

13th D L Shah Memorial Lecture

13TH D.L.SHAH MEMORIAL LECTURE

IMPROVEMENT IN QUALITY OF PROFESSIONAL EDUCATION



"INDUSTRY NEEDS & EXPECTATIONS"

Mr. R. Mukundan,
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CONTEXT

External landscape of the environment we encounter is changing dramatically and fast. Broadly there are 3 forces which are impacting us viz. **Sustainability, Digitalization and Equity & Inclusion**. These three forces are at the heart of change and are forcing institutions to adapt and transform. COVID has accelerated these trends even more. A few issues will give us a granular feel of the context:

1. **Business Model Disruptions** - There are disruptive changes to business operating models which impact job creation, labour productivity and skills gap.
2. **Service Explosion** - There is an explosion of service element in every business. There is a shift from "pay for product" to "pay for service by use." e.g., Vehicle ownership is being transformed by taxi hailing apps that make travel without ownership of vehicles easy. Spraying services in farmlands where an individual farmer must no longer buy product and equipment but just use spraying services. Take any industry and I think this "**servitisation**" of business is a trend that will continue and will expand in future.
3. **Innovative Technologies** - What is aiding this change is innovative technologies such as IoT, cloud computing, AI, ML, robotics, nano technology, 3D printing, genetic biotechnology, metaverse, etc. These are not only creating opportunities but also creating barriers to those without relevance.
4. **Workplace Innovations** - Innovations such as remote working, coworking spaces are leading to a small pool of core full time employees. They are all supported by a large pool of people who are called "**work nomads**" who offer their most current skills to multiple employers.
5. **Climate Change** - Natural resource constraints is rapidly shifting business to clean and green economy goals. Hence, jobs will be created in **green economy** and jobs will be destroyed in the grey economy. Instead of fighting this trend, we need to skill our employees to work in the green economy rather than the grey economy.
6. **Career Aspirations** - Today's workforce is displaying a change in career aspirations. There is more focus on life. There is no longer a question of work life balance. It is life first and work later!
7. **Women Workforce** - Another positive trend is the rise of women workforce. India will see more women graduates than men graduates very soon. Hence, we need to create workspaces that are gender-equal, safe, and friendly.

Hence, we must fear that if we do not impart the relevant skills, we may be creating a new class called "**skill refugees**" - *people who are not able to cross and live a normal work life*. And this will become a norm if we do not train or retrain are workforce better.

With these changes happening, it is imperative that industry should change and transform itself, and rise to the expectations of the society.

