ITFT College

CARPE DIEM

CHANDIGARH - INDIA

Roadmap on

TRICITY DIGITAL EMPOWERMENT

Released by

H.E. V P SINGH BADNORE

Hon'ble Governor Punjab
& Administrator Chandigarh (U.T.)

Innovative Conference for Tricity

(Chandigarh - Mohali - Panchkula) on

DIGITAL INDIA - HIGHWAY FOR TRANSFORMING EDUCATION

Saturday, 29th April 2017, Chandigarh

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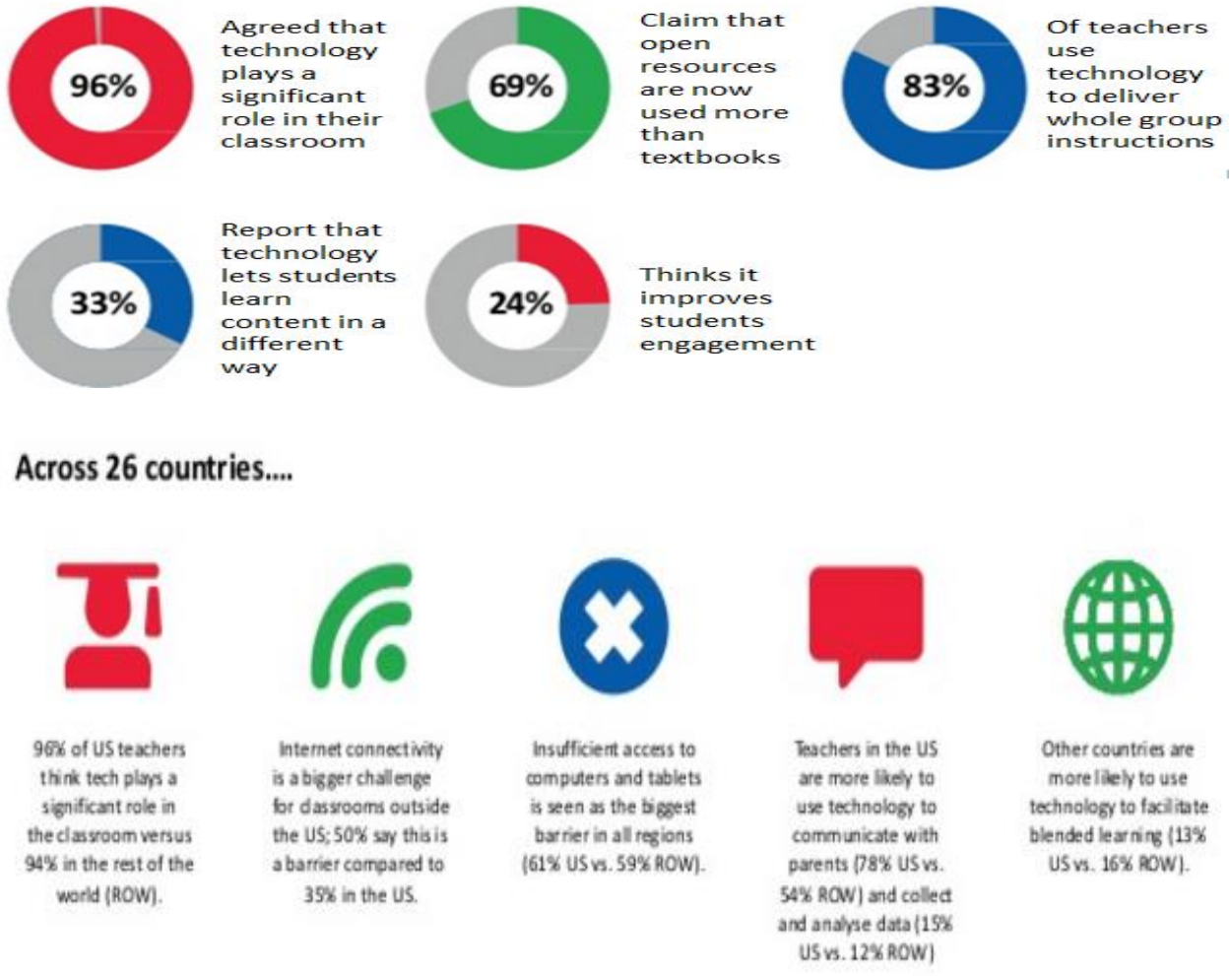
CHAPTER 1

GLOBAL ED-TECH SCENARIO

The subject of technology in education ranges in girth from the iPad and mobile technology to location based services, artificial intelligence, augmented reality and more. While technological advances and the implications of technology to add greater sophistication and depth to learning are fascinating, the most important question remains to be addressed in widespread discussion: How can technology be used to benefit education for the greatest number of people in the world and not just the privileged few?

Source: http://www.uopeople.edu/blog/technology-in-education-global-implications/

Digital education company TES Global surveyed over 3,500 global teachers from 26 countries in 2015 to understand how they are using technology and ed-tech in the classroom. We found that tech in the classroom is now universal.



5 BENEFITS OF TECH IN ED

Technology in the field of education can be a powerful tool.

1. FUTURE ORIENTED

The future is all about technology and multi-screening. Education can't lag behind.

2. LEARNING BECOMES INTERESTING

It engages and challanges students with brand new and interactive methods.

3. IMPROVES SKILLS

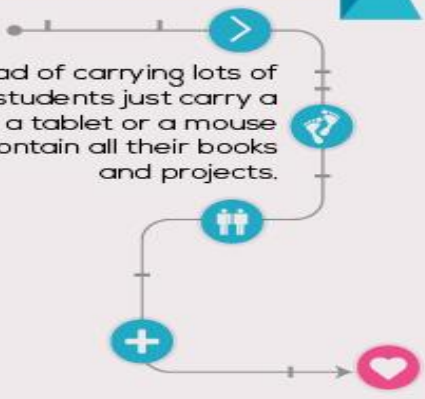
4. INCREASES COLLABORATION

Students can work and collaborate with people in other locations.

Distance learnes can join online communties.

5. REDUCES WEIGHT

Instead of carrying lots of books, students just carry a laptop, a tablet or a mouse which contain all their books and projects.



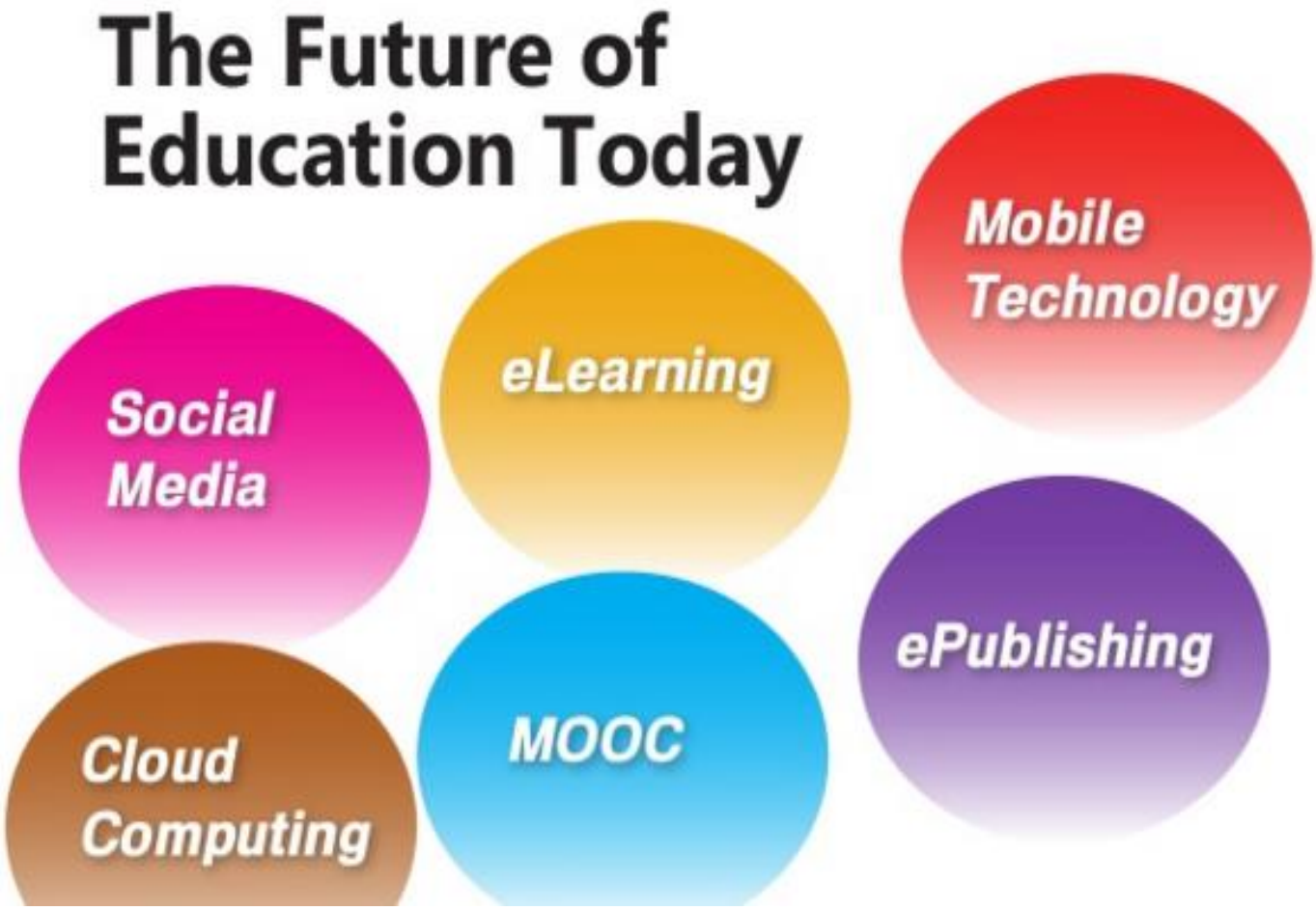
Source:http://dailyedventures.com/index.php/2014/02/07/the-importance-of-technology-in-education/4

