in the crises may exhibit efficiency temporarily but which will lose sight of the main purposes of technical institutions. The net effect of pressure from the government, students, parents and industries and other agencies will bring extreme competitiveness in the institutions.

Reducing or stopping grants by the government and funding agencies, increasing non-plan expenses and intensified competition for internal revenue generation, are the problems converted into crises in many institutions.

* Character development is the great, if not the sole, aim of education

- O’Shea

(6.17)
There will be inevitably increased specific demands on technical institution as suppliers technocrats to the society as a whole. The concern of quality in delivery is further complicating the design of right approach for managing technical institutions. The emergence of new Indian culture of expectations where “customer driven” or “client driven” needs are most important. It forces the institutions to be in a dynamic interaction with society, industries and other stakeholders.15

6.3.1.8.2 FEATURES OF TQM IN TECHNICAL INSTITUTION

TQM has three crucial features that distinguish it from other theories applicable for managing technical institutions.

a) **It is holistic** - It permits every aspect of organization, every relationship. It therefore, offers an integrity and coherence that are lacking in most other models.

b) **It is value driven** - TQM places fundamental significance on values and purpose. It is therefore introducing moral imperative into management that seems necessary in technical education system.

c) **It is about managing the interpersonal components of the organization and equally acknowledges the interdependence between an organization and it’s environment.**

TQM has to evolve in response to the needs, context and values of specific technical institution. There will be significant difference between an industry and public sector, grant-in-aid institution and private institution in the way in which TQM is interpreted and applied. However, certain fundamental principles of TQM will remain constant.

6.3.1.8.3 STEPS FOR TOTAL QUALITY MANAGEMENT

For achieving objectives of total quality management in technical education system, following basic steps are required:

---

(i) Develop appropriate institutional goals and communication system considering the organizational structure.

(ii) Encourage the voluntary and creative activities by forming Quality Circles (QC)*.

(iii) Develop participation of people in setting and realizing institutional goals effectively.

(iv) Develop mutual trust between various groups and within the group members through appropriate interactions.

(v) Develop leadership qualities at various levels through staff training programs.

(vi) Organize training to faculty in conduct of need-based continuing education programs for working professional to develop industry-institute interaction.

(vii) Develop appropriate attitudes of people towards problem-solving, improvement in performance and total quality output.

(viii) Organize formation of voluntary groups at various levels, departments and sections for total quality in the institution.

(ix) Use statistical methods for the quality checks while operationalising the scheme of improvement through QCs.

(x) Provide suitable work environment in the institution with appropriate interaction of management and strategy.

(xi) Introduce flexibility in the system to incorporate changes necessary for improvements in performance.

(xii) Integrate the creative and innovative efforts of various groups (QCs) for realizing the institutional goals of improving quality.

(xiii) Provide appropriate recognition/rewards to the voluntary groups (QCs) and individuals for their improved performance in achieving institutional goals of quality.

(xiv) Immediately publicize the achievements/success of QCs in the institute and in the state as a whole to keep up the tempo of quality improvement.

(xv) Repeat QC experiment in solving other problem areas.

* Quality Circle is the group of employees to identify, select and solve the problems pertaining to their work area which leads to work effectiveness and enrichment of work life.
(xvi) Repeat the QC experiment for improving other institutions.

(xvii) Adopt the QC strategy to develop the value system in all technical institutions.

(xviii) Obtain feedback of QC strategy and continuously improve upon the strategy to derive optimum output from human resources.

Thus the strategy of QCs should successfully be used for introducing a planned change to improve total quality in technical education system.

FIG. 6.2. PLANNED CHANGE THROUGH QUALITY CIRCLES

* If you wish to be great, be self-effacing and humble. The tru laden with tree always bends low
- Shri Rama Krishna

(6.20)
6.3.2 SUGGESTIONS REGARDING REMOVING FAULT IN THE EXISTING MANPOWER POLICY.

The existing manpower policy has many limitations as it fails to meet aspirations of interested youths and at the same time fails to give justice to the expectations of industries and National Planning. There is a gap at both the ends or on one side there is oversupply of technical manpower in certain areas and on the other side there is a dearth of competent technocrats, capable of dealing with critical problem of technology and providing useful leadership in the field of Research and Development.