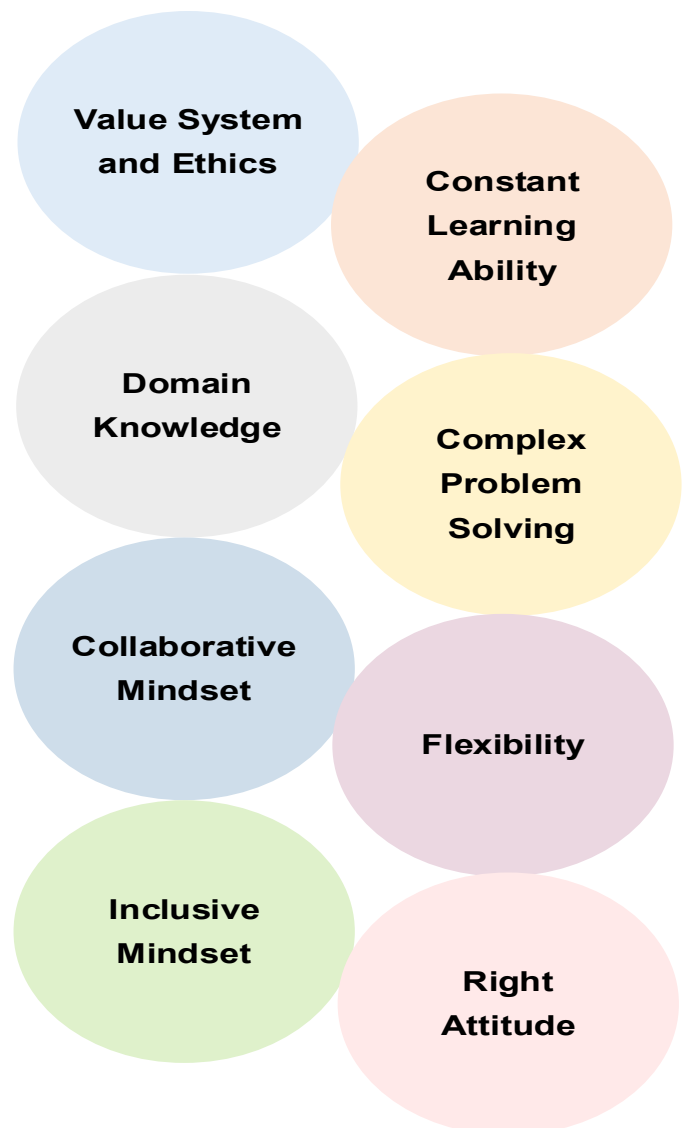
INDUSTRY EXPECTATIONS

- **Value System and Ethics** - One of the key expectations from industry is the inculcation of right value system and a sense of ethics, and an ability to **manage ethical dilemma** in our talent and workforce. We live in an open world where information can flow at lightning speed and institutions need individuals who are guided by their inner conscience. ***This is because values drive purpose and future of sustainable organizations is purpose driven organization.***
- **Constant Learning Ability** - To cope with rapid external changes we need employees who are constant learners. This learning ability will be the cornerstone of employability in future because, as new skills come to the fore, we need people who can learn these new skills and become experts.
- **Domain Knowledge** - Every individual needs to be an expert in at least one domain area. Domain knowledge is knowledge in practice, application oriented, innovative, new, current, and beyond textbooks and theory. Theory, of course, is the foundation of domain knowledge but what is more important is application and practice.
- **Complex Problem Solving** - World is now more complex than ever. Hence, cross functional skills and ability to solve complex problems is now more critical. To solve complex problems, we need to inculcate appreciation for interconnectedness and multi-dimensional nature of problems.
- **Collaborative Mindset** - Collaborative mindset is the ability to work in teams. The days of star employees are over. These are the days of collaborative teams which function well. That effectively means that

cultural fit is extremely important, and so is commitment and willingness to work across boundaries i.e., functions, expertise, locations, geographies etc.

- **Flexibility** - A person will have to be flexible to handle multiple careers - careers would be changing every 5 to 6 years.
- **Inclusive Mindset** – All of the above need to be coupled with a very inclusive mindset that respects diversity (including gender diversity) at workplace.

INDUSTRY EXPECTATIONS



- **Right Attitude** - Right attitude is important. The “will do” and “can do” spirit is important. Hence, we need to strike the balance in “**doing**” skills and “**being**” skills. “Being” skills are the soft skills which we mostly ignore, especially in technical education. However, real solutions to problems come through both “doing” and “being” skills.

WHAT TATA CHEMICALS IS DOING

As part of the Tata group, our purpose is very broad. Our purpose is to **improve quality of life**. And our values are driven by the theme **leadership with trust**. We want to lead but we want to do it while earning the trust of our stakeholders.

These are the two pillars on which Tata group has been built and run for the past 175 years, and will continue to be run.

Specifically in each one of these two pillars we have taken steps to build strength within our company:

1. **Diversity** - It is a key part of our culture. We always open doors to youngsters from all parts of the country. We ensure that 50% of our workforce being recruited are women. We are working with government to get more aspects of the chemical industry open to women. In doing so, we have sensitised our Senior and Middle management to be sensitive to them, and create a more conducive and welcoming workplace.
2. **Value Skills** - Our youngsters are taken through the “Value Start” module. There are ten functional skills which we impart here because we think that these are not being emphasised in technical education:
 - Displaying professional and smart personality
 - Managing self and diversity
 - How to manage time and stress

- Awareness of business, customer and competition
- Financial acumen
- Data analytics
- Stakeholder management
- Design thinking for problem solving
- Creativity and self-motivation
- Art and science of persuasion.

These are part of our year-long induction program (ARAMBH). This helps them become responsible citizens and long-term employees.

3. **Experiential Learning** - In addition, we have lots of experience sharing sessions with technical leaders across industry sectors coupled with experiential learning projects.
4. **Storytelling** - Storytelling is used to make employees aware of our company and our values because through stories we can build value system within our new employees.
5. **Meta Competencies** - We focus on meta competencies through plant rotations across functions in the first year along with safety and live CSR projects. These CSR projects are evaluated by senior leadership and form the basis for final absorption.
6. **Leadership Connects** - In addition, there are leadership connects between senior leaders and new joiners.

Overall, our approach has been to equip our incoming talent, who is well grounded in technical education, with softer skills.

In conclusion, I want to say that every skill is learnable but what we need to inculcate early on is the value system, sense of purpose, and how we will conduct our business and ourselves.

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"INITIATIVES BY AICTE"
Prof. Anil D. Sahasrabudhe,
Chairman, All India Council for
Technical Education

All India Council for Technical Education (AICTE) is primarily a regulatory body for technical education in India. However, in recent times, AICTE has changed its role to be less of a regulator and more of a facilitator. AICTE is a light regulator but where necessary it can be a tight regulator. In the past 4-5 years, here are some of the initiatives undertaken by AICTE.

