

## **Education 4.0 and Indian Higher Education English Classrooms - An Explorative Study**

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### **Abstract**

The social shifts along with economic and technological discoveries have led to the transformation of education across centuries. Ever changing archetypes and milieu have transformed learners' motivation and strategies along with their career expectations. This emphasizes the need for comprehensive education ecosystems and the need for an improved set up as the backbone of effective education systems. With technology, the present day educational system no doubt has reached colossal growth in every aspect. The educational theories have been modified, learning and learner strategies altered and a variety of new generation learning methodologies have been added across the globe. The alpha generation is already in school and unfortunately they are taught the 21<sup>st</sup> century skills in 20<sup>th</sup> century classrooms. In spite of the 21<sup>st</sup> century skills being formally adopted at policy level in the Indian education system, the implementation remains debatable. Keeping this in mind, this paper is an explorative study on education 4.0 and the English classrooms in India. It aims to explore the question, how ready are the Indian higher education English classrooms to harness the potential of a digitally-fuelled world along with its implications.

**Keywords:** New Generation, 21<sup>st</sup> Century Skills, Education 4.0, digital natives

## **Introduction**

Digital natives have changed the landscape of education. The new-age literacy is predominantly supported by the media and internet technologies. Innumerable vistas of opportunities are available across the globe and such new avenues require skill sets that are ahead of times and hence it becomes mandatory for the higher education institutes (HEIs) to detach itself from the traditional teaching methodologies of the 19<sup>th</sup> century. Later, the 20<sup>th</sup> century classrooms were confined within the four walls and print remained as the primary vehicle of the teaching learning process. This classroom was entirely based upon the requirements for the industrial age of the 19<sup>th</sup> century and through standardized tests, it prepared students for a job market of that period only. The latest 21<sup>st</sup> century classrooms are future ready and student centered with focus on higher order thinking skills which is indeed the pedestal for education 4.0. Hence, it requires a paradigm shift to focus on personalized and flexible learning which are the signposts towards education 4.0. This accelerated momentum from education 3.0 to education 4.0 has happened in just years and not in centuries unlike education 1.0 and 2.0. Keeping all this in mind, this paper traces the evolution of education over the years, with focus on the growth of English in India over the centuries. It attempts to bring forward the need and suggests plausible solutions to successfully prepare for the upcoming education 4.0 in every classroom.

## **Evolution of Education**

### **Education 1.0**

In the early stage, namely during the ancient and middle ages, education was restricted to a small group of students. It comprised of personalized education, low literacy rates and informal methods of education. Later, this gradually was replaced with formal schools. It was a one way process and gained popularity with the advent of informal education in India, China, Israel, Rome and Greece and was focused on teaching only the elite population and male students.

Later, education of girls gained prominence and the concept of formal education governed by priests developed. In the middle Ages, education transformed with the dominance of religion in Western Europe and India. Several priests from churches were appointed to provide quality education and the period saw the emergence of various scholars. A formal

system of higher education started developing with countries such as Japan, China, India, the UK, Korea and France starting to build universities and colleges.

### **Education 2.0**

The invention of the printing press brought in a tremendous shift in the traditional education system. The printing press formulated a culture of scientific inquiry. Also, Renaissance and Reformation led to scientific innovations and development of the education ecosystem globally. Educational institutes gained prominence. In countries like India, Japan, Europe, vocational education was in vogue. More focus was on contemporary learning than reading of classics of Greek and Latin. Hence, this was a significant wave that transformed the field of education across nations.

### **Education 3.0**

Unlike education 1.0 and 2.0, education 3.0 was a massive breakthrough in every aspect of life. Internet stormed the world with innovations and explorations. As a result of Education 3.0, there has been a massive increase in global demand for education, the role of a teacher has changed from that of an instructor to a facilitator, and technology has become universal for content delivery in various online and distance learning programs. Irrespective of the technological advancements, learning methods have remained unchanged. This platform-enabled learning drove exponential growth in the education technology (edtech).

### **Education 4.0**

This being an epoch of technology, creativity has become sine qua non in daily activities. With smartphone classrooms, online exams and robotic house help, education 4.0 puts the learner at the centre of the ecosystem and empowers the learners' with focus on the outcome. This aids in personalized learning and focuses on addressing an individual's goal. Emerging technologies including Social Media, Mobile, Analytics and Cloud Computing (SMAC) are impacting all areas of education. We are heading towards a future wherein almost half of today's job will disappear and new generation opportunities that focuses on virtual and augmented reality, smart machines, 3D and beyond, robotics, global connectivity, Artificial Intelligence (AI) and many

more based on Internet of Things (IoT) will flourish as lucrative careers. For this, the constant demand of new skills will be a great challenge to handle if the present generation is not prepared at higher education.

