Role of Quality Education on Quality of Products and Services: Indian Context.

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Quality: Conformance to Customers requirements.
It should lead to customer delight by delivering great customer experience.

TQM: A process that creates a culture of total continuous Improvement (TCI)

Total: Involving everyone

Continuous: For ever.

Improvement: Elimination of waste
Reduction of variability.
Innovation in processes to deliver cheaper, better, safer, faster products and services.

Obviously; we require total quality people before we deliver total quality for customer delight.

Hence in India; we need to first improve the quality of people before we could improve the quality of products and services.

For service quality it is all the more critical to have good quality service minded people who come in direct contact with the customer.

Quality of Education shapes the quality of people to make them good human beings in addition to being knowledgeable and skilled.

Employability can be considered as a measure of quality of education of a person in a given area of work. Thus people with high degree of employability will deliver high quality of products and services.

$$E = A[\propto. k + (1 - \propto)S]$$

Where E= Employability

k= knowledge

S= skill

$\propto$= Relative weight to knowledge over skill which depends upon the nature and level of employment.

Employability of a person is greatly affected by attitude. Even a highly knowledgeable and skilled person with poor or negative attitude cannot deliver great quality of service or deliver customer delight. Employability is imparted through quality education. Thus a strong correction exists between quality of education in the country and the brand image of the quality of its products and services. Hence. "journey of quality begins with education and ends with education".

In TQM philosophy the 'involvement of all employees; customer orientation; leadership and service quality are intimately linked with quality of people and hence quality of products and services are impacted by quality of education and training.

Current Quality status of Indian education

The quality of education in all the links of the academic supply chain in India is and has been a cause for concern. Quality of primary, secondary and tertiary education has been a topic of debate for quite sometime. Almost at all levels; it is plagued by shortage of financial and other resources, quality and commitment of teachers and the academic leadership. With poor base of primary and secondary education; higher education quality cannot be nurtured.

Gross Enrolment Ratios of about 25% and 20-25% employability of our graduates even in engineering and management reveal the dismal quality and numbers in the higher education segment. "Collapse of education is the collapse of the nation". Hence to be globally competitive India should give highest attention to quality of education throughout the academic supply chain.

Developing attitudes for customer orientation

Customer orientation is a pre-requisite to quality. Attitude towards customer plays vital role to that end.

Mahatma Gandhi's views on customer:

"A customer is the most important visitor to our premises. He is not dependent on us, we are dependent on him. He is not an interruption in our work; he is the purpose of it. He is not external to our business but a part of it. We are not doing him a favor by serving him; he is doing so by giving us an opportunity to serve him".

Customer orientation is facilitated by a balanced value grid.