Education Technology (Ed Tech) and Smart Classrooms Market worth 93.76 Billion USD by 2020

The ease of use and teaching offered by the Ed Tech and smart classroom technology is the chief factor fueling its demand. Besides this, the market is also gaining from the rising technological awareness and expanding internet penetration across the globe. Furthermore, with countries adopting digital and e-learning education solutions in order to promote literacy among masses, the demand for Ed Tech and smart classroom will increase in the near future.

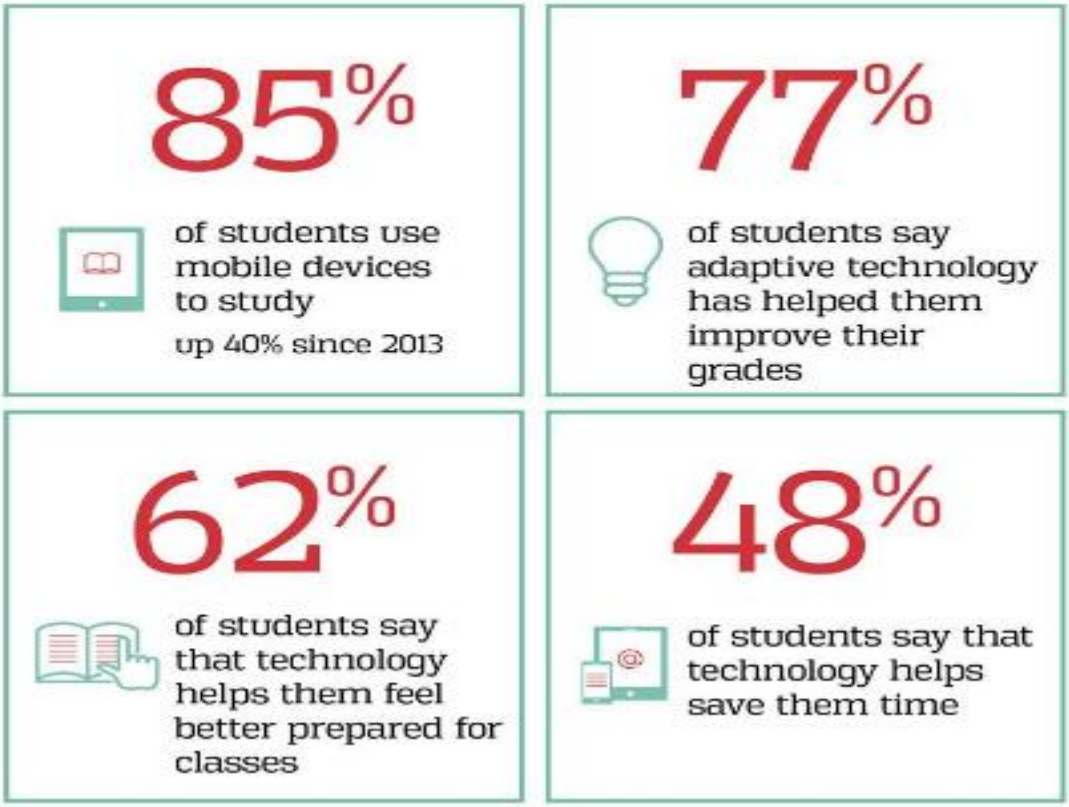
Despite the overall opportunities for the global education technology market being favorable, high initial investment incurred on setting up a smart classroom and lack of awareness in emerging and under-developed nations are major challenges for this market. Nevertheless, with the implementation of government programs to promote education across emerging nations will augur well for the global education technology and smart classroom market. Hence during the coming years, opportunities in Latin America and Asia Pacific will ripen thereby enabling the demand for Ed Tech and smart classroom technologies to spike higher.

Source:http://www.marketsandmarkets.com/PressReleases/educational-technology-ed-tech.asp



"When technology integration is at its best, a child or a teacher doesn't stop to think that he or she is using a tech tool – it's second nature."

According to a McGraw-Hill Education survey conducted on nearly 17,000 college students aged 18+ who are currently enrolled in educational institutions, four reasons why digital learning will surge in the future are given below:



From their Back-to-School 2015 Survey of more than 2,500 adults we learned that over 91% of parents feel digital learning should be personalized and about 75% think today's classrooms should focus on adaptive learning. It's our goal to develop products that adapt to students' individual learning styles to provide a deeply personalized learning experience.

Source: https://www.mheducation.com/blog/thought-leadership/four-reasons-why-digital-learning-will-surge-in-2016.html#

Asian Ed- Tech Scenario

Asia will be fueling the next leg of growth in EdTech. The education ecosystems are addressing specific market failures with their own solutions that offer deeper local context, user interface, and lower cost structures that can be met via e- learning.

Asia is the fastest growing e-learning market in the world with outright leadership in a number of significant areas including game based learning and web social based learning.

Asia is a great fit for courses offered via Internet. In general, Asia is the fastest growing landmass and with China having the world's largest population makes it the largest captive place for K-12 audiences; the amount of prospective students alone is staggering and that's China alone. As a whole, "Asia is the market for educational technology".

According to the University World News, the growth in the Asian EdTech industry is above 30 percent. There is also government support across Asia; countries are working on incentives, such as high-speed networks, and a larger push for placing curricula online.

Asian startups are leading the way in the edtech platforms being used. KnowRe, Brainly, mana.bo, Taamkru and many more Asia based edtech startups that have been making a mark in industry and are gaining attraction around the globe. There are a lot more startups from Asia that are helping the education sector do wonders like PaGamO, Delta Viet, kungfu Math, Zenius and ClasDos.

Vast market place is the reason behind top venture capital firms investing in Asian EdTech sector. Top VC firms are showing interest in EdTech sector and that signifies the potential it holds.