Figure 1 given below is a pictorial representation of the characteristics of Education 4.0 in higher education.

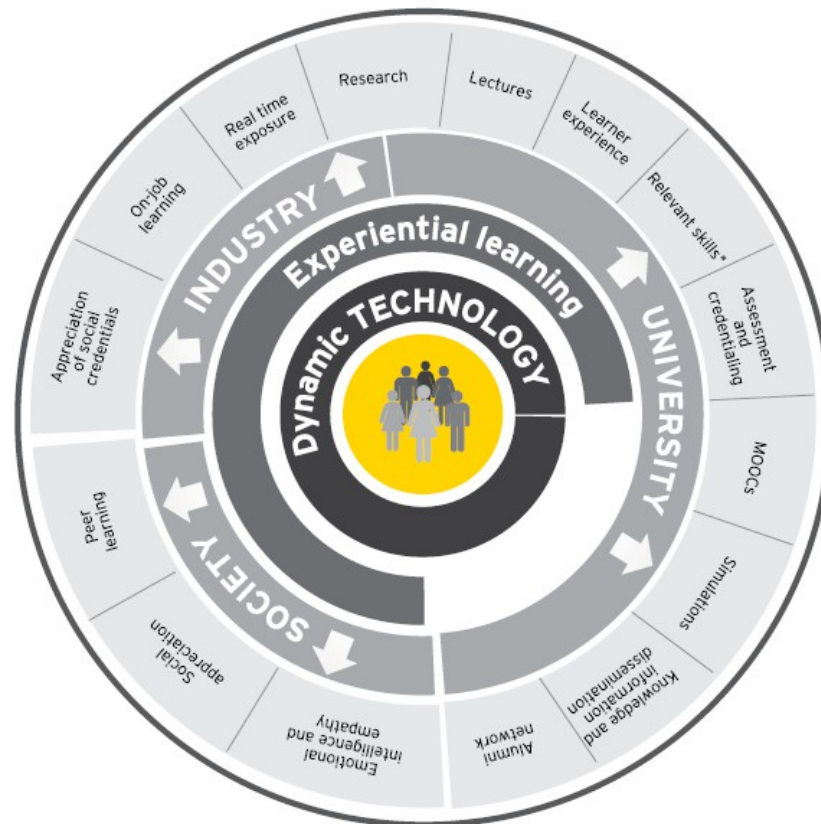


Fig. 1: Leapfrogging to Education 4.0: Students at the core

As presented, the focus of Education 4.0 is “experiential learning” by the individual; it is built around student centered teaching process that is efficiently guided by dynamic technology. Experiential learning is defined as learning through firsthand knowledge outside of a traditional classroom setting, mainly in real time situations such as research, field trips and others. Learning is maximized at university and it happens simultaneously with peers, industry and society.

### Evolution of English in India

English in India is a lingua franca. It plays a huge role in the inter-state and intrastate communication. Every conversation, be it domestic, educational, business, legal, financial, etc. is incomplete without English. This status of English in India dates back to centuries. Being under the colonial rule, Indians were left with no other option but to learn the language that symbolized for them higher intellect and better opportunities. The developmental history of teaching of English in India has a great lineage. During the Earliest Period (1765-1813), the British traders started to teach English and helped in the opening of the institutions of classical learning, namely Calcutta Madarssah (1781) and Benaras Sanskrit College (1791). In 1813, the Charter of East India Company made a great difference in Indian Education. Private institutions turned as commercial learning hub of English. However, Raja Ram Mohan Roy came forward to introduce western scientific education through English opposing oriental education.

Following this, Lord Macaulay worked hard to dominate the Indian people with the influence of English by providing employment to people with good language. This created a need for learning English and conversing fluently to end in a government job. In spite of the difficulties faced by the student community to master the alien language, the need and pressure in mastering grew rapidly and many universities and colleges began to offer English Literature courses. The system of English education founded on English literature continued till the independence. Later, during 1882, the Indian Education Commission and others expressed their concern on the neglect of vernacular languages in India. Efforts were made after independence to retain Hindi as the official language of the country. Today, irrespective of the constitution claiming Hindi as the official language, English remains at the centre stage for both formal and informal communication. After India's independence, English became the symbol of superiority in Indian society. Parents craved for English medium education for their children and it resulted in the rapid growth of English medium educational institutions. Global connectivity today has made English the quintessential medium of communication. Here, it becomes necessary and mandatory to employ newer technologies and latest methodologies in walking towards education 4.0 especially in English language classrooms because English across the globe is the language of every tongue irrespective of nationalities, and Indians take the centre seat for their language proficiency.

