

Calling for a Paradigm Shift in Education

"The world we live in is not out there on the street. It is in our own minds. Until we recognize this, we will always be running away from ghosts and moving toward mirages. In our business and personal lives, we often fail to see the true threats and true opportunities because of the limits of the way we make sense of the world."

Making sense of the World – in the Quality Quest Contexts...

At birth, we have no understanding of what the world is. We try to understand the world and find our way, using our senses. In the process of our gaining a perspective on the world, we are guided and influenced by the view of others around us – the cultural influence! In course of time, we make a mental map about the world and use it to navigate our way.

Once we learn to look at the world in a particular way, and respond to it in a specific style of our own, we forget that it is only one of the many possible ways/styles of living in the world. Our mental maps limit our behaviour because maps are always an impoverished representation of the vast reality – the world. We fail to challenge the limits of the map. We rather use our intelligence to defend our maps than to constantly expand them to include the ever emerging opportunities and threats.

Thus, if you were brought up in a family of vegetarians, you swear by vegetarianism. If you got introduced to a specific religion "α" or "β" or "γ" you will defend *your* religion as the true one, even without having explored the others adequately! We have a tendency to defend what we believe in rather than daringly venture out to search.

And that should alert us in whatever we do: Are we failing to examine what we hold true, and, thus, blocking our opportunities for realizing many more wonderful truths?

Thinking of Qualitative Changes in Education:

There are two kinds of changes we could usefully think of. When a centimeter long worm keeps eating leaves, and grows to two centimeter, it has certainly changed: developed and grown. Then it goes into a cocoon and emerges as a colourful butterfly. It has changed again. The first change is not as radical as the second one. The change into a butterfly is called 'transformation' while the first is called 'development'. Development is not as challenging as transformation. Transformation implies you giving up many things... including your old identity!

When Galileo proved the earth is not the centre of the universe with his telescope that showed the moons of Jupiter, the scholars of his time refused to look through his telescope because it challenged their beliefs that the earth is the centre of the universe! But reality can't be ignored for too long. Similarly, today, the changes in the world are so radical that education too needs a radical transformation to be able to help students make sense of the world. No amount of cosmetic changes will suffice. But, let us start with a fundamental question: why education at all?

Humans Alone Need Education

Even though you might find it insulting to say so, among all living beings, it's only the humans who need education. Plants, birds and animals don't need it as much as we humans do!

The plant sprouting out of the seed knows how to find sun light. It has heliotropic tendencies built into it. Its roots go down looking for water.

A dog barks, even if it has never seen another dog in its life. All animals *know* how to procure their food, how to eat the food that they procured; how to build their dwelling place... all without having someone to teach them; without their having to learn them from others.

And, it is we humans who spend a lot of time *learning* to sit up, crawl, stand up, walk, or talk. These skills come only by *learning* with much effort. And we learn by modeling or imitating *others*. Without others to imitate, we will have no ability to sit, walk or talk. Even our mother tongue was not embedded in our brains. It's what we picked up from others, *after birth!*

A child's brain is compared to a sponge that mops up everything it finds around – good and bad alike! Its brain is designed to learn. A child is an avid learner. The primary task of education is to give the child the knowledge and skills it requires to make a living; to earn its bread, to protect itself, to enjoy good health, and build healthy relationship etc. And, education is such a long drawn process, involving 15-18 years of the child's early part of life. Having invested so many years of life in education every young person is right to expect to land jobs and earn a livelihood at the end of his/her education.

Advantage of an Empty Brain – We can Learn!

Since animals come with a brain that is embedded with the needed software to make sense of the world and to navigate their way in the world, they have very little to learn. Hence, they can hardly innovate or develop their way of life! Thus, the bees that built their hives in hexagonal holes thousands of years ago will be building it the same way even a thousand years later. There is no improvement or development in their way of life. For centuries they have the same kind of foods, same style of dwellings, and their life goes on set patterns for many a millennium.