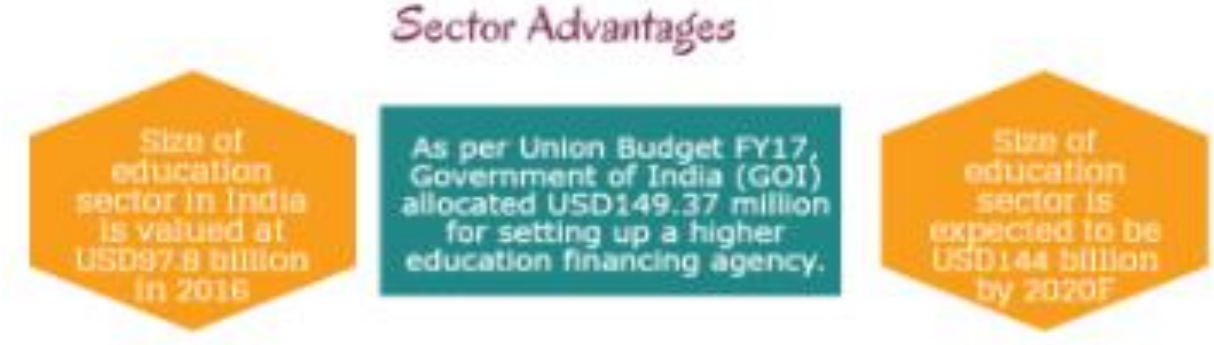
Source: http://edtechreview.in/trends-insights/insights/2544-asia-edtech-companies-accelerators

CHAPTER 2

INDIAN EDUCATION SCENARIO

India holds an important place in the global education industry. The country has more than 1.4 million schools with over 227 million students enrolled and more than 36,000 higher education institutes. India has one of the largest higher education systems in the world. However, there is still a lot of potential for further development in the education system.

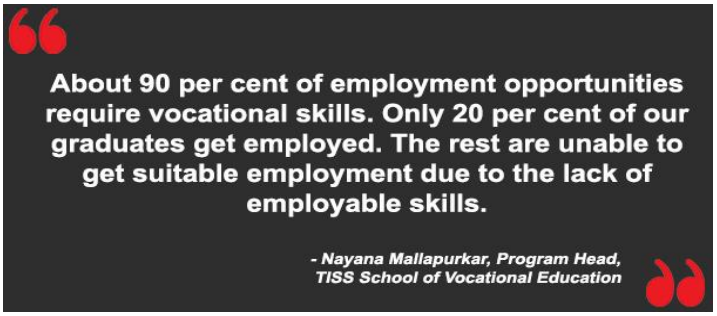
India has become the second largest market for e-learning after the US. The sector is currently pegged at US$ 2-3 billion, and is expected to touch US$ 40 billion by 2017. The distance education market in India is expected to grow at a Compound Annual Growth Rate (CAGR) of around 34 per cent# during 2013-14 to 2017-18. Moreover, the aim of the government to raise its current gross enrolment ratio to 30 per cent by 2020 will also boost the growth of the distance education in India.



Market Size

The education sector in India is poised to witness major growth in the years to come as India will have world's largest tertiary-age population and second largest graduate talent pipeline globally by the end of 2020. In FY 2015-16, the education market was worth about US$ 100 billion and is expected to reach US$ 116.4 billion in FY 2016-17. Currently, higher education contributes 59.7 per cent of the market size, school education 38.1 per cent, pre-school segment 1.6 per cent, and technology and multi-media the remaining 0.6 per cent.

Higher education system in India has undergone rapid expansion. Currently, India's higher education system is the largest in the world enrolling over 70 million students while in less than two decades, India has managed to create additional capacity for over 40 million students. At present, higher education sector witnesses spending of over Rs 46,200 crore (US$ 6.93 billion), and it is expected to grow at an average annual rate of over 18 per cent to reach Rs 232,500 crore (US$ 34.87 billion) in next years.



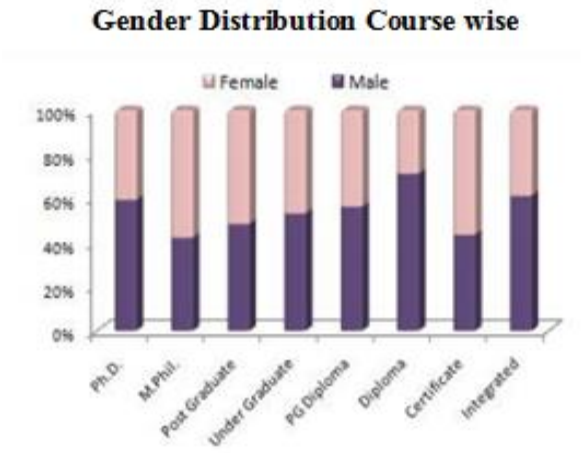
Source: https://www.ibef.org/industry/education-sector-india.aspx

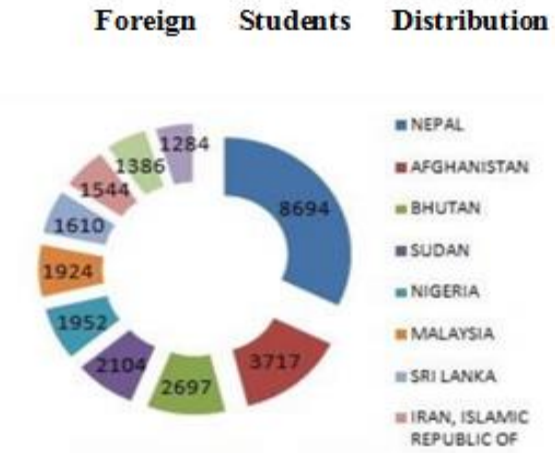
The Central government plans to disburse US$ 1 billion to states for introducing skill development initiatives. As on November 2016, Ministry of Skill Development and Entrepreneurship launched

Pradhan Mantri YUVA Yojana, at a cost of US$ 74.68 million for providing entrepreneurship education and training to students in the country.

India has one of the largest networks of higher education institutions in the world with 666 universities and 39,671 colleges. It is also the third largest in terms of education enrolment with over 21.5 million enrolments per year. The private education sector which was valued at an estimated US$ 96 billion in 2015 is estimated to reach US$ 133 billion by 2020.

The Government of India has allowed 100 per cent Foreign Direct Investment (FDI) in the education sector through the automatic route since 2002. In the year 2015 government is expected to launch New Education Policy to address the changing dynamics in the education industry of the country as per the requirement of the population.





All State Education Report 2016: KEY FINDINGS

■ At the all India level, enrollment increased for all age groups between 2014 and 2016.

■ Enrollment for the age group 6-14 has been 96% or above since 2009. This proportion increased from 96.7% in 2014 to 96.9% in 2016.

■ Enrollment for the age group 15-16 has also improved for both boys and girls, rising from 83.4% in 2014 to 84.7% in 2016.

■ However, in some states, the fraction of out of school children (age 6-14) has increased between 2014 and 2016. These include Madhya Pradesh (from 3.4% to 4.4%), Chhattisgarh (from 2% to 2.8%), and Uttar Pradesh (from 4.9% to 5.3%).

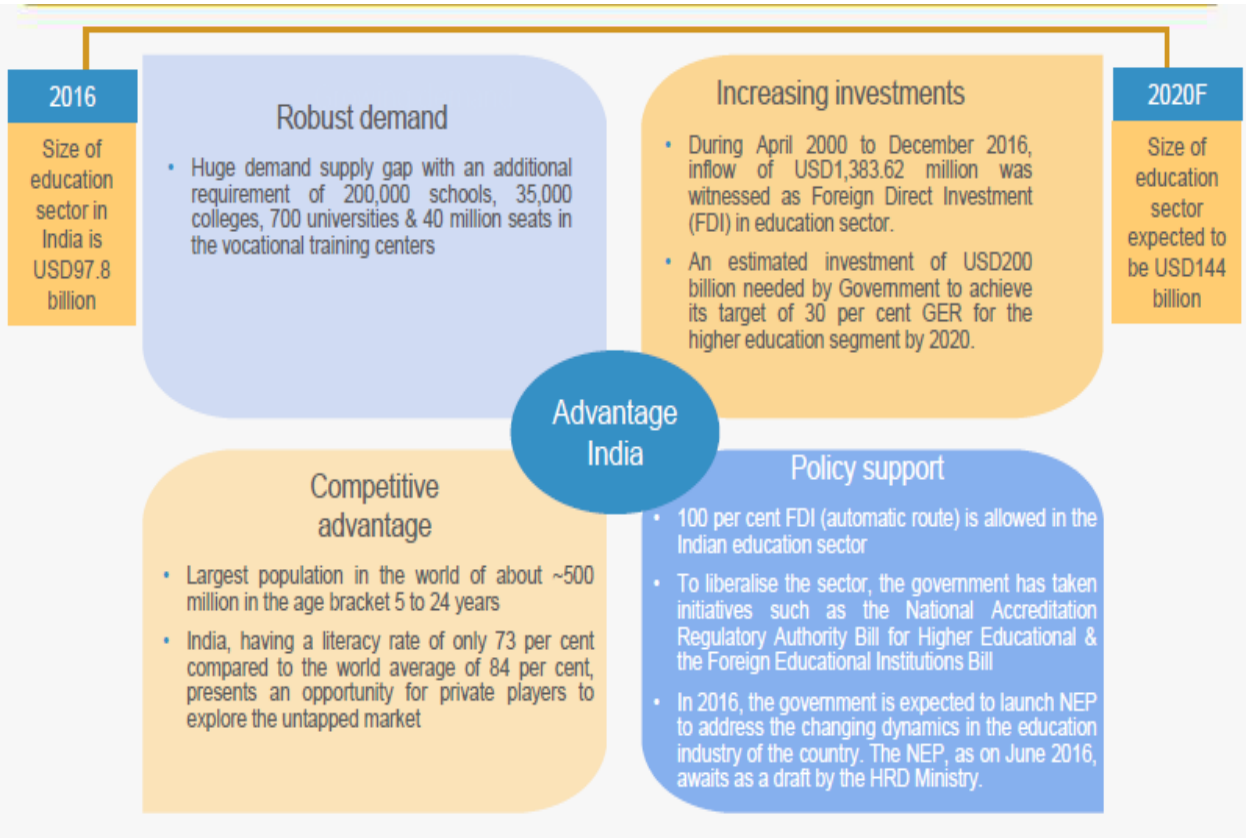
■ In some states the proportion of girls (age group 11-14) out of school remains greater than 8%. These states are Rajasthan (9.7%) and Uttar Pradesh (9.9%). Joining them in 2016 is Madhya Pradesh (8.5%). No increase in private school enrollment between 2014 and 2016.

