The Role of Education 4.0 for Better Learning Outcome towards Industry 4.0

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Abstract

Every child is a born genius. In the preceding 250 years, civilization has practiced four Industrial Revolutions, which have utterly changed the countenance of industry as we know it. Here, we believe that the changes in industry should and must have a direct impact on the way we build the education system for today’s students. The Primary need of education is to make an influential individual to go ahead a flourishing life and contribute best to the society, nation and humanity. The goal of Education 4.0 is to create students who can become valuable members of the workforce and educational paradigms need to be rebuilt alongside each new revolution in society. Therefore education and training are the most effective tools to achieve this outcome which empower an individual to lead a successful life of each student to fly high.

Keywords: Education 4.0, industry, Revolutions, tools, society

1. INTRODUCTION

Since youth are the principle asset of any country, education turns into the most incredible asset for social change. India’s demographic structure is changing the Indian populace is getting more youthful and by 2025 around two-third Indians will be in its workforce. A ceaselessly developing more established world offers an enormous open door for skilled and competent. To make the best national gains from this progress, the youth must be set up by higher quality education to make them most profitable; henceforth, the framework needs to be transformed.
Industry 4.0 requires a dangle to Education 4.0. In a modern industrial setting, Industry 4.0 is a term experts use to portray the automation and data exchange utilized in manufacturing innovations. To adequately actualize Education 4.0, education needs to empower more cooperation by students.

A. PROGRESSION OF INDUSTRIAL REVOLUTIONS

Despite the fact that there have been banters about whether current developments in technology are the late piece of the third industrial revolution – the advent of information and communications technology or ICT – or establish the approach of the fourth industrial revolution, it is progressively evident that the rapid advancement of technology has changed everybody's economic, social and cultural as usual. The fourth industrial revolution is said to be introduced by headways in robotics, augmented reality, cloud technology, big data, artificial intelligence, the internet of things and different advances.

It is portrayed by the combination of technologies and the obscuring of the lines between the physical, biological aspects of life. These innovations are envisaged to significantly affect our day by day lives, including the manner in which we learn, particularly on the off chance that we are to set up the more younger generation and reinstruct the current generation for evolving work, social and cultural environments. Regardless of different discussions on student-centred learning, learning outcomes, lifelong learning and even on the utilization of ICT in education, the training area, and higher education in particular, is as yet espouse antiquated methods of encouraging learning. Curricula and programmes can scarcely find the requirements of industry and contemporary social life. Education echoes the discussion on 21st century skills with its emphasis on shutting the digital divide, ICT skills, the utilization of open educational resources, e-learning and versatile figuring out how to build access to social, and significance of the education framework.
With the mystification of training happening worldwide in the course of recent decades, the structure of both the conventional and contemporary instruction frameworks has neglected to guarantee access to quality, important instruction for the total populace. All things considered, there is a need to overhaul contemporary training frameworks to make a versatile and adaptable framework that supports instructing for the fourth and future modern upsets. In short, there is a need to concentrate on ICT and future technologies, teacher education and lifelong learning for versatile and adaptable education framework.

Such a framework ought to be results based and guarantee persistent improvement in the instructing and learning condition and in educating and learning practices. Future education frameworks ought to unequivocally concentrate on outcomes-based curricula and programs and encourage flexible awarding of educational qualifications based on outcomes-based units.

**B. EDUCATION 4.0**

In the today’s new universe of fast changing innovation and data overload, students should be prepared and not instructed. Information should be made available and students need to figure out how to think instead of the instructor offering it to them in an unbending structure.
We nowadays comprehend that students are not the same, don't have a similar starting stage, can learn and ingest various zones of concentrate diversely and should be guided to build up their abilities as opposed to showed a lot of predefined data points. We nowadays comprehend that students are not the same, don't have a similar starting stage, can learn and ingest various zones of concentrate diversely and should be guided to build up their abilities as opposed to showed a lot of predefined data points.

Education 4.0 necessities to line up with Industry 4.0 and plan students for the next industrial upheaval which will occur in the course of their lifetime. While significant distance learning and a huge amount of information is currently accessible to the Internet insurgency, the structure of our education framework has still been left unchallenged. Learning outcomes are as yet being tried by the criteria set out in the second modern revolution.