Following suggestions are made here to overcome this gap -

1. Systematic approach is adopted while deciding number of admittants to various disciplines in the field of engineering.

2. A National technical policy be formulated that will encompass following aspects
   a) Deciding short term and long term objectives of technical manpower policy
   b) Formulating a phased program to meet these objectives
   c) Preparation of definite targets to be achieved on yearly basis regarding demand and supply of technical manpower in different disciplines.

3. Formulation of integrated national technical manpower program having a broad outline of total manpower requirement at national level in different disciplines of technology. Similarly statewise and regionwise technical expert needed in future is also be decided. This demand be integrated by appropriate supply mechanism that will decide intake and outflow of technical graduates in different states so that there will neither be excess nor under supply of manpower or imbalance between demand supply mechanism at regional and national level.

4. A National Commission for technical manpower deployment be established giving opportunities to the competent engineering graduates and technical experts to get meaningful job and exhibit their skills.

5. A scheme for professional accreditation of technocrats be formulated. Technocrats and engineers should be encouraged to participate in this national register of technocrats.

* Wise people reflect before they speak. Fools speak first and then reflect on what they said.
6. Technical institute be asked to formulate their courses consistent to the national and regional requirement and eliminate the redundant courses.

7. More autonomy be given to technical institutes in formulating their syllabus, policies and skill development programs.

8. New courses andyllabi be brought into practices on urgent basis keeping in mind changes happening at the global level.

6.3.3 SUGGESTIONS REGARDING EMPLOYMENT POTENTIAL OF TECHNOCRATS

The employment potential of technocrats can be improved by incorporating the following suggestions at unit industry and national level.

a) Industry Institute Interaction should be encouraged at all levels helping the industries as well as technocrats in exhibiting their skills and get meaningful jobs.

b) Distance learning programs for upgradation of quality skills and acquisition of new knowledge should be encouraged. This will facilitates in reducing the rate of obsolescence of technical personnel. Similarly it will help them to keep and upgrade their job potential.

c) Separate employment exchange and technical employment guidance bureau be established at the district and regional level. This employment exchange bureau should work as monitoring and liasoning center between technical graduates and industries.

d) The Industrial association chamber of Commerce and Engineering colleges/institutes should come together to find out the opportunities and means of deployment of technical manpower at different levels.

e) Specialized schemes promoting self employment of technical graduates be floated not only to supply capital but offering marketing and consultative assistance. The Director of Technical Education (DTE), Ministry of Industry and Commerce as well as engineering institutions should form a pool to guide aspirants youth to establish their

* Never tell someone they are wrong that is a disastrous tactic

- Dale Carnegie (6.22)
independent unit. Further a consortium be formed which should encourage establishment network of Small Scale Industries (SSI) units working as ancillary to certain major units and industrial estate.

f) A national employment guidance should be established to maintain balance between demand and supply of technocrats and remove required imbalance. This will also encourage quick transfer of technology and technocrats.

g) Encouragement be given to establishment of technology park and specialized technical and industrial estate.

h) At global level many changes are occurring in the field of technology. To keep pace with these changes emphasis should be given on establishment of specialized Research and Development laboratories and Industrial Research and Development institutes. Such institute will work with perfect harmony with industries and various business houses, where possible business houses and corporate houses will be allowed to established their independent research and development laboratories. This will facilitates rapid absorption of technology and even expedite the process of technological advancement.

i) Technical manpower is the core strength of the country and hence improvement of quality of technical manpower has become the most essential aspect of National planning. Specialized training institute, guidance center and advanced skill upgradation schemes for in-service training be provided.

6.3.4 SUGGESTIONS TO IMPROVE LABOUR MARKET POSITION

The labour market position is basically determined by three basic factors namely economic planning, resource availability and state of technology. From this point of view following suggestions are offer -

(i) Industrial development should be given priority in the economic planning. Here industrial development includes the development of Agriculture, industry and technology based farming.