■ At the all India level, the proportion of children (age 6-14) enrolled in private schools is almost unchanged at 30.5% in 2016, as compared to 30.8% in 2014.

■ The gender gap in private school enrollment has decreased slightly in both the 7-10 and the 11-14 age group. In 2014, among children age 11-14, the gap between boys' and girls' enrollment in private school was 7.6 percentage points. In 2016, this gap had decreased to 6.9 percentage points.

■ Two states show significant increases in government school enrollment relative to 2014 levels. In Kerala, the proportion of children (age 11-14) enrolled in government school increased from 40.6% in 2014 to 49.9% in 2016. In Gujarat, this proportion increased from 79.2% in 2014 to 86% in 2016.

Source: Eleventh Annual Status of Education Report (ASER 2016) released in New Delhi, 18 January 2017



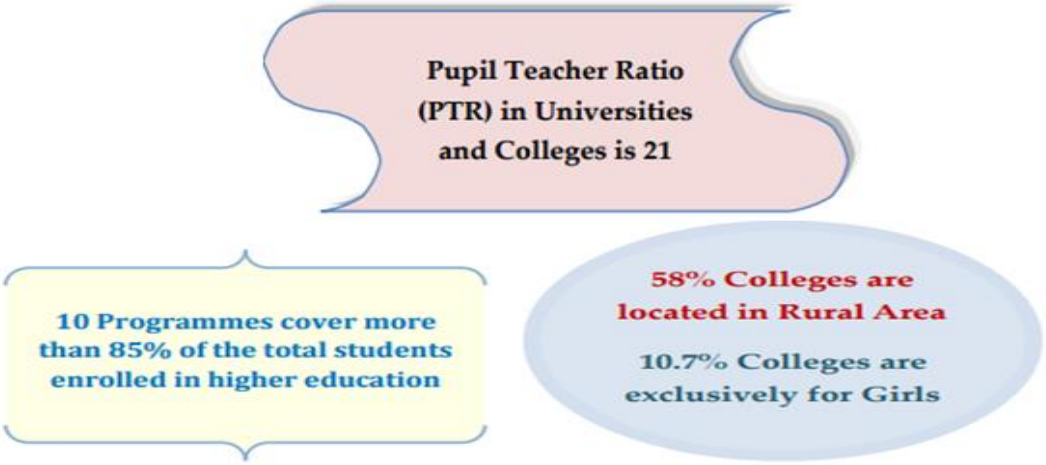
Apex Educational Organisations

1) **National Council of Educational Research and Training (NCERT)**: The National Council of Educational Research and Training (NCERT) was set up by Government of India in 1961 as an autonomous organisation registered under Societies Registration Act (Act XXI of 1860) to advise and assist the Ministry of Human Resource Development, Government of India and Departments of Education in States/ UTs .
2) **National Council of Teacher Education (NCTE)**: The National Council for Teacher Education, in its previous status since 1973, was an advisory body for the Central and State Governments on all matters pertaining to teacher education, with its Secretariat in the

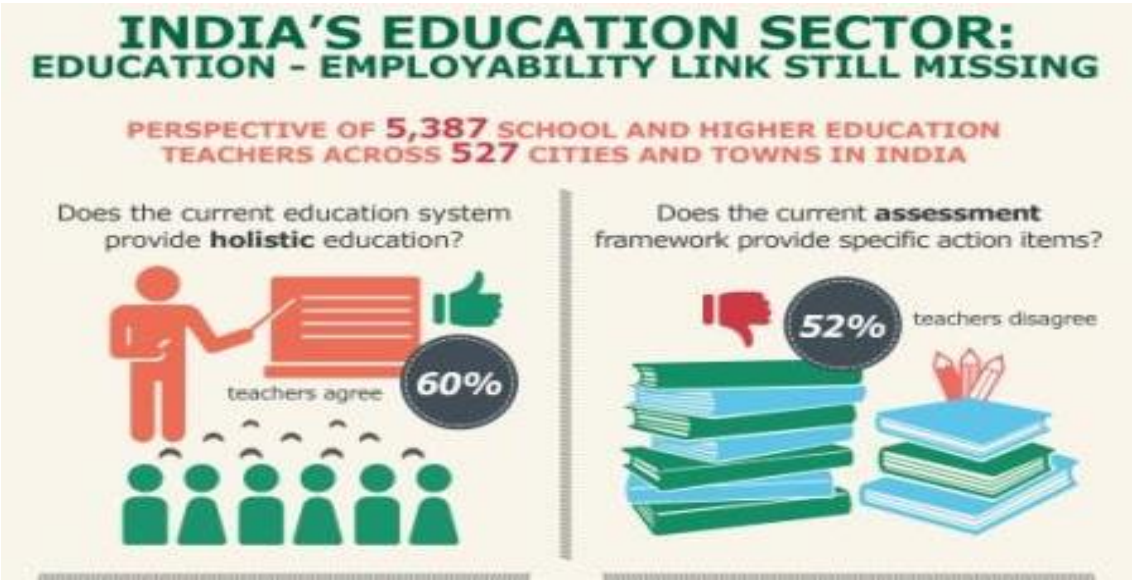
Department of Teacher Education of the National Council of Educational Research and Training (NCERT).

3) **National University of Educational Planning and Administration (NUEPA)**: NUEPA has its origin dating back to 1962 when the UNESCO established the Asian Regional Centre for Educational Planners, Administrators and Supervisors with its nomenclature changing to Asian Institute of Educational Planning and Administration (AIEPA) in 1965. The AIEPA was later merged with the National Staff College for Educational Planners and Administrators as its Asian Programmes Division in 1973.