	Low — Concern for self → High	
High Concern for others	Sacrificing nature service attitude	Balanced concern
Low	Unconcerned	Self-centered
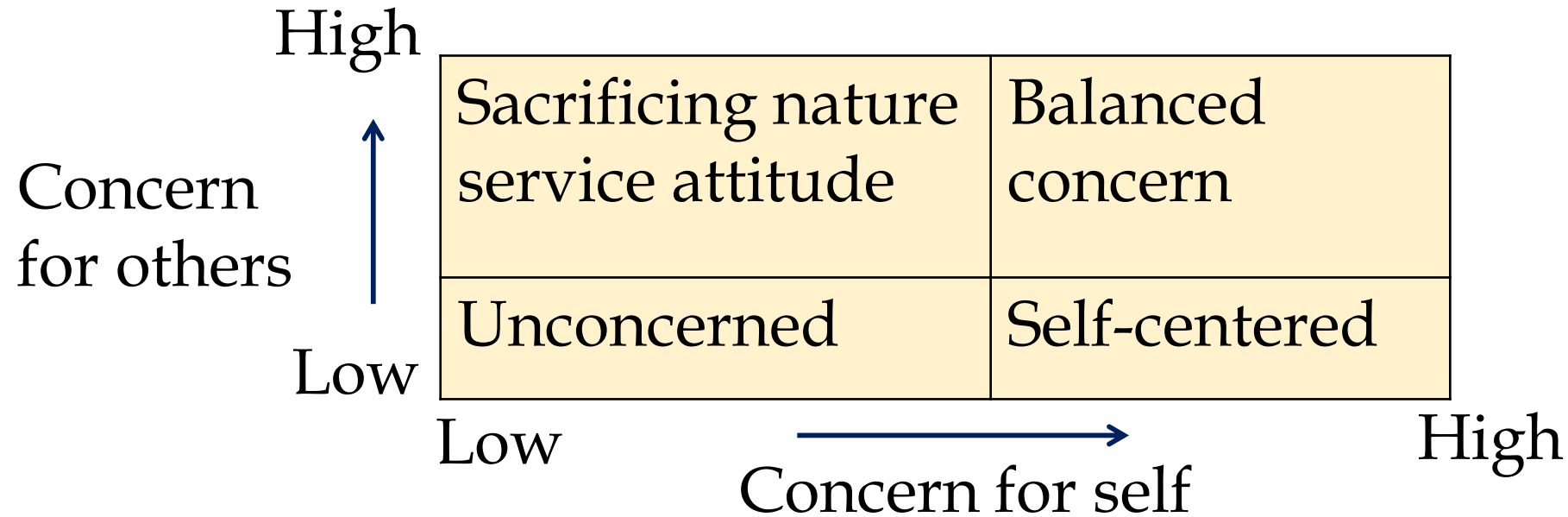
We need to inculcate a service attitude and hence high concern for others over self before he gets customer oriented is vital and education plays a great role in shaping the attitude.

Quality issues in technical education

Quality of products and services are more significantly impacted by the quality of technical education.

Since privatization of technical education; the capacity to enroll students has increased exponentially. This has increased the quantity of technical and managerial manpower but in the process of rapid expansion the quality of education has taken a back seat. The situation currently is quite alarming because the brand of engineering and management education has lost its image.

Technology is crucial for productivity and quality in products and services and with poor quality of technical education, India can not become globally competitive.

There are very few institutes of technical education which are perceived to give quality education the country. About 80% of them; mainly in private sector; are a cause for serious concern various forms of imbalances have crept in; faculty quality is alarmingly low and even academic leadership is not inspiring.

Imperatives ..

- World of accelerating multi-dimensional change
- Shift to knowledge economy
- World without border
- Revolutions in Information & Communication Technology (ICT)

Engineering Education System MUST translate these challenges through a Quality response

Typical defects

- delays in evaluation and preparation of results
- unbalanced structure of examination
- behavior of the teacher within and outside the classroom;
- teacher's inability to understand student psychology and learning curve;
- inefficient administrative processes leading to mistakes in student admission, registration, record keeping, collection of fees, generation of results etc.
- inefficient laboratory management;
- inadequate maintenance of building and infrastructure

Our Quality Program isn't working

- Lack of shared Mental model of quality in the organization
- Lack of shared values and vision
- Compliance rather than commitment
- Steel-reinforced concrete silos !
- Non-systemic approach to implementation
- Senior administrators with incomplete transformational leadership skills
- Inability to learn collectively

Cause 1: Lack of shared mental model

Five mental models of Quality

- Status quo
- Quality control
- Customer service
- Process improvement
- Total quality

Cause 2: Lack of shared values/vision

- Outside world wants us to run our quality program
- Everybody needs to talk quality
- Service orientation
- Process improvement

Cause 3: Compliance rather than commitment

- Get on the quality train
- Performance measurement- on a variety of parameters
- Team formation-for improvement in all quarters

Cause 4: Steel-reinforced silos

- Rather than a seamless organization, functional boundaries are sacrosanct !
- Electrical Engg Deptt NOT talking to Mechanical Deptt and vice-versa
- Faculty-Staff relations
- Engg vs Science vs Humanities vs Management?

Cause 5: Non-systematic approach to implementation

- Improvement in one area create chaos in other
- ad-hocism
- Social costs of change – or not change ?
- Role of senior administrators

Cause 6: Inability to learn collectively

- Perception
- Making meaning
- Turning meaning into effective action
- Lack of transformative and leadership skills

How does TQM translate to Education?