* One of the secrets of life is to make stepping stones out of stumbling blocks

- Jack Penn
(ii) Encouragement be given to liberalized industrial policies. Industrialist, enterprises and even co-operatives be allowed to established their own units.

(iii) The industrial state should be developed as a network for proper co-ordination between Small Scale Industries and large scale units. To compete with international standard and multinational companies, quality improvement programs both on product and person be encouraged.

(iv) More fund be deployed in the development of infrastructural facilities and service sector facility and this will help in rapid industrial advancement and even absorption of technical manpower.

(v) In the process of industrial planning involvement of technological industries, technocrats and industrialist be encouraged because of which demand and supply balance of technical manpower can be rightly maintained.

6.3.5 SUGGESTIONS REGARDING EFFECTIVE INDUSTRY INSTITUTE INTERACTION(III)

6.3.5.1 CONCEPT

The fundamental objective of Technical institute is to subserve the technology needs of the country including the generation of necessary human resource inputs required for the industry and industrialization. To achieve this objective, the entire technological education and research has to be developed around the requirement of the Industry and the emerging areas of technology. No University or Institution can succeed in this direction in isolation without involvement from Industry. Academic world and the Industry together hold the key to the technology development in many of the core areas of our country’s economy.

The survival and renewal capability of any Industry depends largely on the induction of improved technology. When the Institutes and Industries work together

* Heaven never helps a man who will not act
both are benefitted. The institute gains insight into the problems of the Industry and this provides a base for research and education. Unfortunately, in our country right from the beginning, the educational system and Industry have been run on parallel lines. The Industry never gained confidence in the institute and the institute never thought of the Industry in it's technological pursuits. Hence, all the subsequent efforts to develop linkages remained only as symbolic relationship.

The continuous Industry Institute Interaction is possible only when a symbiotic relationship is developed between these two. The ultimate aim of such a relationship will be the creation of confidence in industry by the institute resulting in the industry voluntarily involving the university right from the feasibility/project appraisal stage itself. The development of such relationship requires firstly careful understanding of the industrial needs such as relevance, cost effectiveness, time bound programs, technology upgradation etc., by the institute and in turn the understanding of the institute's capabilities and limitations by the Industry. Further, the dimensions of such relationships have also to be clearly delineated and understood in their proper practical and functional perspectives with a clear vision of opportunities and awareness of the constraints and limitations on either side. The various dimensions which require such considerations are:

6.3.5.2 DIMENSIONS OF INDUSTRY INSTITUTE INTERACTION

1. REORIENTATION OF CURRICULUM

The institute should have it's curricula and research oriented towards the need of the Industries and entrepreneurs so that the human resources generated from the institute can quickly be adopted to the industrial environment without undue loss of time.

2. EXCHANGE OF EXPERTS BETWEEN TEACHING INSTITUTIONS AND INDUSTRIES

It is necessary for the university to create an environment in teaching for healthy mix of university faculty and experts from the industry thereby leading to the concept

* Great souls have wills, feeble ones have only wishes
of exchange of experts between the teaching institutions and industries.

For example, while starting a new course in the emerging areas, the institute can restrict itself to forming a ‘core group’ with a minimum staff and invite experts from industry to form the ‘Visiting faculty’.

3. INVOLVEMENT OF TEACHING STAFF IN INDUSTRY

The core faculty of the University itself should be exposed rigorously to the requirements of industries. This can be achieved by deputing the teaching staff of the institute both on short-term and long-term duration for specific or general industrial assignments.

4. INSTITUTE TO GAIN CONFIDENCE OF INDUSTRY

Institute must so develop its capabilities as to be looked upon by the Industry and by entrepreneurs as their technology brain trust reservoir of the technology know-how and technological human resource which they can tap with confidence.

5. INSTITUTES AS A CONSULTANT IN RESEARCH AND DEVELOPMENT (R&D)

The institute should create the research capabilities directly and in collaboration with industry so that it is sought after as a consultant in R & D in technological problems and to be able to take up sponsored research and supply technological manpower against the demand of the industry and entrepreneurs.