Key facts and Figures oh Higher Education for 2015-16

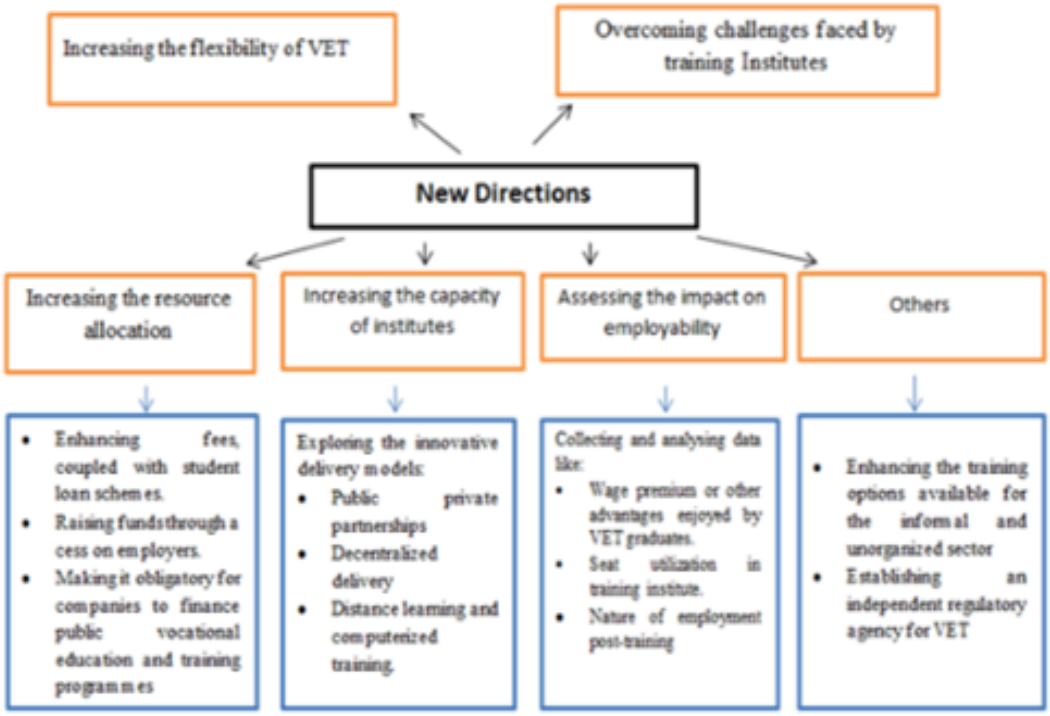


Source: http://aishe.nic.in/aishe/viewDocument.action?documentId=206



Source:http://www.indiaeducationreview.com/features/indian-students-educated-not-employment-ready-pearson-voice-teacher-survey-2015

New directions for improvements



Source: http://blog.invocation.co.in/index.php/2015/05/24/need-for-vocationalisation-of-education-in-india/

Drivers of Education Demand by 2020

Demographics – by 2020, four countries (India, China, the US and Indonesia) will account for over 50 per cent of 18–22 year-olds globally; while China's 18–22 population is forecast to remain large at over 90 million in 2020, it is projected by the UN Population Division to fall by over 20 million over the next decade given the current number of 8–12 year-olds; Russia's 18–22 population is also projected to fall; the 18–22 populations in Nigeria, India, Ethiopia, Philippines and Pakistan are projected to grow by 3.9 million, 2.9 million, 1.9 million, 1.2 million and 0.9 million respectively over the next decade despite divergent projections across countries. Overall the global 18–22 age group population outlook is stable; but this will still mark a significant change from recent decades where the 18–22 age group expanded rapidly.

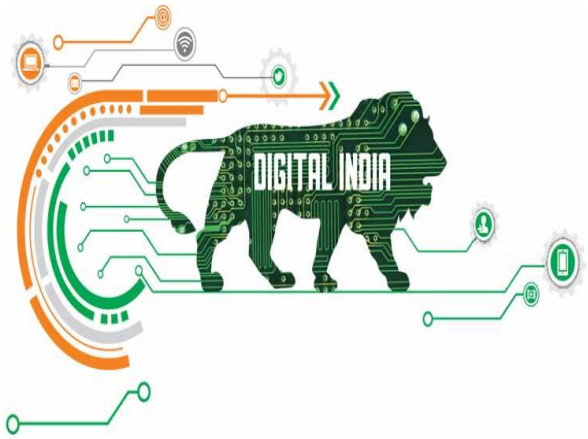
Economics – strong correlation between wealth (gross domestic product [GDP] per capita at purchasing power parity [PPP]) and tertiary enrolment, particularly up to US$10,000 annual household income; many of the emerging economies which performed strongly in the 2000s are forecast to continue growing strongly; both China and India are forecast to continue to be at the top of global growth league tables; following closely behind are economies such as Angola, Vietnam, Bangladesh, Sri Lanka, Indonesia, Nigeria, Pakistan, Malaysia and Brazil; consequently several emerging economies will be significantly wealthier in a decade, i.e. have higher PPP GDP per capita, even when measured in constant prices; but despite strong economic growth, many of the shortlisted economies will still have PPP GDP per capita below US$10,000 in 2020 – Nepal, Bangladesh, Pakistan, Nigeria, India, Morocco, Indonesia and Sri Lanka.

Source:https://www.britishcouncil.org/sites/default/files/the_shape_of_things_to_come_higher_education_global_trends_and_emerging_opportunities_to_2020.pdf

CHAPTER 3

DIGITAL EDUCATION LANDSCAPE IN INDIA

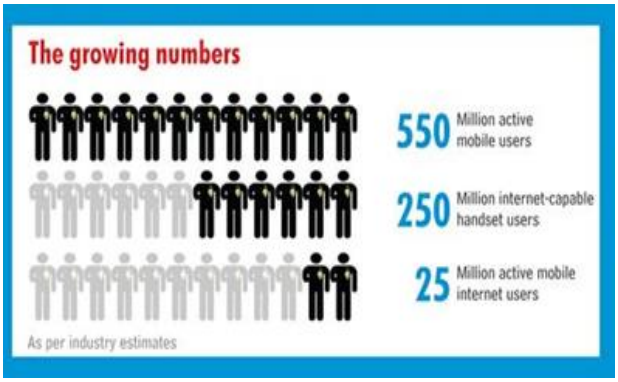
The process of imparting education has gone through a sea change if we look at the picture 10-20 years before now. Technology has taken over almost every field of our lives and the onset of online courses came as a path-breaker. No longer did one need to have access to schools, time or a lot of money! All one needed was a good internet connection and a computer.

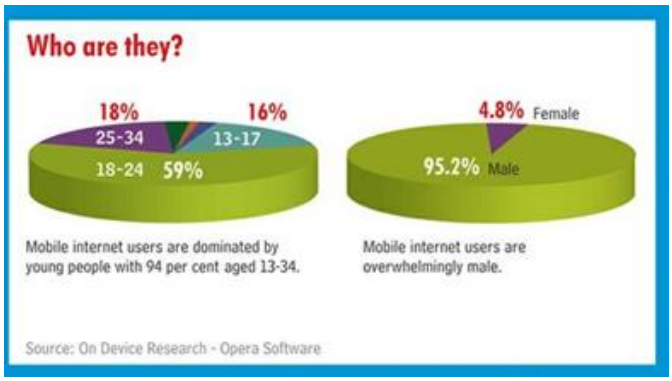


You could take up any course you liked (often held in partnership with major universities and institutes all over the world), learn at your own pace, discuss with your fellow virtual learners and contact experts online with any queries you might have. Many online learning websites also give you a valid certificate at a nominal fee.

Main reasons for the growth of digital education:

- With nearly a billion people on mobile phones and over 200 million mobiles connected to the internet, there has been a considerable rise in digital education.
- The use of best-in-class content, real-time learning and feedback methods, and personalised instructions has encouraged online education
- People are stepping towards digital learning as the ed-tech firms are providing them the comfort of 'live and interactive' anywhere education in digital format, through its online programmes
- These online courses are affordable and easily accessible
- Digital education aims to break the numerous barriers that are preventing people from receiving quality education in the physically bound classrooms