Humans, and humans alone can innovate and develop. You are born without set notions about anything. Besides, whatever you learn, you can unlearn and make way for learning new skills. Hence, there is development in human life. The house your grandfather built looks old fashioned to you today. Perhaps the house you build will be considered old fashioned not by your grandchildren, but by your own children! Or, you may find it old fashioned in the next few years!! Change is happening at a much faster pace today. And we can boast of phenomenal achievements: Even a beggar can travel or communicate at a much faster speed and with much greater comforts than the monarchs and queens of previous generations! You see the municipal employee sweeping the road with earphones plugged in his ears, blaring stereo music from FM Radio or MP3 player. Even emperors and queens needed a team of musicians to play the music this municipal employee can enjoy playing it by pressing a button!

Thus, the world we grapple to come to terms with at birth is also the world that we constantly create. The faster we change the world, the more the world challenges us to change, too! Having invented computers and the Internet, it is now becoming

important to learn to operate computers and use the Net for accessing information and for communicating. The changes the world is going through are not superficial. They are radical; hence, unbelievable. Who would have believed if someone told him that so many millions of people will be using cell phones as we do today? Education, as a door way to the world, too, needs radical change since the world has changed and is changing at ever faster speed.

Education at crossroads:

In the last decade, faced with millions of educated unemployed young people in the country, there was a tendency to blame the economy for not growing fast enough to absorb them in industries. But, today, the industry is accusing the education sector, and it has come as a shock to many, setting in motion a drive to improve its quality.

Here is a sample of an accusation:

Addressing vice-chancellors from across the country...National Association of Software and Services Companies (NASSCOM) president Kiran Karnik pointed out that the entry selection average for engineers stood anywhere between 20% and 25% and dipped further to as low as 10-15% for ordinary graduates... Karnik said, "We can't employ the 26th candidate because he is just not employable. Most students fail to make a mark. Yes, they have a degree, but they are not employable. They lack technical and soft skills."

He said the curriculum was outdated in most places and equipment used was obsolete; students had weak foundations because of which they were not picking up new skills. "The biggest failure is that students don't possess soft skills to discuss, present and articulate," he added.ⁱⁱ

Obviously whatever changes that education has made over the years has been inadequate to meet the challenges of a changing business world. It needs further change. Quality Assurance/Improvement is an attempt in that direction. But, will improvement of quality of existing education offer a realistic answer to the challenges? This question can be answered only if we are willing to look at the challenges that are thrown up from the world outside of the education system itself.

We may usefully focus on the *business environment* to get a clearer picture of the challenges – though this may not offer a complete picture of challenges to education. At least, to the extent students invest their time, money and energy with an expectation that it will help them earn their livelihood, it will be imperative for educationalist to see what kind of job requirements exist in the industry outside and how to prepare the youth for their jobs.

Industry has gone through radical changes:

1. The Organizational Structure of Industry

The organizational structure of Industry that was pyramidal has transformed itself into a flat-playing-field kind of a structure today, particularly after the World Trade Organization and the Internet revolution. In a pyramidal structure, the boss/leader on the top dictated terms to those at the bottom, and then followed it up with monitoring for execution of the commands given. Those at the bottom were to obey and execute commands. They were mere executives.

Today, the leader does not command, but coordinates the efforts of his people towards goals. S/he will sit with the team and chalk out the best

possible strategy to achieve results. In the team, everyone is expected to take active part to throw in his/her might to move the ball towards the goal. Industry does not need obedient executives, but creative and talented players who will be in top form all the time; people who have Personal Mastery!

Peter Senge:

People with a high level of personal mastery are able to consistently realize the results that matter most deeply to them--in effect, they approach their life as an artist would approach a work of art. They do that by becoming committed to their own lifelong learning.

Unfortunately, we are still producing obedient executives who wait for commands and are satisfied with executing orders. Imagine a player on the play field waiting for commands from above when he got the ball with him or plays only as per instructions given earlier? In any new situation, he or she will be unable to perform. And the world is full of new situations emerging all the time!

