Preparing Young Minds for Industry 4.0: Challenges and Changes

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Abstract

The new generation stepping into the fourth Industrial Revolution will witness a dynamic transformation in all aspects. New wave of global technology will change the entire world. With emergence of technology in education sector will witness many fundamental changes, in near future; many scientific and social theories will not be able to match the depth and breathe of human perceptions. The students graduating by 2030 will make career in the fields that we are at this moment clueless Employment sector in this new era will seek critical thinkers, problem solvers, and people who can interact across the globe. The problem in the future would not be the lack of job, but the shortage of skills that the new jobs will demand.

Thinking of future just scares us how our future generation will fit in such an atmosphere as our education system still continues to equip our children with skills that will be very little or have no relevance in future This paper sincerely attempts to draw the attention of Parents, Teachers, and school/Collages management and policy makers on the future needs of our young minds. What need to be done in our education process to meet the challenges and changes that industrial revolution4.0 will bring with it.

Key Words: **Young Minds** In Social Worlds child and adult's mental developmental process **Industry 4.0-** Refers to a new phase in the Industrial Revolution it's about revolutionizing the way entire business operates and grows.

Co relate Interrelate two are more facts, **C suite** A term used to describe corporate officers and directors.

Introduction

According to Alex Gray "Change won't wait for us: business leaders, educators and governments all need to be proactive in up skilling and retraining people so everyone can benefit from the Fourth Industrial Revolution".

Society around us is fast changing all thanks to technology that had not only made our lives easier but provided many options upon innovations, artificial intelligence, virtual reality ,mobile computing, robots, self driven car & fighter plans, no longer seems to be science fiction Perhaps we are living through some of the most exhilarating times of human history where our

life has already seen integration of technology in every sphere . In such an atmosphere, how can education and employment sector be untouched from it?

Says **Jack Ma founder of Alibaba Group** "If we do not change the way we teach, thirty years from now we will be in trouble."

These words are enough to alarm parents/teachers school/college management and policy makers. As new generation, stepping into the fourth Industrial Revolution will witness a dynamic transformation in all aspect. A new wave of global technology will change the entire world. In near future; many Scientific and Social theories will not be able to match the depth and breathe of human perceptions. Students graduating from college by 2030 will make career in the fields that we are at this moment clueless. The problem in the future would not be the lack of job, but the shortage of skills that the new jobs will demand. It is a high time to think upon how our future generation will fit and adjust in this change as we still continue to equip our students with skills that will be very little or have no relevance in future.

To meet the future demands we need to prepare our students to understand how they can correlate, use and apply different knowledge in diversified contexts, how they can create synergies among different subjects to create "*something*" that connects to the real world. Emphasis should be on learning how to learn rather than simply reciting a set of facts and procedures. This clearly indicates the new style of learning that is beyond the boundaries of classroom. Schools/collages must reinvent themselves quickly. They need to adapt to the change, demands and have the obligation to come out of its shell, its hermetic spaces and try to give as many opportunities as possible by creating the adequate contexts for students to be prepared for the future.

➢ Industry 4.0 and its Impact

Industry 4.0 can be characterized as the marriage of physical and digital technologies, such as analytics, artificial intelligence, cognitive computing and Internet . The future will see entirely changed face of Industry where machines will operate independently, communicate and cooperate with humans in creating a customer-oriented product. It will bring about extensive changes to the world of work and all these changes will have a direct impact on jobs.

Employment sector in this new era will seek critical thinkers, problem solvers, and people who can interact across the globe, Future employees will not only need to be highly trained in the emerging technologies but also   importantly in the values associated with using those

technologies. In the future ability to develop and possess the technology will not be sufficient enough, but also to know whether, when, and where to use that technology. That kind of thinking is both reflective and interdisciplinary.

Referring to a new research report by Deloitte Global "*The Fourth Industrial Revolution is here—Are You Ready?"*

This report explores the C-suite's readiness to leverage it to benefit customers, employees, communities and other key stakeholders. The questions focused on four major topics: social impact, strategy, talent/workforce, and technology. The findings very clearly indicates that Forth Industrial revolution will have a great social impact on talent workforce, and technology a vast majority of executives believe they are doing all they can to prepare their workforces for new wave of change but all these efforts are not enough. Efforts should be made at grass root level in which all the major social stake holders had to play equally active s and important role.

➢ **Skill Set required for future**

- Critical thinking – to challenge the norm, find alternative ways of doing things, and work under constraints that lead to more efficient solutions.
- Good Technical skills – to operate across multiple systems and diverse industrial sectors.
- Communication and social skills – to articulate creative ideas clearly and persuasively.
- Learn ability – ability to pick up new skills quickly.
- Opportunities for experimentation – try different things and troubleshoot current practices (fostering a culture of risk-taking).
- Fostering problem-solving and observation skills.

➢ **Now the question is – "Are we really preparing our young minds for future?"**

In today's world of fast changing technology and information overload, If our goal is to create students who can become valuable members of the workforce, an independent thinker and a problem solvers students need to be trained and not taught.

But alas! Our education System is continuously failing in nurturing young minds in such a way. Unfortunately we are nurturing the generation of crammers which can clearly be seen in the result of Board Exams where list of toppers is very high students in many subjects had scored full marks this is really a matter of serious concern.

The perfect score in board exams rises concerns not only the quality of questions asked in paper but also on evaluation pattern. Questions often asked in exam are flat and does not allow students to apply critical thinking hence they end up with fully correct answers. The problem with the perfect score is directly related to the poor quality questions which can be answered by rote learning. Besides the answers used for evaluation have a stereotype model and the correct answer is the one that follows set model, slightly original and creative answers do not get marks.