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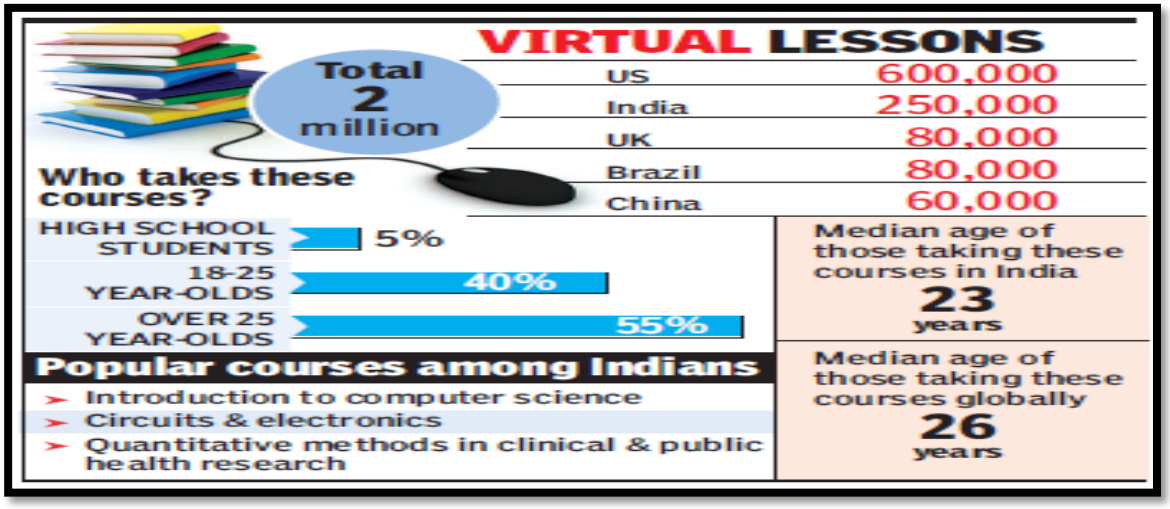
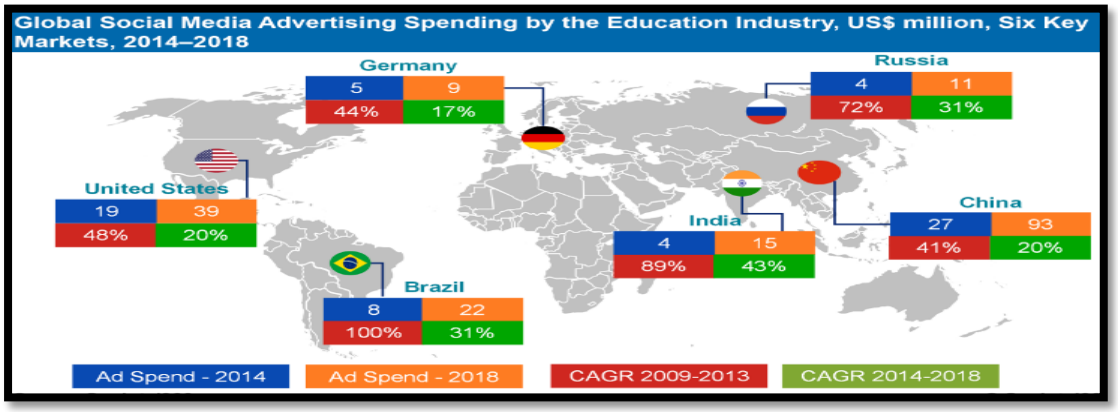


Source: http://www.jamshedsiddiqui.com/2014_03_01_archive.html

Benefits of Digital Education for Rural Areas

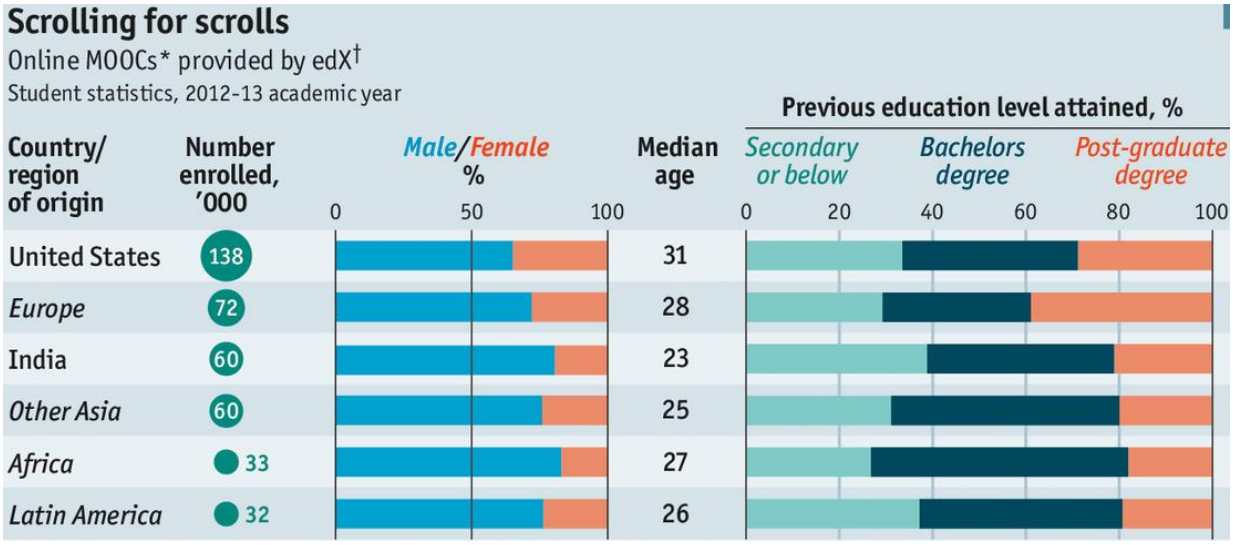
Digital education is breaking the numerous barriers that are preventing students in rural India from receiving quality education in the physically bound classrooms:

- 'Direct to Device' technology will empower these students to get quality education, anytime and anywhere
- It will enable them to save time, by having more freedom to move at their own pace as well as help them save money by avoiding "hidden costs" of education, like transportation fees (gas, parking fees)
- By not having to be at a certain class at a certain time, it will assist working students to not limit their work schedule, helping them to not lose on wages that they can potentially earn
- With the flexibility of online courses, students can conserve more hours and more money, enabling them to learn with a purpose and instil a sense of self-belief in them



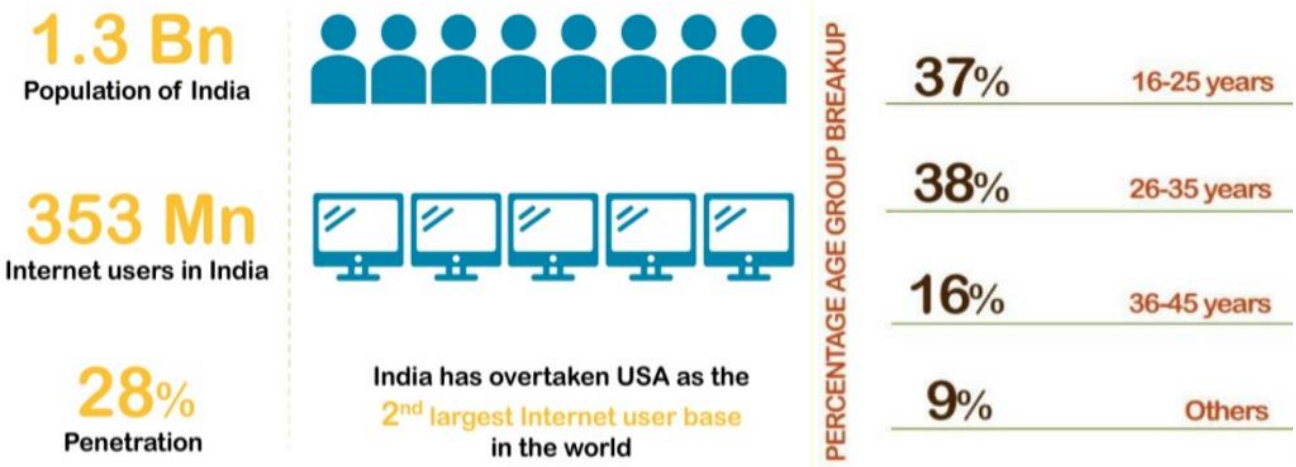
Source: http://blog.euromonitor.com/2014/06/the-top-5-trends-in-higher-education-globally.html

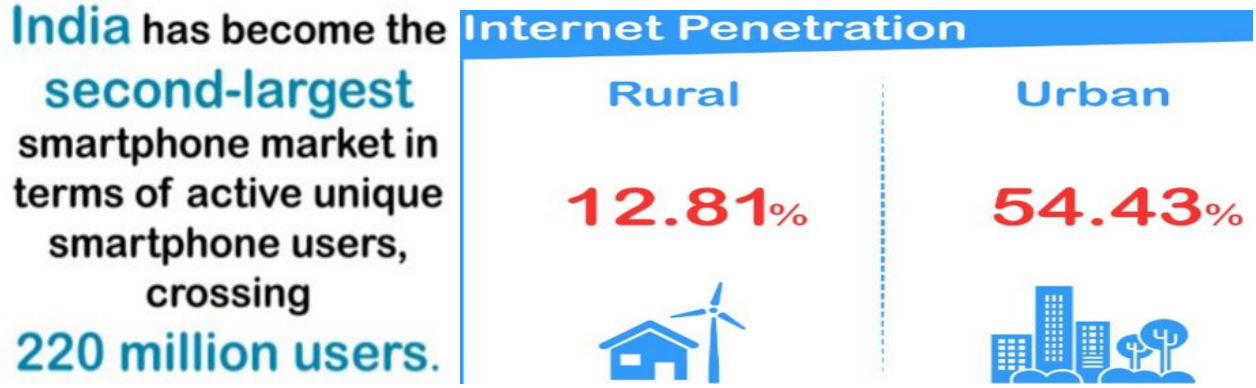
The first MOOC began life in Canada in 2008 as an online computing course. It was 2012, dubbed the "year of the MOOC", that generated vatic excitement about the idea. Three big MOOC-sters were launched: edX, a non-profit provider run by Harvard and the Massachusetts Institute of Technology (MIT); Coursera, partnered with Stanford University; and Udacity, a for-profit co-founded by Sebastian Thrun, who taught an online computing course at Stanford. The big three have so far provided courses to over 12m students. Just under one-third are Americans, but edX says nearly half its students come from developing countries. Coursera's new chief executive, Richard Levin, a former president of Yale University, plans an expansion focusing on Asia.