Industry feedback has been that graduates are not "industry ready". We discussed this issue with Industry and came out with a Quality Agenda for Technical Education in 2017. I am proud to say that we have already implemented 99% of the agenda. This is also reflected in the New Education Policy and acknowledged by the Government of India.

The Quality Agenda comprised the following ten themes:

1. **Revision of Curriculum** – We constituted a committee comprising industry experts and academic experts from the best institutions in the country. A significant feature of the curriculum is the flexibility provided to Universities and Institutions to make changes to the curriculum based on local needs and local industry requirements. Another initiative is the reduction in credits for classroom to encourage students to undertake projects, internships, etc.

2. **Internships** – Internships have now been made mandatory by allocating credits for the same. The biggest challenge for AICTE was how to arrange internships for all students. To resolve this, we connected with industries, industry bodies and institutions. Every institution recognized by AICTE was mandated to have an industry representative on their board. This has resulted in a good bonding between industry and institutions, and also addressed the challenge of securing internships for students.

3. **Induction program** – Students come from diverse backgrounds to institutions and face multiple challenges such as language, environment, etc. We have created a 3-week induction program to address these challenges. The program comprises scientifically curated activities where new students get the opportunity to interact with their peers, colleagues, etc. and share their feelings and concerns. Peers in turn address these concerns. This program was introduced 3 years ago and one significant outcome has been the substantial reduction in suicide cases amongst new students.

4. **Teachers' Training** – Since the curriculum has been revised and new technologies introduced, it was important to ensure training for teachers in these new areas and technologies, especially for faculty in remote

areas who have limited or no exposure to new technologies like IoT, AI, Robotics, etc. In collaboration with IITs, NITs and other reputed institutions, we have started faculty development programs to train faculty in these thrust areas. The challenge in front of us was the huge number of faculty to be trained. However, the pandemic gave us the opportunity to achieve this through online mode of training. Industry was also an active partner in these faculty development programs. In the past 2 years, AICTE has managed to train over 4 lakh faculty members. This achievement has been recognized by the World Book Records.

5. Perspective Plan for Technical Education

– There existed no perspective plan for technical education previously. So, we constituted a committee headed by Dr. B V Mohan Reddy, Chairman, IIT Hyderabad. It had representatives from all industry bodies. The two major recommendations of this committee were:

- No new colleges to be started in the traditional branches of engineering (Electrical, Mechanical) because 45% seats in these branches are lying vacant.
- New institutions to be allowed by AICTE only in the thrust areas i.e. identified future technologies.

6. **Improving Diversity** – AICTE is promoting technical education for girls by providing fellowships where household incomes are lower than Rs 8 lakhs p.a. Fellowship of Rs. 50,000 p.a. is provided to eligible girl students based only on household income proof. In addition, all Divyangs (Handicapped) students are provided scholarships of Rs. 50,000 p.a.

7. **Skill Courses** – Infrastructure is being created within institutions to provide skill courses after regular teaching hours or weekends through AICTE's KARMA scheme. These skill courses are certified by Skill India as well.

8. **Promoting Research** – AICTE is helping faculty by providing research grants and financial assistance to institutions for modernising laboratories to promote research.

9. **Idea Labs** – Idea Labs are being promoted within institutions. This is an extension of the *ATAL Tinkering Labs* program. As a pilot, these Idea Labs have been started in 15 institutions across the country. Total expenditure incurred excluding land and building is about Rs 1 crore with 50% being provided by AICTE and the remaining 50% sourced through industry grants. Faculty members are being trained how to run these Idea Labs. These labs are open 24x7 and students from nearby institutions are also encouraged to work in these labs.

10. **Extracurricular Development** – AICTE is supporting activities that promote extracurricular development by supporting various clubs (Tree clubs, Sociology clubs, etc.) within institutions. Grants are directly provided to students to promote extracurricular activities such as study tours within India and overseas, conferences, seminars, etc.

Mr. Kumar concluded by thanking the organisers and solicited their suggestions on additional initiatives to improve quality of professional education in India.

(This lecture was delivered by Mr. Rajiv Kumar, Member Secretary, AICTE on behalf of Prof. Sahasrabudhe)

13th D L Shah Memorial Lecture Snapshots



NCQM Trustee, Mr. Maheshbhai Gandhi delivering the welcome address



Trustee, Mr. Hari Taneja informing about D L Trust and its activities



Mr. Rajiv Kumar delivering the 13th D L Shah Memorial Lecture on behalf of Prof. Sahasrabudhe



Mr R Mukundan delivering the 13th D L Shah Memorial Lecture



NCQM Office Bearers at NCQM office for the virtual 13th D L Shah Memorial lecture