## **ICT Policies**

The 2030 agenda for Sustainable Development Goal 4 (SDG4) adopted by UNESCO focuses on education as the key factor for the success of all of its 17 sustainable developmental goals. UNESCO policy clearly states that, “Information and communication technology (ICT) can complement, enrich and transform education for the better.” It urges on education policy makers of almost all countries to facilitate universal access to education. UNESCO insists on building ICT integrated educational premises and drafts national policies accordingly. If needed, UNESCO assures help to governments and other stakeholders to incorporate technology for learning. It seeks to bridge the digital divide in higher education domain and focus on empowerment of the population who has hitherto remained untouched by the digital revolution. It plans to focus on appropriate pedagogy for e-learning, providing facility of performing experiments through virtual laboratories, on-line testing and certification, on-line availability of teachers to guide and mentor learners, utilization of available Education Satellite (EduSAT) and direct to home platforms, training and empowerment of teachers to effectively use the new method of teaching learning. Irrespective of such efforts and possibilities, the educational sector across most of the countries is finding it challenging to implement such innovative measures and the reason remains unknown.

In India, The National Mission on Education through Information and Communication Technology (NMEICT) is a massive attempt in higher education system to reinforce the potential of ICT, in the teaching - learning process. The NMEICT is based on its cardinal principles - access, equity and quality; it aims to provide connectivity to all colleges and universities with low cost and affordable computing devices. It promotes e-learning and insists on e-content generation across disciplines. Unfortunately, the use and implementation of technology in the Indian higher education system remains only in policies and documents. Hence, the system fails to impart exposure to the newer generation as a result of which they fail as thinkers and decision makers in the international arena. Such glitches in the higher education system results in brain drain and hence the creamy layer of the Indian students look out for universities outside India. The higher order thinking skills are completely sabotaged irrespective of the demand for certifications and quick credentials or qualifications which aren't really credible in the Indian higher education. In turn, such qualifications are fully supported by higher education institutes of the other countries.

It is a saddening truth that India, being a forerunner in the global job market, fails to implement an education system with special focus on the 21<sup>st</sup> century skills and is still caught inside the 20<sup>th</sup> century classroom. The 21<sup>st</sup> century skills as listed by the glossary of education reform is an umbrella term for knowledge, skills, and other character traits such as critical thinking, problem solving, collaboration, ICT literacy, global awareness and many others. Reports claim that Indian universities are not listed in the top 100 universities and unfortunately only 7 of the Indian leading education institutions rank among the 500 global universities for higher education. This is because of the nil priority on research based curriculum towards educating the digital natives. Numerous reports such as the QS World University Rankings, 2015-16; Eleventh Five Year Plan Chapter on Higher and Technical Education, Human Development Report, 2014 claims the pathetic state of Indian higher education system in the global arena irrespective of the influence of technology driven western countries. This being an era of the learners who no more bear the profile of a traditional learner, new education ecosystem needs to be customized and made flexible according to the learners need and demands. This is given a miss in most of Indian universities. However, a few universities and autonomous institutions have come forward to experiment any time anywhere learning but it will take time to implement such path breaking efforts towards education 4.0

### **Education 4.0 and English Classrooms in India**

Fortunately, English classrooms in India have added excitement to the entire process of language learning using videos, podcasts and power points. Appropriate use of available technology in the second language classrooms has made a huge difference in language teaching in many parts of the nation. Of late, the field of English Language Teaching in India has incorporated innumerable technological advancements to impart learning to the millennial generation or Generation Y. The largest democratic nation serves as the homeland for technologically most advanced generation of learners. They are referred as Nexters, Baby Boom Echo Generation, Echo Boomers, Digital Natives, Generation Next, and Generation Me and now alpha generation. Such advanced classifications just don't add mere new terms to the dictionary, but they indeed add new psychological dimensions to the teaching-learning process. Technology Enhanced Language Learning (TELL), Computer Assisted Learning (CAI), Computer Assisted Language Assessment (CALA), Computer Assisted Language Learning (CALL) and off late



Mobile Assisted Language Learning (MALL) have replaced the traditional teaching methods in majority of the English classrooms. PowerPoints, prezi presentations, Ted EX talks, you tube videos, google classrooms, Edmodo and mobile apps, online questionnaires, surveys and assessments have added tints of technology to the English classrooms across India.