Source: http://www.economist.com/news/briefing/21605899-staid-higher-education-business-about-experience-welcome-earthquake-digital

Snapshot of Digital India- March 2016: A comprehensive report which provides interesting the stats and facts about India and also depicts the evolution of India on the digital front in the past six months. The report shares the following interesting insights:



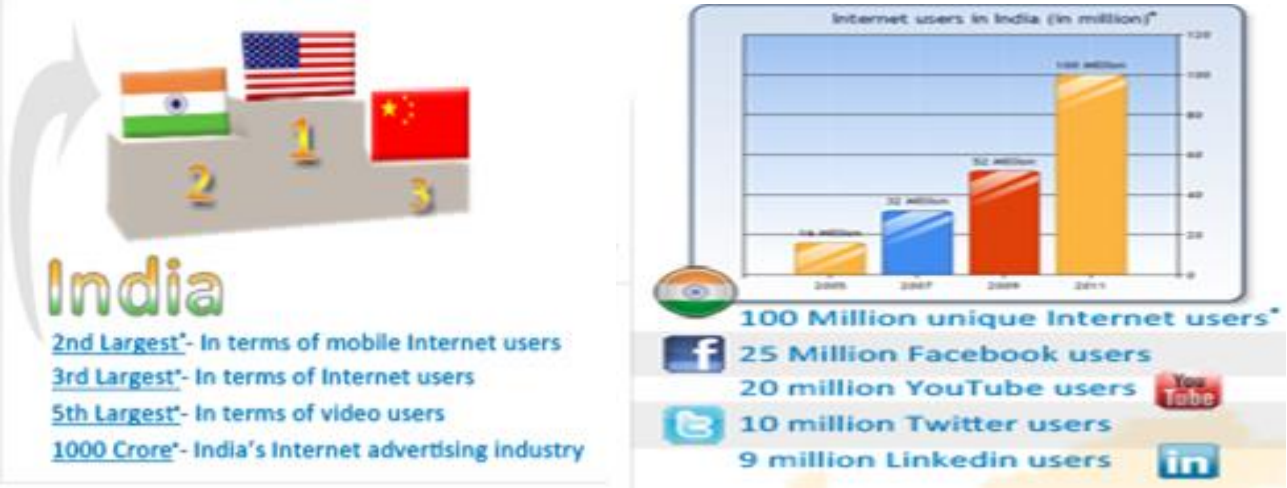


In India, where mobile penetration is nearing a billion people with over 200 million connected to the internet, and this expected to reach 550 million by 2018, the potential to digitally educate the masses seems very rich. In the past few years there has been a considerable rise in Digital and Live Virtual Classrooms at different levels of learning. With evolution of technologies such as cloud, data centers and virtualization there is huge potential for technology to be integrated with the Education Industry.

Besides its cost and access advantages, digital education comes as a win-win for all. Education institutions see the rapid rise in enrollments and added revenue. Students view this as a flexible option allowing them to study as per their time and pace. Teachers too find it convenient to prepare their learning plans well aided by technology. Teaching becomes a smoother experience with a perfect mesh of personalized packages having a blend of animations, gamiication and elaborate audio-visual effects.

Digital education is fun learning for all cadres and particularly effective for child learning as the innovative audio-video feature boosts the cognitive elements in a child's brain. The INFO-TAINMENT combination involved in digital learning makes it more practical, applicable and relatable to our life and surroundings in an interesting manner.

Source: http://www.avatargeneration.com/2012/12/adoption-rates-of-new-styles-of-k-12-teaching-infographic/

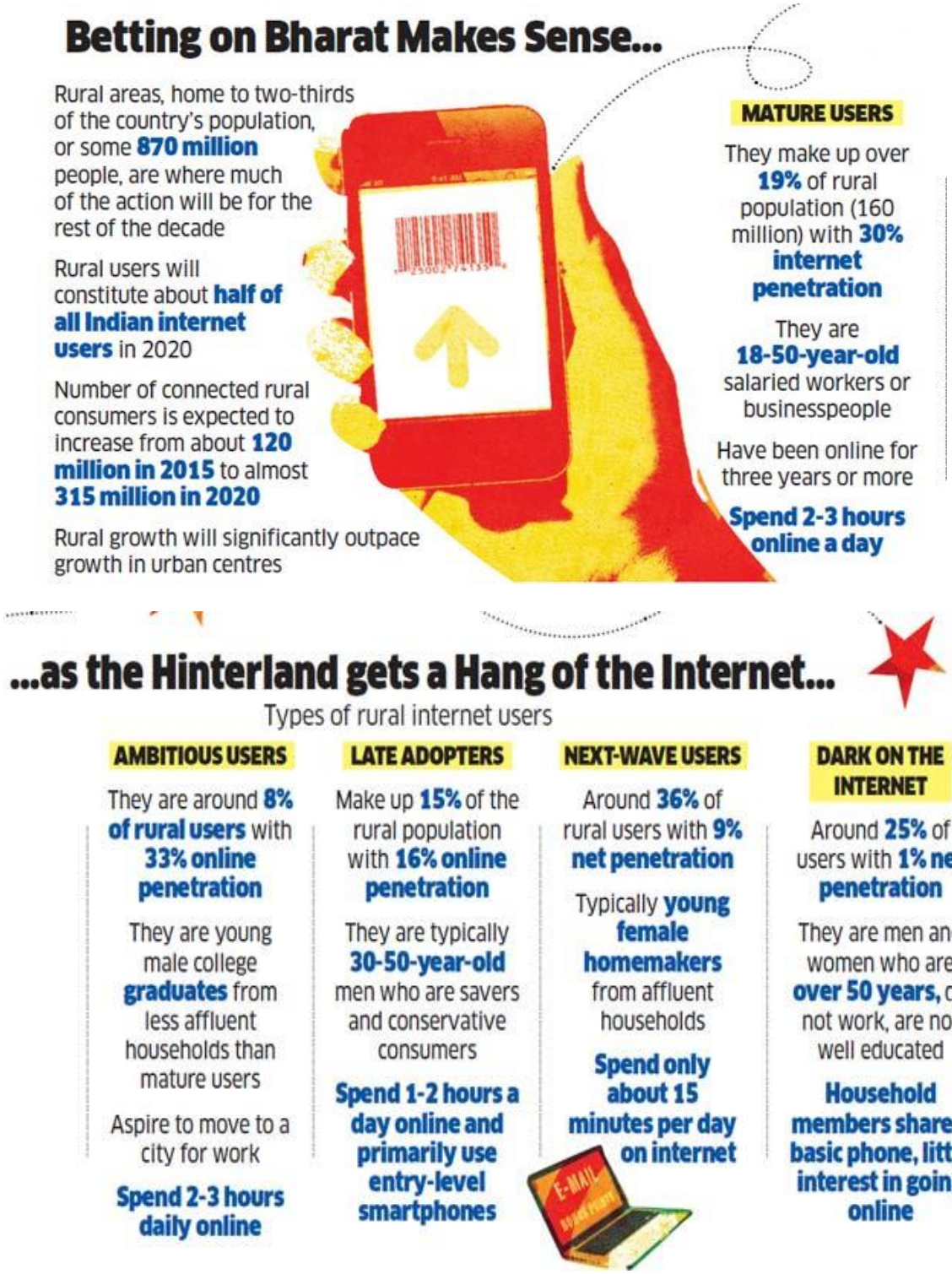


Source: https://kaburlu.files.wordpress.com/2011/09/internet-usage-statistics-india.jpg