![Figure 1.2: Model of Classroom Learning Outcomes](image)

### C. EDUCATION

- Wide dissemination of eLearning
- Growing enthusiasm for options in contrast to educator focused methodologies, such as constructivism resource-based learning, and so forth.
• Local, regional, and global cooperation to make repositories of educational content
• Awareness for the need of acknowledgment of aforementioned learning
• Increasing utilization of the Internet to discover data and in the nick of time learning

D. SOCIAL
• Increasing utilization of information advances in everyday life and for social purposes
• Increasing social utilization of online virtual spaces
• A new meaning of self and society that incorporates PC intervened social structures, and individuals outside of one's prompt physical condition

E. TECHNOLOGY
• The far reaching appropriation of PCs and the Internet
• The rise of Web 2.0, including websites, digital broadcasts, social cooperation instruments, and so forth.
• E-Learning dais or learning management frameworks that fuse highlights of Web 2.0
• Free and open source programming

2. INDUSTRY 4.0 AND ITS BRUNT ON EDUCATION

Industry 4.0 alludes to the fourth industrial revolution. It requires a powerful change. Another influx of worldwide innovation will change global production. Pioneers in this new era will need to be masterminds, problem solvers, and have the option to interact across the globe. In short, they should be generously instructed.

However, by what method should this impact on education? Future employees should be highly trained in the developing technologies yet in addition, as critically, in the qualities related with using those innovations. Later on, we should not just have the ability to develop capacity and to build up the innovation yet additionally to know whether, when, and where to utilize that innovation. That sort of reasoning is both intelligent and interdisciplinary. The issue later on
couldn't be the absence of employment, yet the deficiency of abilities that the new openings will demand.

![Rolling Mass of Change in Industrial Revolution](image)

**Figure 2.1: Rolling Mass of Change in Industrial Revolution**

As it were, Industry 4.0 will require the world to produce another sort of workers—an information specialist! Tomorrow's industry leaders and managers must have new ranges of abilities to adapt, to oversee, and to take advantage of Industry 4.0. They should be basic thinkers, problem solvers, innovators, communicators, and provide value driven initiative. They should have the option to see beyond the technology at play to the suggestions for society for the use of that technology. They should realize the innovation yet have the option to meet and solve all aspects of the challenges engendered by this technology. This sort of pioneer requires new approach to education.

Higher education in the Fourth Industrial Revolution is an open, objective and dynamic entry that can change the thinking of society and upgrade the living standard for everyday comforts of the folks. The fourth industrial revolution was get going by counterfeiting and tainted the
workplace in the focal working environment. The muddle up of human and machine diminishes separation between humanistic and sociological disciplines among science and innovation.

A. DOES INDUSTRIAL REVOLUTION 4.0 EFFECT EDUCATION 4.0?

In the era of the fourth modern upheaval, higher education needs to extend its innovation framework reforms by breaking all hindrances to innovation. The speed of innovation move should be raised to help the monetary and social development.

B. EDUCATION 4.0 FOR TEACHERS

Education 4.0 is a savvy, virtual and Technological revolution to serve many stakeholders, including teachers and educators. Teachers may believe that the Education 4.0 customized learning philosophy will give more work, yet it isn't. Conversely, Education 4.0 is helpful for teachers and educators in educational institutions for the elucidation that they can all the more likely meet the particular needs of students. Through Education 4.0, teachers can eventually teach students not classes. Use tools and techniques that advance this customized learning.
objective. This prompts better learning outcomes for students and better educational outcomes relying upon what results educators and teachers bring.

Education 4.0 consent teachers and educators by giving best strategies and methods to facilitate exertion. Diminish the administrative burden via automating numerous procedures while modernizing explicit procedures and teaching techniques. Education 4.0 intends to improve performance by upgrading teacher aptitudes and improving student learning outcomes.

**Figure 2.3: Teachers in Education 1.0 To 4.0**
C. EDUCATION 4.0 FOR STUDENTS

This is the most significant objective of Education 4.0 for all educational institutions: to encourage students and improve students' learning outcomes. Students are the primary stakeholders of the educational ecosystem and are the fundamental beneficiary of the educational ecosystem. Education 4.0 treats students as beneficiaries in the past. Using expertise, students can associate in a better way with numerous stakeholders in the framework, better communication with teachers, parents and management. Student learning outcomes are straightforwardly relative to the degree of execution of Education 4.0.