Keeping such advancements in mind, the English classrooms are flooded with innovative explorations for motivating the entire process of language learning. In higher education sector, Language labs have been instituted and implemented across institutions irrespective of other infrastructure failures. Such labs act as centers of learning for all levels of learners. Times have changed and language labs can no more be the only point of contact for technology driven language learning. In such a scenario, the role of teachers is reasonably challenging, as one has to sustain the interest of the ever-busy internet savvy students and assure transfer of learning.

With every multinational company having its base in India, it becomes a priority for Indian educational institutes to impart English language efficiently. Today institutes are reinventing to teach English using every multimedia option available such as emails, blogs, podcasts, powtoons, digital libraries, Massive Open Online Courses (MOOCs), virtual classrooms, i-Pads and smart phones. These facilities are made available by institutions those can sustain the financial burden associated with it. Such unnecessary hiccups can be avoided if government provides assistance and funding for setting up digitally equipped language centers available for learning. Numerable policies have been drafted and implemented towards ICT enabled learning curriculum but unfortunately they face road blocks in the process of implementation. In higher education today, MOOCs are made mandatory for a group of learners; on the other hand there exists a massive population of both learners and teachers who absolutely have no idea about MOOCs. This is a failure of the central system and its association with the state system that exists in India. In other Asian countries, technology has revolutionized the higher education sectors; regular classrooms are being flipped and blended to motivate and sustain the interest of the learners. E-learning is maximized and digitally the classrooms are much advanced with even student attendance going online. In such regards, the Indian higher education sector is far beyond. The need of the hour is technically rich infrastructure to stand tall in the world arena. Unlike India; US, Germany, China and many other countries are attracting

foreign students to improve international relationships and in this race India fails miserably with poor higher education ecosystem.

On convergence of language learning with technology, improved motivation and innovation will act as the impetus for the shift towards collaboration, flexibility and customization of higher education which are indeed the key terms of education 4.0. Hence, this is the time for the higher education system to move towards imparting education with technology supported skills to grab the newer opportunities if not they may sooner or later flourish or sink in the traditional method and perish. As pointed out in the article, “State-focused roadmap to India’s “Vision 2030”:

The universities need to break away from the process driven, technology supported mass teaching systems to a new way of education that appreciates the personalization of learning. Flexible learning paths focus on imparting life skills, student centric learning methods and use of technology is bringing in the concept of “Education 4.0” (5).

### **Challenges and Plausible Solutions**

For the successful walk towards education 4.0, realization of challenges for the paradigm shift towards education 4.0 is the need of the hour in Indian higher education. There needs to be a vision and mission in achieving the desired outcome. Efforts should be taken to fill the void in terms of analytical capabilities and data security. India, being the most populated country in the world faces and will face issues pertaining to data security in the process of digitalization. The march towards digital India is already in action and the risk associated with standardization and integration of technology data remains a major concern. Nurturing a multidimensional digital culture in higher education will be possible through coordinated efforts from the teacher fraternity. It is to be noted that institutions upgrade the system to best suit the needs of technology integrated teaching learning. Cyber security and other specializations related to it should be taught at higher educational institutions. Teacher should be technically trained to teach the digital natives. Today’s teaching needs to shift gears towards flexibility and long term retention. Refresher courses on flipped and blended learning should be made available to the teachers at regular intervals. More awareness on synchronous and asynchronous learning platforms should be maximized. Collaborative learning should be made the key focus and curriculum should be open to students across countries and culture. This can be made possible through a system that supports multiple entry and exits. Industry specific employability skills

should be integrated within language learning and higher educations. Higher educational institutions should develop a quest towards education 4.0 and allow better collaborations across industry and academia through on the job trainings. Governments should take efforts to ensure that higher educational institutions are guaranteed diversified revenue stream and become autonomous to explore sustainable business models. On the whole, higher education system should aim to design a global outlook and make possible interoperability of learning outcomes in its approach to sustain its place towards reaching education 4.0. This is the time to capitalize on technology-driven objectives and outcomes for the curriculum.

## **Conclusion**

Teachers, administrators, policy makers, and other academicians who belong to the group of technology immigrants should work towards developing a better framework for the digital natives. Education 4.0 ecosystem needs population with digital competences and this can be achieved only through an upgraded higher education system. Hence, due credit should be given to online learning and this medium of learning should be allowed to be a sustainable medium of learning. The unnecessary fear of a teacher being replaced by technology should be removed and it should be assured aloud that teachers will remain as facilitators of learning in the era of education 4.0. The role of teachers will keep changing because change is the only constant in education 4.0.

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