- Role of Students: Administrators need to involve students in their own education by training them to question the learning process, and once the students have questioned it, administrators need to seriously consider student proposals for change (Olson 1992).

- Role of Teachers: TQM calls for changes in teachers' relationships with both students and administrators; teachers need to view engineering education through students' eyes, and they need to work with administrators as a team. This teamwork is largely the responsibility of administrators, who need to delegate some of their responsibility and power to teachers (Rhodes 1992).

- Testing and Evaluation: Instead of using standardized tests and grades to measure students' progress, schools that embrace TQM often try to assess student progress regularly throughout years (Blankstein).

Purpose of Education

- Enable students to:
  - Think logically, analytically, critically and laterally
  - Realize one's potential for self-development
  - Acquire a discriminatory capability to appreciate and imbibe the emerging value sof our times
  - Contribute to development of society and nation at large

Pre-requisites for Quality

In order to be able to impart quality education , our education system has

to have the following

- Quality Syllabus
- Quality Faculty
- Quality Teaching & Evaluation
- Quality Research
- Quality Infrastructure
- Quality Character

Pre-requisites
for Quality

Quality Syllabus

- Regular updating and up-gradation
- Balance of theoretical and empirical/experimental thrust
- Credibility of content
- Interdisciplinary orientation
- Sensitivity to emerging scenario
- Relevance

Quality Faculty

- Academic and Research eminence
- Competence
- Reflective character of teaching

Pre-requisites
for Quality

Quality Teaching & Evaluation

Teacher-student ratio

- Modes of teaching
- Interactive and participatory character
- Innovative teaching methods
- Regularity of classes
- Use of student feedback
- Affectivity in student-teacher relationship
- Regular and continuous assessment
- Fair, Objective , and Transparent evaluation

Quality Research

- Evidence of breaking grounds
- Peer recognition
- Publications, Patents, Transfer of Technical know how
- Generating a new paradigm shift
- Awards and Recognitions

Pre-requisites for Quality

Quality Character
- Value system (sensibilities, integrity etc.)
- Doing relevant engineering !
- Education system as an instrument of change for improving quality of life

- Quality Infrastructure
- Classrooms
- Labs
- Computers and networking
- Library

