



## The Role of Soft Skills in Technical Education

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### ABSTRACT

*The present global market of technocrats extensively demands an increasing need to equip students with efficient study skills in their education and elemental professional skills prior to their graduation. Today's combative global market and changing work environment demands that engineers possess 'soft skills' in addition to technical skills, and they must be able to steer project goals and have the ability to fulfill them with available resources. Soft skills help to make us understand the world and to create efficiency and possibilities for the future. It is a way of creating intention. These are the skills that draw a line between efficient engineers and merely good ones. The appropriate amount of soft skills not only enhances professional but also social life. This paper throws light on how significant are soft skills like decision-making, problem-solving, leadership, teamwork and adaptability, time management, ethics, morals and professionalism and its relationship to engineering education*

**KEYWORDS :Global Requirement, Employability Skills, Engineer, Soft Skills.**

### INTRODUCTION

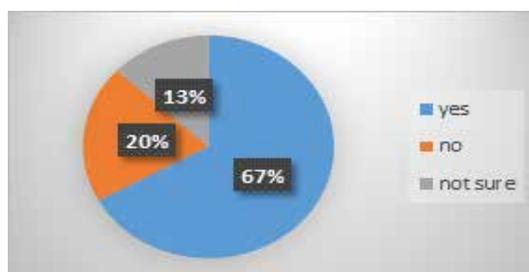
Hard skills are the technical expertise and knowledge needed for a job. Soft skill is a sociological term relating to a person's "EQ" (emotional intelligence quotient) interpersonal qualities, personal attributes, communication skills, problem-solving, decision-making, positive attitude leadership skills, teamwork, time management work ethics. Soft skills complement hard skills which are the professional prerequisites of a job and many other social activities. While technical skills may get your foot in the door, your people skills are what open most of the doors to come.

#### Communication skills:

**"Communication-the human connection- is the key to personal and career success" Paul J. Meyer.**

English has become the globally dominant language. Communication skills are the medium for the professionals to communicate across borders globally. Language and communication skills are recognized as important elements in the education of the modern engineer. Communication skills are an integral component for the one who aspires to carry out his/her professional practice in the global arena. Communication skills increase the effectiveness of internal communication between management and staff in an organization. Communication skills are essential to build a cohesive and effective team. Your soft skill lies in the ability in communicating the thought process clearly to employees across the network so that the task at hand gets completed successfully.

A survey was conducted among engineering students to know whether they need communication skills to be employed.



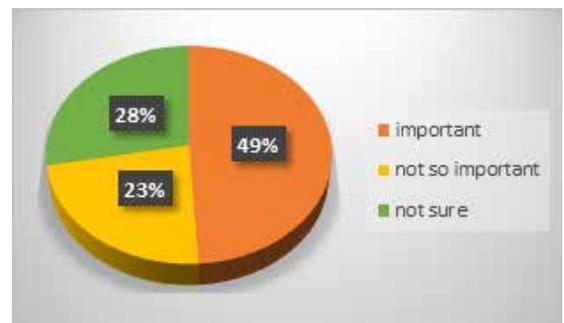
**Fig.1 Students' response when questioned if soft skills were important**

A majority of 67% of students responded in yes. Which indicates how important communication skills for employability are.

#### Self Confidence:

Self-confidence is the belief in your own ability when doing anything, by viewing yourself positively and realistically. The lack of confidence keeps you at the bottom of the corporate pyramid and leads others continuing to rule the top. The foremost principle to improve yourself is to think positively. Self-confidence means that even if things don't go your way, you still believe that eventually, somehow, some way, they will. As goes the saying **"Self Confidence is the foundation of all great success and achievement"** This belief is the key to succeeding in many things we do. Self-confidence drives you to take up challenges confidently and approach new and frightening tasks. Confidence is that boost in our nerves that doesn't draw us back from involving in bigger things with high-risk involvement. Self-confidence is a trait acquired by choosing participation and involvement over hesitation.

A survey to analyze the importance of Self-confidence gave the following data



**Fig.2 Students' response when questioned if self-confidence was important**

#### Problem Solving:

**"Identify your problems but give your power and energy to solutions" Tony Robbins**

Problem-solving is all about using logic as well as imagination to make sense of your situation and come up with an intelligent solution. Problem-solving is a vital skill in a daily life, which is why graduate employers are too keen on it. Solving these problems involves both analytical and creative skills. Whatever issue you are faced with, some steps are fundamental

- Identify the problem
- Define the problem

- Act on an agreed course of action.