6. TECHNOLOGICAL DATABASE

The University should be a source of information and advice on technology choice by keeping a constant tab on an updated database with adequate knowledge of technology change, innovation, technology transfer, technology adoption and model plans whose technologies have earned recognition and acclaim. It should become a clearing house for all informations on the technological developments taking place in the Country.

*Nothing in life is to be feared. It is only to be understood.

- Marie Curie
The practicing technologist may not find time for the various technological problems particularly those pertaining to efficiency and of economy, automation, innovation, import substitution and maintenance of imported machinery. There may be problems of technology choice. In all such matters, the availability of a broad database at one place with resource persons either available within the institute itself or with the knowledge of the institute itself or with the knowledge of the institute faculty, would go a long way to help even the biggest of the industries. The amount of help it can provide to the small or medium sector is of course, infinite and most invaluable.

7. IN-HOUSE TRAINING PROGRAMS

In order to provide insight into the latest technology strain, the institute should be able to run inhouse or general training programs for technologist employed in the industry and thus help the industry in its efforts for human resource development.

8. INVOLVEMENT OF INSTITUTE RIGHT FROM THE PROJECT APPRAISAL STAGE

The institute should develop the capability to prepare industrial projects on its own as well as on demand from entrepreneurs and should also be in a position to advise the financial and promotional institutions on the project referred by them, to the extent of the technological aspects. Project identification, formulation, appraisal, implementation, monitoring and evaluation are infant fields of knowledge and expertise in India, particularly in the field of industry. In the field of large scale industry this expertise is very scarce and rare. It is the duty of the institute to step into this vacuum and if it does so, it will find that it is not lacking in support from the industry and from entrepreneurs. In fact, financial and industrial promotion institutions would also welcome this role being increasingly taken over by the University.

* What we have to learn to do, we learn by doing

- Aristotle

(6.27)
9. COOPERATION FROM INDUSTRY

The stakes of the clientele in the institute should be such that they should fully cooperate, and liberally offer their time and facilities to the University, be it for teaching or participating in research or curricula formulation or throwing open the doors of the industry to the students, faculty and researchers.

10. INSTITUTE'S SELF-RELIANCE IN FINANCES

The University works towards the ultimate aim of self generating finance, where consultancy, sponsored research and training programs should be able to finance more basic and applied research which alone can be the bed-rock of all the need-based research and consultancy or any other contribution to the industry and industrialization. This is the approach adopted by many institute and institutions in Europe and America as well.

In short, the institute must enter the Country's industrial life and become a part of it and thereby become a partner in progress, and a frontline organization in technology and technological human resource development for the industry, its promoters and entrepreneurs and R & D organizations, as well as the technological trouble shooter for industry. It should also become a conduit between industry and technology experts in various fields in the country and abroad. Though the task is extremely difficult, being an absolute necessity it can be achieved slowly, steadily and with a serious commitment to a well laid-out action plan.

6.3.5.3 PROPOSED ACTION PLAN FOR EFFECTIVE III

The action plan to convert these dimensions and aims into achievements will have to be spread over many phases. The Action Chart for the immediate phases may be as briefly outlined below:-

* The world hates change yet it is the only thing that has brought progress
   - Charless Kittenings

(6.28)
1. Creation of a body to promote and coordinate institute- Industry linkages.

2. Identify suitable persons within the institute to head and share the responsibilities of the above body.

3. Preparing a Job Chart for the above body.

4. Identify and prepare a list of top Executives and Technologists of various industries and “of all sectors of all industries” and working out a system of inviting them to address the faculty and students. This can be done industry-wise.

5. Preparing a comprehensive Directory of Technology Experts (DITEX) in different fields of Technological expertise and know-how and forging continuing links with them through various means of involvement like seminars, talks, lectures, research collaborations, research guidance, sharing consultancy work with them and offering awards, honors, recognitions, Honorary Degrees, Visiting Professorships, positions like Emeritus Professorship, guest faculty positions, etc.

6. Review post-graduate and graduate curricula and reorient these to meet the needs of industry by involving experts from industry in framing the syllabi.