Prerequisites for quality work

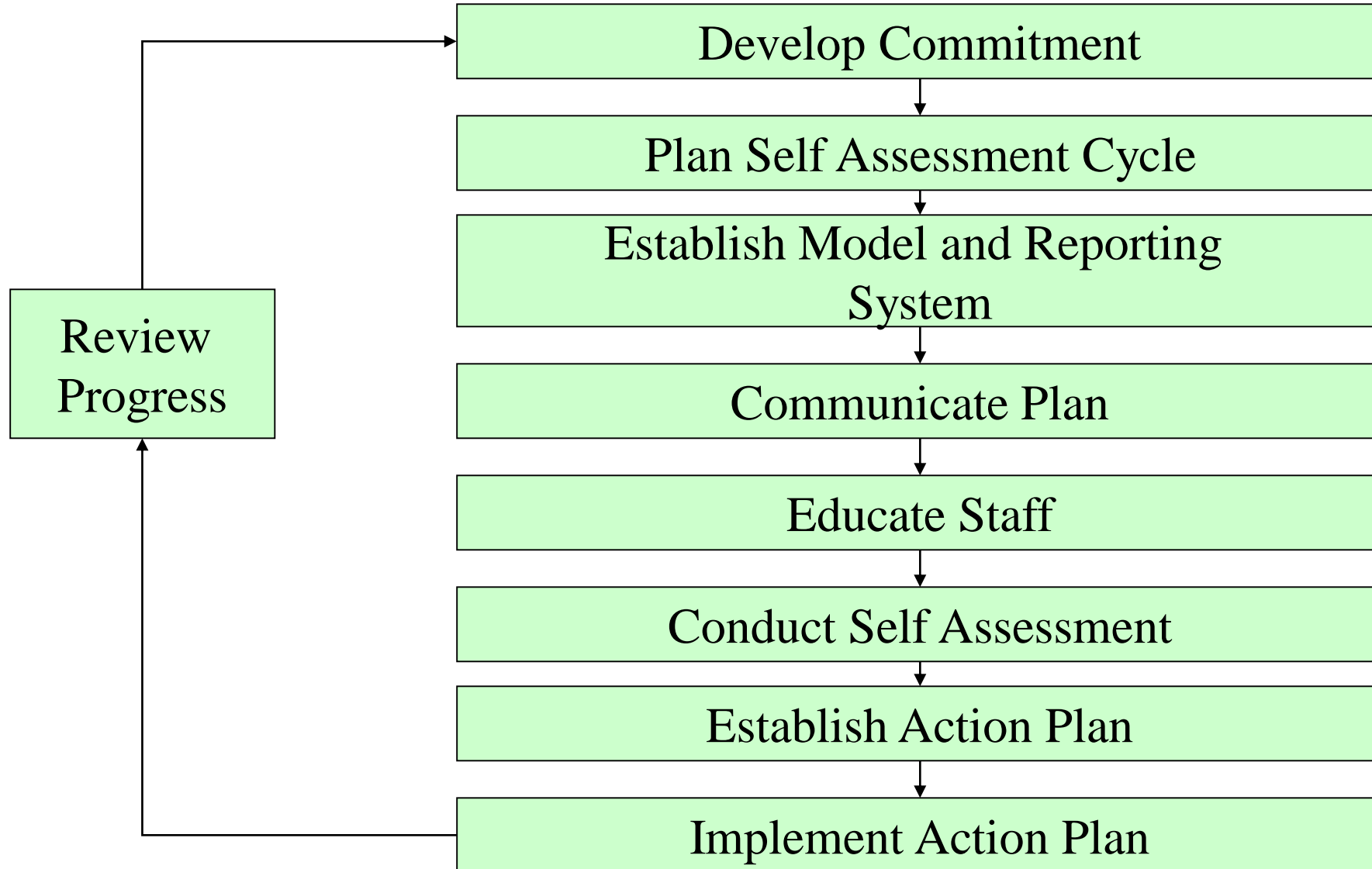There must be a warm, supportive learning environment

Students should be encouraged to do only useful work

Students should be facilitated to do the best they can do

Students should be asked to evaluate their own work and improve it.

Quality work should always feel good and should never be destructive

Award Model –
Self Assessment Process

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              ┌────→│      Develop Commitment          │
              │     └─────────────────┬───────────────┘
              │                       ↓
              │     ┌─────────────────────────────────┐
              │     │    Plan Self Assessment Cycle    │
              │     └─────────────────┬───────────────┘
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              │     ┌─────────────────────────────────┐
              │     │  Establish Model and Reporting   │
              │     │             System               │
              │     └─────────────────┬───────────────┘
              │                       ↓
  ┌───────────┴──┐  ┌─────────────────────────────────┐
  │   Review     │  │       Communicate Plan           │
  │   Progress   │  └─────────────────┬───────────────┘
  └───────────┬──┘                    ↓
              │     ┌─────────────────────────────────┐
              │     │          Educate Staff           │
              │     └─────────────────┬───────────────┘
              │                       ↓
              │     ┌─────────────────────────────────┐
              │     │     Conduct Self Assessment      │
              │     └─────────────────┬───────────────┘
              │                       ↓
              │     ┌─────────────────────────────────┐
              │     │      Establish Action Plan       │
              │     └─────────────────┬───────────────┘
              │                       ↓
              │     ┌─────────────────────────────────┐
              └─────│      Implement Action Plan       │
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Case study
UPTU Academic Excellence Award
Model

Enablers	Item	Weightage (in %)
	Top Management's commitment to Quality & Academic Leadership	10
	Faculty Resources Development & Management	5
	Quality Policy & Strategy	5
	Academic Resources	10
	Academic Processes	10
Results	Faculty & Staff satisfaction	10
	Students satisfaction	10
	Impact on Society	5
	Academic Results	25
	Placement Results	10