Similarly, in earlier days, by doing the given duty faithfully, better than the others, each executive sought to climb to higher ranks within the organization. Now with organizations going flat in structure there is not much space to climb. Besides, the nature of works have transformed in such a way that unless each and everyone cooperates and work as team, everyone will fail! There is no individual excellence devoid of cooperative excellence in today's business contexts.

One person can damage the brand name, and bring down the whole Company! Hence there is vigilance needed on the part of each and everyone to build the Company. If one weak spot is identified, others will have to rush there to give protective cover; and cannot rejoice at a weak link breaking off.

In the schools, we are creating individuals who fiercely compete with their companions to capture the top slot in marks and ranks; who rejoice at the downfall of their companions if that will help him/her to move ahead! This attitude that got ingrained into the young people is causing a lot of concern among industrialists who find it almost impossible to retrain them to cooperate!

2. *Constant Learners Needed, not Settlers:*

Bill Gates: “In three years every product my company makes will be obsolete. The only question is whether we will make it obsolete or someone else will.”ⁱⁱⁱ

There is no way to settle down at one’s success. Competition is around the corner constantly trying to outperform you. Hence, you need to be a constant learner and innovator, striving to outperform yourself – make yourself outdated – once in every three years!

Yet, how many of our young people ‘settle’ down in their jobs, thinking they got a ‘permanent’ job? The moment they land a job, they look for *settling down* in marriage, then, together, they invest all their energies in *settling down* in their own house...without realizing their Company or industry could be getting swept out of business in a matter of three years? No one can settle down coolly like in the grandfather’s time where Industries were far more stable! Today, we need to constantly innovate. That requires constant learning. Our system does not encourage individual initiatives in learning. Parents don’t learn at home. Teachers are not perceived as learners. So are the students.

We are satisfied with covering the syllabus – in meeting with set standards and requirements. To search for what is emerging as new and learning that or teaching

that has no place in the system – Be it a new scientific development, a new computer language, a new design of an engine...

3. Seniority gives way to the New and the Learning

Gone are the days of valuing seniority and long years of experience! The one with longest years of service may not have seen a computer when he/she was a student! And someone with ten years of experience may have learned computer languages that are long outdated. Hence, the young who bring in the new are better equipped in the industry! Even Bill Gates almost missed the Internet revolution but for his humility to learn from newcomers in his Company about Internet's all pervasiveness. We have an education system that values seniority and experience than freshers and learners. [Don't we rag freshers?] We run organizations with 'authority' than by 'humility'. Peter Senge, modern management guru suggests 'humility' as the mark successful 21st century business leaders!

4. Communication that is not very polite

Young employees who see their Managers not properly understanding the changes taking place in the world outside, or missing an opportunity to use their fresh knowledge and new ways of thinking need to challenge their Masters! Their humble obedience could be detrimental to the very survival of their Company. We are yet to create a culture where students could challenge teachers so they learn to communicate dissent to their bosses.

Even today, we prepare students so we could tell their employers: "This student has been found to be very obedient... He/she will do whatever job

entrusted to him/her to the best of your satisfaction...” And these are certainly not the marks of a good modern day employee! We do need young people who would stand up and challenge wrong decisions or put forth forcibly the better options they have with them. Probably, the recession could have been avoided had the employees had the guts to speak up when unhealthy decisions were made by their bosses that brought down well established Organizations?

5. Additional reasons to introduce transformational changes in education:

We have, for too long, been operating on the assumption that the teacher and text books hold knowledge, which is then passed on to students through education. It's time we faced reality squarely. Today, the Internet is the undisputable source of knowledge – whatever the subject one wants to learn. And, the students are good at accessing the Net than the faculty? If one wants to explain how something works, instead of trying the patience of the students with one's own drawings on the black board, better search the net “How things work” and you get more than a 150 million websites offering the resource! If you teach how cells divide, you may better show it dynamically as animation via the web than make students grasp the division by pouring into the two black and white illustrations in the text book. Even the geography teacher need stop with introducing the Equator, the tropic of Capricorn or the tropic of Cancer. Today, the student can accurately inform you precisely at which intersection of these lines his house is located. Or the history teacher shy away from the NET. For instance, there are more than 40,000 websites dealing with *the Battle of Plassey*.