7. Survey of the industry has to be conducted in order to know-
   (a) Processes technology and equipment being used in the industry.
   (b) The areas in which the institute could contribute to industry in matters of research and consultancy and human resource development.
   (c) Technology choices: technology change, technology import, technology innovations, technology transfers etc.

8. Extensive participation of industrial experts in M.Tech. programs of institute and further to make the students take up projects based on the industry working with the experts of industry.

9. Providing for faculty training in industry.

* Politeness is an inexpensive way of making friends. - William Feather
The essence of the Industry-Institute interaction is conceptualized and presented in the following diagram.

**Fig. 6.3 : Model for Industry Institute Interaction**

6.3.5.4 NEED FOR INSTITUTE - INDUSTRY LINKAGE

Institute-industry linkage (III) can promote socio-techno-economic aspects essential for the national prosperity. Therefore III is not only vital in technical and

* There is enough in this world for man's need, but not enough for man's greed.

- M.K. Gandhi

(6.30)
management education but also in general education. The term industry is very broad and it encompasses engineering and non-engineering houses like agriculture, trading, service, banking, hospital and even institutes. These technical and management institutes turn a semi-finished product put to use later on by industry. This needs a thorough analysis and design of the technical and management education so as to produce this semi-finished product effectively, efficiently and economically, with appropriate quality and quality fitting it suitably into industry's work-life and work-culture. This can minimize training and retraining undertaking later on in industrial houses for requisite manpower planning and development. Thus saving nation's valuable time, money and labour. In view of this objective in mind, the status of today's III and it's tomorrow's requirements is depicted below.

6.2.5.5 INSTITUTE - INDUSTRY LINKAGE: TODAY AND TOMORROW

Following table summarizes the status of today's institute- industry linkage (II) and its expectations for meeting tomorrow's challenges.\(^{82,83}\)

Table (6.1): Institute - Industry linkage: Today and Tomorrow.

<table>
<thead>
<tr>
<th>SNo.</th>
<th>Component</th>
<th>Today's III</th>
<th>Tomorrow's III</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Curriculum Development</td>
<td>Industry personnel co-opted on various bodies; like, Board of Studies (BOS) Concerned with Curriculum development.</td>
<td>More active and lively participation by Industry personnel.</td>
</tr>
<tr>
<td>2.</td>
<td>Student's growth</td>
<td>Scantily provision for vocational training and technician training</td>
<td>Industry provides two month vocational training per year for every student.</td>
</tr>
<tr>
<td>3.</td>
<td>Teachers' quality improvement</td>
<td>Limited scope for industrial training. Faculty exchange program almost nonexistent.</td>
<td>Teachers to be deputed at least for two month per year in a phase manner with students' training</td>
</tr>
</tbody>
</table>


(6.31)
<table>
<thead>
<tr>
<th>SNo.</th>
<th>Component</th>
<th>Today's IIL</th>
<th>Tomorrow’s IIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Project and Seminars</td>
<td>Limited scope for industry based projects and seminars.</td>
<td>Majority of students take up industry based projects and seminars under the joint guidance of institute &amp; industry.</td>
</tr>
<tr>
<td>5</td>
<td>Consultancy and testing</td>
<td>Barring a few institutes it is at its lowest ebb.</td>
<td>Shall cater local need as a joint venture of institute and industry</td>
</tr>
<tr>
<td>6</td>
<td>R and D</td>
<td>Non-existent.</td>
<td>Teachers - industry faculty exchange program promoted. Networking of facilities,</td>
</tr>
<tr>
<td>7</td>
<td>Management</td>
<td>Limited participation in IIL.</td>
<td>A Common platform for management, industry and Government shall be evolved.</td>
</tr>
<tr>
<td>8</td>
<td>Training and Placement officer</td>
<td>Limited to activities as campus Interviews vocational training etc.</td>
<td>Training Officer shall as a cutting edge between management and industry Fully involved in student’s personality development.</td>
</tr>
<tr>
<td>9</td>
<td>Guest faculty</td>
<td>Almost non-existent.</td>
<td>A usual feature, Active participation in distance learning.</td>
</tr>
<tr>
<td>10</td>
<td>Technological level.</td>
<td>Presently at University</td>
<td>Promoted at institute level and local participation.</td>
</tr>
<tr>
<td>11</td>
<td>Facilities development</td>
<td>Industry rarely consulted for equipment purchase.</td>
<td>Development of facilities a joint effort of industry and institute. Networking of facilities among institutes and industries can save national resources.</td>
</tr>
<tr>
<td>12</td>
<td>Examination</td>
<td>At times industry personnel involved but at a meager scale.</td>
<td>At least 50% examiners from industries.</td>
</tr>
<tr>
<td>13</td>
<td>Industrial Visits</td>
<td>Frequency is too low. It is normally of general nature.</td>
<td>Specific areas be visited for in-depth study. Visit after theoretical coaching and preceded by a talk in industry.</td>
</tr>
</tbody>
</table>