UPTU Academic Excellence Award Model
Source: *www.uptu.org*

Faculty Resources Developmt & Mgt.
50 (5 %)

Top Mgmt Commitmt & Leadership 100 (10 %)

Quality Policy & Strategy 50 (5 %)

Academic Processes 100 (10 %)

Academic Resources 100 (10 %)

Faculty & Staff Satisfaction 100 (10 %)

Students Satisfaction 100 (10 %)

Impact on Society 50 (5 %)

Academic Results 250 (25 %)

Placement Results 100 (10 %)

Enablers 400 points (40%)

Results 600 points (60%)
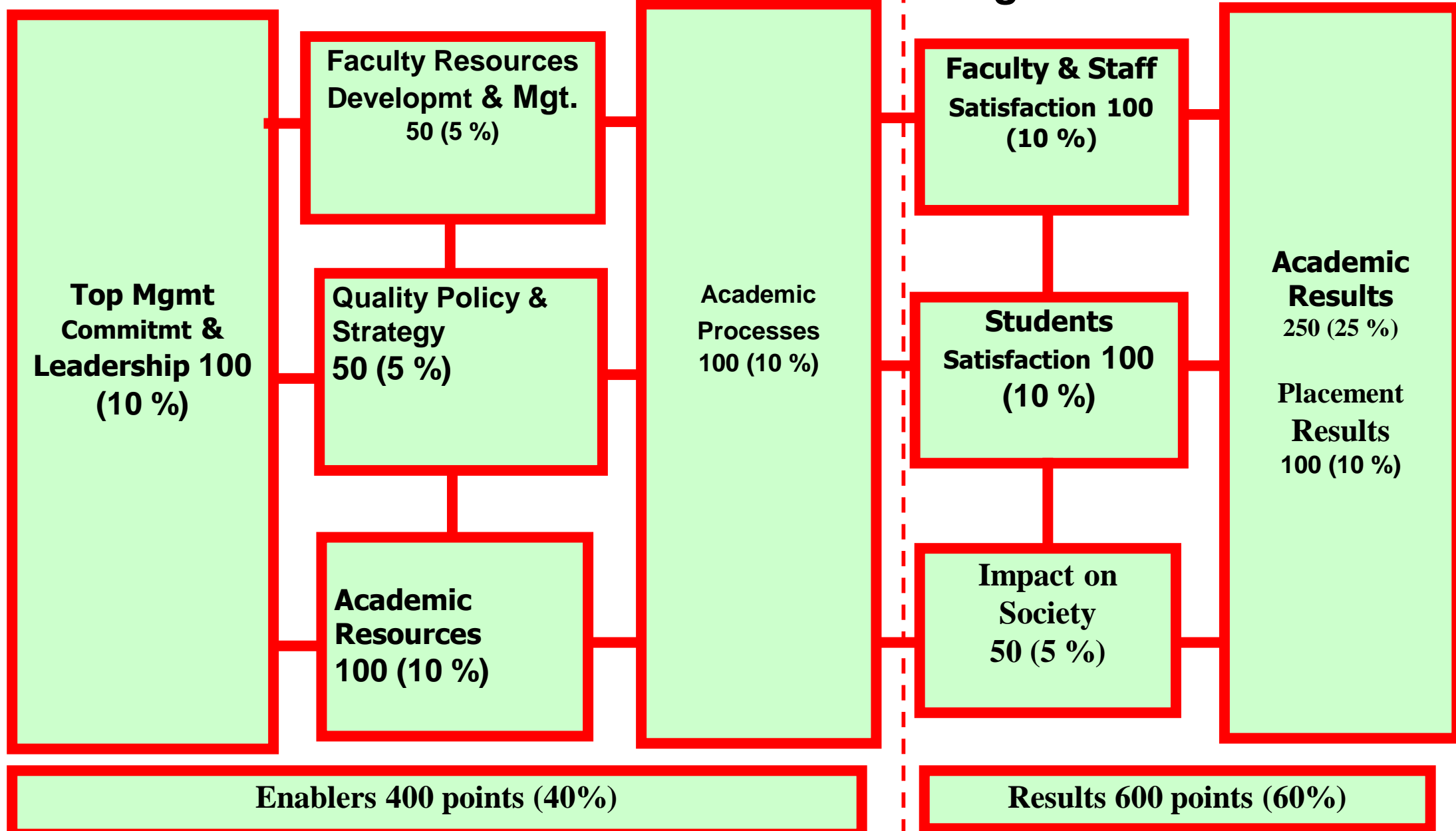
Sl. No.	Sub factors	High 05	Very Good 04	Good 03	Satisfactory 02	Low 01
1.	**Quality policy on student admissions**					
2.	**Quality policy on faculty recruitment process**					
3.	**Quality policy on faculty promotion/recognition process**					
4.	**Student orientation**					
5.	**Industry (employer) orientation**					
6.	**Quality of physical ambience**					
7.	**Quality improvement policy for faculty & staff**					
8.	**Vision / Mission leading to quality**					
9.	**Core values leading to quality of education**					
10.	**Quality Management Systems-ISO etc in place**					