Instead of the English teacher telling students there are 44 sounds in English though it has only 26 alphabets, she can help students learn those sounds and

make them proficient in reading the 44 IPA symbols representing the sounds. A software *sephonics*^{iv} available for free download could teach phonics in more exciting ways than most English teachers are capable of.

6. Open Courseware Movement is Gaining Momentum

With the Massachusetts Institute of Technology putting on line 1900 of its courses for free access to students all over the world, we may say that the momentum of providing Course Material for Free by Universities have come of age. Today, we have even a specialized search engine to find the course you are looking for at <http://ocwfinder.com/> If a student could sit at home and watch/listen to the lectures of the best teachers in the world explaining Biology or aeronautics at MIT at any convenient time, and for any number of times, what is so great about attending classes in the colleges here?

Colleges that Learn:

We are certainly in an archaic world of education where someone far away fixes the syllabus – the quantum of what is taught – and a teacher nearby is trying it to ‘cover’ the syllabus for the students. All too often we hear students and teachers complain that the syllabus has become too heavy! But, when you allow students to surf the web for information, on any topic, they will come back to tell you that the text book is offering a highly impoverished version of the information that they got from the Net! Even elementary school kids who get absorbed with, say, the structure of plant cells or the gif images of a beating heart find their text book versions by far incomplete, impoverished and uninteresting!

Certainly, given the deep desire for kids to absorb knowledge, the drudgery that education has become is not because of the matter being taught is vast or deep; but because it is not vast or deep enough to satiate their hunger for knowledge.

If we have students discussing and finalizing their syllabus, and dividing the topics they are going to learn among themselves, and on how they will share their knowledge with their peers, then we will have a student centric education. The teacher will be a leader among learners, bringing in the learning of each batch to the next one.

For that to happen, we need to give up the assumption that students can't learn by themselves. Or that they are not interested in education. Rather, young people are curious. Their curiosity needs to be nurtured. In stead of allowing text books to choke their curiosity, the Net could help them nurture their interest in learning.

Peter Senge authored the Business Management Book “The Fifth Disciple” by studying the practices of the most successful of modern Companies – in the context of changes sweeping the world. He came with five distinctive marks that set the winners apart from the losers. He also authored “Schools That Learn” that could help educational institutions to redesign their schools and colleges to help students respond appropriately to a changing world.

For, Peter Senge observes that when a toddler enters the nursery school, today, neither the parents nor the teachers can tell what the world will be like when that child steps into it after putting in 18 years of study! And, yet, we so daringly draw up a syllabus today to take him/her to fit into the world of 2025!

In all humility, parents and teachers need to acknowledge that we can't make sense of the emerging world of 2025. Hence, we cannot claim to lead students to a place that we don't know of. The only thing we can teach children are *the ways to find their way forward*. We need to teach them to '*learn*' and to be '*constant learners*' and '*self-motivated/guided learners*'. That is the only guarantee we can give through education to children of today towards an uncertain world of a future.

Nothing short of a Student Centered Education System will be able to help the student achieve that! That calls for a Transformational Change in the Education System. Not just some Quality Assurance within the Teacher/Syllabus Centred system that is far removed from the present day reality of business and the NET.

ⁱ Yoram Wind et al., "The power of Impossible Thinking", Wharton School Publishing, p.1

ⁱⁱ <http://timesofindia.indiatimes.com/news/india/Most-grads-unemployable-Nasscom-chief/articleshow/629387.cms>

ⁱⁱⁱ [http://www.giantimpact.com/dl/mic/MIC_13.8 - May 2009 Online .pdf](http://www.giantimpact.com/dl/mic/MIC_13.8_-_May_2009_Online_.pdf)

^{iv} <http://www.wartoft.nu/software/sephonics/>