* All things come to him who can wait.
<table>
<thead>
<tr>
<th>SNo.</th>
<th>Component</th>
<th>Today’s IIL</th>
<th>Tomorrow’s IIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>Faculty exchange</td>
<td>Almost non-existent</td>
<td>Teachers deputed for factory assignment for 3-6 months in a span of 2 years and industrial personnel to teaching assignment in institutes.</td>
</tr>
<tr>
<td>17.</td>
<td>Industry</td>
<td>Plays limited part in promoting IIL</td>
<td>To be more competitive internationally, industry joints hands with institutes</td>
</tr>
<tr>
<td>18.</td>
<td>Audio-visual aids</td>
<td>Recently being introduced</td>
<td>A prominent feature. Aids development as a joint venture of industry - institute.</td>
</tr>
<tr>
<td>19.</td>
<td>Awards</td>
<td>No such awards for Promoting IIL</td>
<td>Shall be instituted for institute industry personnel.</td>
</tr>
<tr>
<td>20.</td>
<td>Periodicals and Newsletters</td>
<td>Non-existing for III.</td>
<td>Bodies like ISTE, AICTE to edit periodicals dedicated to III.</td>
</tr>
<tr>
<td>21.</td>
<td>Sandwich Courses</td>
<td>A few courses exist.</td>
<td>Industry shall adopt institutes and run such courses.</td>
</tr>
<tr>
<td>22.</td>
<td>National service</td>
<td>Non-existent.</td>
<td>Every student needs to dedicate one year to the nation and it shall be a prerequisite for his career.</td>
</tr>
</tbody>
</table>

6.3.5.6 SMALL ENTERPRISES PRODUCTIVITY IMPROVEMENT THROUGH INDUSTRY INSTITUTE PARTNERSHIP APPROACH

6.3.5.6.1 SMALL SCALE INDUSTRIES SECTOR:

A small scale industrialist usually working single handed though technically qualified has the basic limitation that his development problems such as keeping abreast

* The sharp intellect is a better weapon than the rough tongue.

-Graville Janner
of progress of manufacturing technology related to his products, selecting proper machines trying out new jigs and fixtures and so on to increase the productivity gets neglected. With this shortcoming a small industry gradually grows in size by number of people and not by productivity standard.

6.3.5.6.2. PROBLEMS IN WORKING OF SMALL ENTERPRISES:

SSIs suffer many disadvantages as summarized below from productivity point of view:

a) Technology and equipments are often outdated.

b) Labour productivity is usually low in the absence of not so well established standards of assessment.

c) Severe shortage of skilled and trained technical personnel.

d) Facilities for training are grossly inadequate. Immediate profit is valued more than long term gains and there is a tendency to neglect long term objectives under the pressure of immediate tasks.