Education 4.0 likewise improves learning as the greater part of the tools and methods that help Education 4.0 will assist you with learning more successfully and viably than traditional teaching techniques. As it were, there is a characteristic enthusiasm for the curriculum. Education 4.0 additionally styles learning increasingly powerful dynamic exercises. Such as photographs and recordings that make students increasingly intrigued and learn through tools and platforms, in any event, when students can connect and learn whenever Easy access to teaching materials.

3. IMPACT OF INDUSTRIAL REVOLUTION 4.0 ON HIGHER EDUCATION

Higher education in the Fourth Industrial Revolution is an open, objective and dynamic entry that can change the thinking of society and upgrade the living standard for everyday comforts of the folks. The fourth industrial revolution was get going by counterfeiting and tainted the workplace in the focal working environment. The muddle up of human and machine diminishes separation between humanistic and sociological disciplines among science and innovation.

A. PARADIGM OF EDUCATION 4.0 REQUIRE GRADUAL SHIFTS

1. Request drove rather than supply-drove instruction
2. Competency-based rather than information based
3. Consolidate problematic advances &skill-sets
4. Deep rooted learning rather than front-stacked learning
5. Modular Degree rather than one-shot going
6. Accentuation on EQ than IQ alone

**B. FOCUSING ON EDUCATION TRANSFORMATION**

1. Providing a platform for policy advocacy and influencing reforms pertinent to the industry needs
2. Creating sustainable linkages between Industry and Academia
3. Facilitating networking and knowledge sharing
4. Promoting collaborative ventures in academic exchanges, industry oriented research, consultancy and value added services

**4.0 UNIVERSITY: THE PROSPECT OF OPEN SYSTEM**

Universities would widen into open scholastic frameworks with neighborhood network and society everywhere turning into a vital piece of university ecosystem. The interchange between university, industry and society needs to develop into a living platform with dissemination of thoughts, information and necessities of every one of them being catered by the other. Universities would need to create stronger relationships with society and Industry – by offering real time solutions for the local issues, and furthermore would need to open to made it progressively responsible.
A. INTENSIFICATION OF MULTI-DISCIPLINARY RESEARCH

Universities need to break the inward silos of research, and work together with the best in different department within the university as additionally with other universities to compel the knowledge strengths. This would likewise drive multi-disciplinary research which could prompt topical and society neighborly research.

B. EXPERIENTIAL LEARNING FOR BETTER LEARNING CURRICULUM

Instructing models need to move to learning by doing, and the simulators and industry connect allow for growing such models of experiential learning. With such models, students are more likely to welcome the use of the knowledge imparted, and furthermore relate it to this present real world challenges. Utilization of Technology like AR/VR, simulation and so forth might be utilized to give real life like exposure. Universities need to follow the model instances of utilizing most recent innovation advances to improve in overall student learning experience, giving equivalent significance to alternate mentoring methods like AI, Chat bots and use of data analytics.
C. PLATFORM APPROACH TO LEARNING

University of the future would empower gaining from educator facilitator, open source technologies, industry experts, alumni and other peer group of students. This would encourage a culture of friendly learning, social learning and mentoring by seniors, faculty, peers and industry experts. More universities need to come on board to receive innovative technology as a medium of guidance for course plan including flip study, Interactive and experiential learning, M-Learning, and so on.

5. CONCLUSION

Right from ancient times, education has constantly held noticeable quality in India. As the years progressed, the learning-teaching methods have continued evolving. Today, understanding that innovation has seeped each part of life, higher education institutes are putting forth attempts to benefit as much as possible so as to arm students with all the necessary skills and knowledge required to work in the current contemporary world. For education 4.0 to succeed and sustain universities should be future prepared and encourage the adoption of this phenomenon across all switches. While the universities would be guided by central principal of agility and staying up with the ever changing economy.

Universities are the place where bright minds come together to push the outskirts of research, which necessitates that knowledge and expertise be shared between universities. The future roadmaps of every university need to think about socio-economic considerations would direct local actions notwithstanding to the core and category roadmaps. The future roadmap of the university to draw nearer to the Education 4.0 precepts may take a gander at budgetary requirements, faculty constraints and the development institutes across teaching and research outcomes. Bolstered by innovation virtual gatherings and discussion forums are paving the way for peer-to-peer research collaboration across geological boundaries. Each university needs to transform - The pioneers are a long way from being prepared to completely soak up the Education 4.0 paradigm. The beginning point for the journey towards the vision might be extraordinary, yet even the top universities, research and teaching institutes have a fair distance to go where the fundamental tenets core transformation agenda remains similar.
REFERENCES