Quality Policy & Strategy (50)

SN	Sub factors	High 05	Very Good 04	Good 03	Satisfactory 02	Low 01
1.	**Recruitment process leading to excellence**					
2.	**Financial compensation package/process**					
3.	**Perks and performance incentives**					
4.	**People development process-encouragement to improve qualifications**					
5.	**Work culture**	**Faculty Development & Management** (50)				
6.	**Faculty & Staff performance appraisal process**					
7.	**Networking with reputed academic institutions-encouragement & support**					
8.	**Ambience in offices of faculty & staff**					
9.	**Encouragement for industry interaction**					
10.	**Skill-up gradation / conference Sponsorship and peer interaction**					

Academic Results : Directly on % of Average Gross Intellectual Attainment per student (250)

Exceptional : 90-100%		Satisfactory : 40-50%	
Outstanding : 80-90%		Marginal : 30-40%	
Excellent : 70-80%		Low : 20-30%	
Very Good : 60-70%		Very Low : 10-20%	
Good : 50-60%		Unacceptable : 0-10%	

Placement Results :
Directly on % of campus placement moderated by a factor given by "Average salary level / Industry average salary"(100)

Exceptional : **90-100%**		**Satisfactory :** **40-50%**	
Outstanding : **80-90%**		**Marginal :** **30-40%**	
Excellent : **70-80%**		**Low :** **20-30%**	
Very Good : **60-70%**		**Very Low :** **10-20%**	
Good : **50-60%**		**Unacceptable :** **0-10%**	

Transforming Educational Institutions into Learning Organizations

- Develop a culture of shared vision

  (amongst students, teachers and staff)

- Do not overemphasize competition, promote cooperation , faculty-staff to join together

- Have a culture of pro-activeness and not of reactiveness

- Faculty, students and administration think of all educational processes , activities, functions, and interactions with the environment as part of a system of inter-relationships

How to implement Quality Involvement

- **Quality involves everyone**   Quality not just concern of AICTE /MHRD or College administration - involves everyone, including student, teacher, alumni, financial supporters
- **Continuous improvement**   System always looking for ways to improve processes to help quality
- **Stakeholders involvement :**Every stakeholder has vital role to play in spotting improvement opportunities for quality and identifying quality problems

Concluding Remarks..

- The current state of TQM is perhaps best summed up by Schmoker:
  - Some "has been written about [it];
  - little of it has been absorbed, believed, and implemented in colleges or businesses."
    This might be explained by the fact that systematic change requires time, but it might also be an indication the quality movement is not achieving its vision.
- It is doubtful that interest in TQM will simply fade away, especially since TQM in education has received support from both business and government. In addition, national award programs for quality have incorporated their application processes to educators
- With this type of interest and support, the educational quality movement likely to generate continuing interest.
- TQM may not hold all the answers for an ailing educational system, but it does shed some new light on educational management.

Essence of Learning Organization

- New skills and capabilities
- New awareness and sensibilities
- New attitudes and beliefs

- ***Learning organization has continuous capacity to adapt and change***
- **Engineering Institutes must develop this capacity**