Board results are the direct reflection of a continued culture of cramming that is eventually weakening the higher education**.** Yet there has been no policy shifting. If we really want to prepare and equip our students for future demands , so that industry have the right workforce and skill sets people . Educational paradigms ought to be rebuilt.

➢ **The Challenges-(areas need to be considered seriously)**

- The fundamental flaws of our education system is the best crammers are rewarded with excellent grades.

- The aim of education should not be just stuffing brain with bookish knowledge. It should be to improve the character, personality and skills. But our education system only promotes rat race among children. It focuses on marks / percent not on acquiring first-hand knowledge. Students have to read and mug-up entire textbook without any understanding it. Even examination process is full of flaws, it is difficult to understand that how can anyone's years hard work, over all knowledge and skills be judged on the basis of just three hours exam.

- In schools and colleges, lots of attention is given to theory and completion of syllabus within a time .The practical knowledge is completely ignored teachers expect their students to score high in the exam (rather than acquiring the quality knowledge . When these students pass the exam, they forget all the things they have studied due of lack of practical experience. Practical knowledge and skill based education is still far away from the reach of students.

- Unfortunately in our country student's performance is evaluated in terms of marks in all sort of competitions , for good jobs , getting admission in renowned universities or college etc less than 80% marks are of no use ,so students ,teachers and even parents focuses more on academics and the students are not well exposed to the external world. The aspect of soft skills and personality development is completely overlooked at early age of development where it is highly desirable.

- Many countries had switched to ipad, tabs, laptops many more smart, high-tech gazettes and techniques for educating their children right from an early stage of learning .which has its own advantage. Whereas our students are still lifting the heavy burden of their school bags, which is not only hampering their physical and mental development but also refraining them from exposure to the technology and till the date has no solution to this problem.

- Majority of population in our country lives in remote areas with yet very less or no facilities, most of the students study in government schools/colleges. The situation of government schools /colleges is not hidden from anyone, inefficient teachers, lack of staff, poor quality of teaching, sanitation, lack of labs and infrastructure. Such students have to face many challenges to overcome these problems and continue their education, so just forget about future skill set development first they are need basic things. The quality education is still a long awaited dream for millions of students in remote areas.

- The issue of reservation is one of the debateable topic as it stops deserving students/ candidate to have a fair opportunities In our education system, seats are reserved for reserved categories which seems very unfair . The education system should give equal chance to all students irrespective of their cast and creed. This problem should be taken into notice as soon as possible and some serious efforts be done to change the situation as soon as possible.

- Last and very important one is parent's very high expectations from their children, which is affecting children's academic performance and progress. Says psychologists and sociologists every child is unique and possesses different qualities. We as parents should never compare and compel them to act according to our expectations. But due to tough competition, scarcity of job opportunity, high standards of living and future demands put a lot of pressure on parents for which they want their Childers to be number one.

> **Changes Suggested**

- **Stop Focusing On Marks -**The day our students, teachers, parents and system will stop focusing and emphasising on the marks / percentage, students will be more focusing on actual learning in stand of cramming. And the half of the problems will automatically be solved.

- **Curriculum should be designed in such a way that must pay attention to experiential learning** - case studies, research based assignment and problem solving and Analytical skills the most important qualities that are required when students complete

their studies and look for jobs . Incorporating these skills at an early stage will help a lot in a long run.

- **Reward creativity and original thinking -** Memorising is no learning; the biggest flaw in our education system is perhaps that it incentivizes memorizing above originality. Our marking systems need to be built to recognize original contributions, in form of creativity, problem solving, valuable original research and innovation. If we could do this successfully Indian education, system would be changed overnight.

- **Focus on skill based education** The aim of education should not be just stuffing brain with bookish knowledge it should be to improve the overall personality and employability skills. Skill based learning focuses on increasing employability equipping students with appropriate hands-on skills which helps them to be job- ready.

- **The emotional family pressure** is what is dangerous today when we talk about student suicides and runaways. This is something that needs change on the part of the family and also the teachers to some extent so that the child grows in a free and pressure-less environment.

- **There are many more off beat Careers to Pursue!** Today every parent want their children to doctor engineer and be paid well but the fact is that there are jobs other than being just a doctor, or an engineer . But more than the education system we need the parents to open their eyes and broaden their minds. The child can't be forced by the education system, but can be forced by his/her parents. The students need to be aware of the multiple careers options that are available. This brings us to another important point – development of career council cells in schools and colleges.

➢ **Recommendations**

- Curriculum should be designed keeping global demand in mind.

- School and colleges should use digital classroom and labs in stand of chalk and board teaching. Being digital will not only make class and subjects interesting it will also lessen the burden of bags too.

- As said to succeed in today's world one language is not enough students should be trained in other international languages as per their interest.

- In exams Students should not only be evaluated on the basis of their written exam but marking should be all round (on the basis of social and emotional intelligence) also.

- Teachers should promote the habit of experiential learning in students like search, research and being original rather than following the conventional ways teaching and learning.

- Subjects like value education, human values and professional ethics should not be confined up to books and exams but the real purpose will only be solved when student will practice in real life.

- Debating in school/ colleges , making posters, charts and slogans to promote social and environmental issues will do no good. To promote social and environmental harmony, projects should be given to the students to work on ground.

- Last but not the least is meditation/ yoga should be equally given importance as other subjects as physical fitness is very important for mental peace.

Conclusion

Education 4.0 needs to align with Industry 4.0 and prepare students for the next industrial revolution. Today Emphasis should be on making students   how to learn rather than simply reciting a set of facts and procedures. This clearly indicates the new style of learning that is beyond the boundaries of classroom.

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