Most problem-solving skills are developed through everyday life and experience. Problem-solving skills can be developed by daily practice of

- Mind games, cryptic crosswords, chess, sudoku
- Computer games
- Fixing a computer
- Practical involvement in dealing with a critical customer in a part time job or restaurant
- Managing the budget throughout the hostel life
- Developing a strategy to reach to certain solution

Problem solving enhances the ability to understand and solve complex challenges in professional, personal and social life.

#### Decision Making:

**“A good decision is based on knowledge and not on numbers” -Plato**

We live in a world that assumes that the quality of a decision is directly related to the time and effort that went into making it. Decision-making skill is the most important requirement for the new global engineer. Decisions need to be capable of being implemented, whether on a personal or organizational level.

Steps involved in decision making are

- Clarify the nature of the problem deciding action
- Collect and summarize the data systematically
- Make a short list of best options available
- Make your decision

The decision can be made through either an intuitive or reasoned process. Stay committed to your decisions, but stay flexible in your approach.

#### Leadership Skills:

**“Leadership is action, not position” Donald H. Mc Gannon**

Regardless of the size of the organization whether it's a large corporation or a small company you need good leadership skills.... The ability to lead effectively is to involve dealing with people in such a way as to motivate, enthuse and build respect. The most important skill a leader needs is to be able to think strategically. A leader needs skills in working with others on a one to one and group basis.

Leadership involves

- Taking initiative
- Organizing and motivating others
- Setting objectives
- Persevering when things are not working out
- Having a positive attitude
- Accepting responsibility for mistakes

#### Teamwork:

##### Teamwork

Never underestimate the power of an effective teamwork as today's work scenario increasingly structure work around teams. To quote **“Teamwork divides the task and multiplies the success”** Teamwork necessitates confidence in each other's distinct abilities. Blending theory and practice in areas as team processes and team effectively provide them with a realistic view of how teams function in the actual workplace. The increased pressure on professionals to perform their tasks with fewer employees, at faster speeds and with more quality and customer responsiveness creates the need for teamwork. One can play different roles like **initiator, encourager, and compromiser, summarizer** in a team depending on what is being discussed or done.

#### Benefits of teamwork

- Fosters creativity and learning
- Blends mutual strengths
- Builds trust
- Teaches conflict resolution skills
- Encourages healthy risk taking

#### Time Management:

**“All time management begins with planning” Tom Greening**

As human beings it's inevitable to err, we procrastinate, dither, get distracted or get carried away by small things leaving the big and important things aside. It's undeniable that often you tend to get distracted from the important engagements because of mere petty pleasures. Time demands that you develop effective strategies to manage your time to balance the daily unending chores and the important work demands. Time management is all about setting your priorities, scheduling the things to be done according to the importance they hold. Other skills involved include **prioritizing** - focusing on urgent and important tasks rather than those that are not important or don't move you towards your goals; **organizing** your work schedule; **list making** to remind you of what you need to do when; **persevering** when things are not working out and **avoiding procrastination**.

The other skills which strengthen employability



Fig.3 Other skills which strengthen employability

#### Professional Ethics:

Principal human values are the foundation on which professional ethics are built. People with high moral values are usually held in high esteem, admired, rewarded and looked up to. The most important elements of professional ethics refer to honesty, accountability, integrity, loyalty, trustworthy compliance with the law and more. These constructive attributes create a huge impact on one's personal and professional life. Professionalism is all about success and influence; Ethics at work place hold a high reputation for exhibiting admirable values not only in times of ease but also in difficult times. Potter Stewart rightly said, **“Ethics is knowing the difference between what you have a right to do and what you do.”**

#### Recommendations:

- The technical curriculum should formulate effective training sessions in this realm by taking the inputs from the industry.
- Workshops in the area of soft skills should be conducted to increase awareness levels among the students.
- Training at regular intervals should be incorporated in the regular curriculum.
- Academic institutions should devise instruments to measure soft skills required in students.
- Relevant Textbooks and Instructional materials in soft skills education should be developed. • E-learning, teleconferences and webinars can also be used. (E – Soft Skills Training) to impart knowledge in the area of soft skills to students.

#### CONCLUSIONS

The workplace has evolved an interpersonal dynamic that can't be ignored. The acts of listening, presenting ideas, resolving conflict, and fostering an open and honest work environment all come down to knowing how to build and maintain relationships with people. A

distinct advantage of having strong soft skills is that you become a key influencer in the organization in a short span of time. Irrespective of the professional qualification, today's engineers need to possess a high Soft Skills quotient, apart from domain knowledge in order to succeed in this competitive era.

*Soft skills and critical and independent thinking should be fostered in engineering education, not just because they are demands of the professional world but because they should be part of any fundamental education.*

Soft skills shape human beings' personality.

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