6.3.5.6.3. HOW TO MEET THESE CHALLENGES

The major changes expected in the industrial and business environment are shown in the table below:

Table (6.2) - Expected changes in the industrial and business environment

<table>
<thead>
<tr>
<th>Major changes in Business Environment</th>
<th>Competence Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing Competition</td>
<td>- New Management technique</td>
</tr>
<tr>
<td></td>
<td>- Learning new success factors</td>
</tr>
<tr>
<td>Last Developing Technics</td>
<td>- Higher knowledge base</td>
</tr>
<tr>
<td></td>
<td>- Need for technical competence</td>
</tr>
<tr>
<td></td>
<td>- Need for continuous updating</td>
</tr>
</tbody>
</table>

* Creativity is the act of making the familiar strange.
<table>
<thead>
<tr>
<th>Major changes in Business Environment</th>
<th>Competence Needed</th>
</tr>
</thead>
</table>
| New Patterns of work                 | - Higher competence needs  
                                      | - More individual responsibility  
                                      | - Professional / expert skills  
                                      | - Need for broader skills |
| Internationalization                 | - Need for communication/interpersonal skills |
| Aging Workforce                      | - Diversification, Motivation  
                                      | - Management and Leadership |
| New Values                           | - Recognition of changes  
                                      | - Career growth  
                                      | - More mobility |

To meet the new demands of the market, the industries have to meet critical requirements of quality, cost and delivery. Thus, it is necessary to concentrate on effectiveness and excellence of the manufacturing process towards the production of a quality product. Survival of the industry is possible only for those organizations which have achieved both quality and productivity.

6.3.5.6.4. ROLE OF TECHNICAL INSTITUTIONS:

It is realized that engineering institutions offer the best resources by which SSIs can further carry out their productivity improvement activities and continue to grow. In Indian society, high expenditure on technical education can be justified only if it is related to productivity. Undoubtedly, closer bonds between institutions and industries become essential for fostering and developing an environment wherein both work with mutual good will and trust for healthy industrial development. Much greater cooperation and interaction is needed than what is existing today.

* Productivity has only a beginning and no end. It will be a doom's day for the human progress if it reaches its dead-end.

(6.35)
6.4 GUIDELINES FOR FUTURE RESEARCH

This study is just state forward towards understanding status of technical education and problems of technical graduates especially related with employment and quality of technical education. The study also throws light on various allied aspects such as industry institute interaction, quality improvement of technical education, evaluation of existing policies as well as industrial labour market response to technical education. However the study is just the beginning of many other similar even different research program that can be undertaken in this field. The researcher here has just made an attempt to provide a few guidelines for further study-

1) A complete and independent inquiry can be undertaken regarding problems and potentialities of industry institute interaction.

2) A study can be undertaken to evaluate the variations in the policies of Government regarding technical education and it’s input on quality standards as well as deployment of technical graduates.

3) A detailed inquiry is possible regarding upgradation of quality standards of technical education by introducing various reforms in course pattern made of evaluation and certification

3) Another possible area of research in upgrading the standard of technical education by making it close to industry and user needs.

6.5 EPILOGUE

The process of the research in the true sense is never completed. It is a continuous activity to upgrade facts, findings and foundations. Naturally this research is also begun to understand various problems related with technical education, manpower and development. In this research, researcher has evaluated present status of technical education, quality and standard of technical education as well as labour market prospects for technical graduates.

* If you have the determination, resources would follow.
The salient observations of the study indicates that existing status of technical education needs to be updated in the light of rapidly changing technical and industrial policy. The standardization of technical education is the basis on which self reliant industrial development is possible. The core competence in the field of the technology is nothing but highly advanced and competitive technical knowledge. From this point of view it becomes extremely essential that an attempt be made to improve quality of technical education as well as maintain a uniform and highly sophisticated technical education policy, continuous technical education be made essential for the technocrats working at various facets as the future world belongs to knowledge worker only. Similarly emphasis be given on introducing quality standard for technical education and at the same time a policy of upgrading core level competence be given priority. It is most essential that Industry Institute Interaction should be given top priority without which further advancement of employment is not possible. There is a great irony that when large number of technical graduate are remain unemployed some industries are not getting competent and appropriate technical graduates. This anomaly can not be removed without proper industry institute interaction. The researcher is of the opinion that three point formula has to be implemented immediately for developing right policy to absorb technical graduate in the labour market. These three point are - Improving quality of technical education, upgrading the standard of technical education and encouraging continuous on the job learning for skill improvement as well as encouraging industry institute interaction.

* Mutual respect and cooperation is a product of equal power.