E-learning is simply a term used to encapsulate 'the use of technology for ***effective*** learning', and what could be more ***effective*** than deploying this tool for spreading the light of education in the darkest corners of the nation! E-learning's invasion in rural education has emerged as both - a ray of hope as well as a challenge. In a developing country like India, e-learning undoubtedly offers great opportunities to empower the rural areas. With Information and Communication Technology (ICT) crafting e-learning's path, it can incredibly transform the face of rural learning. Here are some facts that back the bright future of eLearning in India:

Source: http://www.cloodon.com/blog/Re-imagining-Rural-Education-In-Digital-India/

Digital Rural India Scenarioas in 2016



Source: http://economictimes.indiatimes.com/news/economy/policy/sunday-et-making-rural-india-pay-digitally-and-challenges-post-demonetisation/articleshow/55640316.cms

CHAPTER 4

GLOBAL DIGITAL PRACTICES IN EDUCATION

A report from SRI International's Center for Technology in Learning compares the use of educational technology for K-12 students in 21 countries. SRI researchers found that despite the recent global economic crisis, economically competitive countries continue to invest in technology to improve their educational systems. Twenty governments indicated that improving access to the Internet is a major priority, and about half reported that increasing students' access to computers is a top national priority.

Key study findings:

- Most governments have instituted teacher technology standards and provide online portals with learning materials and software tools.
- Many countries offer online training and support Web-based communities, and about half assess teachers' technology skills.
- To support continuous improvement efforts, about half of the countries have invested in information systems to systematically monitor student performance and regularly collect data on technology access or use, and are currently evaluating policies and programs.

Source:https://www.sri.com/newsroom/press-releases/sri-report-compares-global-use-technology-education

In this chapter we will elaborate on the best practices on renowned countries in the field of Digital Education.

Singapore is this year's leader of the global ICT revolution. Its government has a clear digital strategy and is an exemplar of online services and e-participation tools, which filters down to its industries and population. The country has the highest penetration of mobile broadband subscriptions per capita in the world and more than half of the population is employed in knowledge-intensive jobs.

Networked Readiness Index

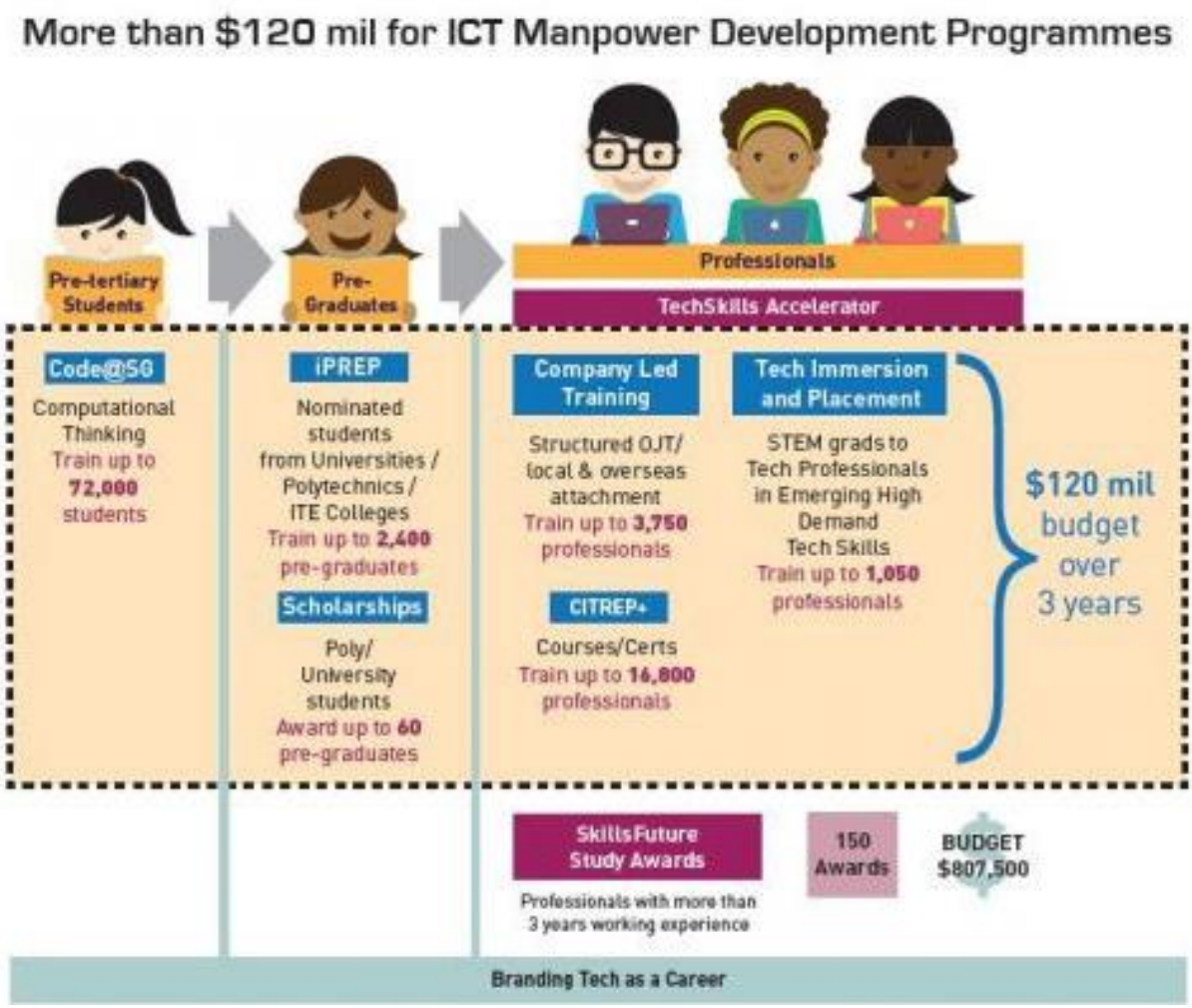
Country	Rank 2015	Rank 2014
Singapore	1	2
Finland	2	1
Sweden	3	3
Netherlands	4	4
Norway	5	5
Switzerland	6	6
United States	7	7
United Kingdom	8	9
Luxembourg	9	11
Japan	10	16

The country topped this year's Global Information Technology Report (GITR), published by INSEAD in partnership with the World Economic Forum and Johnson Cornell University, due to its leadership in business, innovation environment and government usage of ICT.

Source: http://knowledge.insead.edu/entrepreneurship-innovation/the-worlds-most-tech-ready-countries-2015-3953

1) Singapore

Singapore is recognized globally for its high-performing education system that has pioneered new education models and inspired other initiatives worldwide. According to IMD World Competitiveness Yearbook 2013, Singapore was ranked among top 5 in the world for its educational system and educationists credit this success partially to technology, as the city-state has indeed astutely integrated designed digital tools such as digital libraries and e-learning in its education landscape.



Source: https://medium.com/global-intersection/singapores-digital-education-journey-lessons-new-zealand-can-learn-to-propel-digital-2a910e1fb271

Digital Libraries

University libraries are going through a period of change in order to survive in the Digital Age. Today, libraries need to provide access to the information online since students are more willing to use new technologies to study rather than using the traditional way. For example, the National University of Singapore Libraries (NUS Librairies) have experienced a drop of 30% of book loans from 2010.

MOOCs

Since January 2014, students from anywhere are able to take classes from NUS online courses through Coursera, the leading online course platform. In 2014, 55 000 people have signed up with Coursera in Singapore, compared to 15 000 last year. NUS Provost and Deputy President (Academic Affairs) Prof. Tan Eng Chye said: "More students can now have access to, and benefit from, NUS educational offerings". The three first courses that NUS launched are niche domains, in philosophy, physics and classical music. Indeed the courses were chosen based on the fact they were previously not provided on the Coursera course list. NUS seems therefore to consciously choose the online courses subjects as part of a strong marketing strategy.

Source: https://globalstatement.wordpress.com/2014/09/02/digital-education-in-singapore/

Source: https://www.slideshare.net/fantasychoo/mite6023-session2

2) Finland

The Finnish EDTech offering covers the entire gamut of digital education. It delivers personalized learning and training that can automatically adjust to an individual's learning style competence.

The Finnish companies develop cloud-based e-learning platforms and infrastructure solutions, assessment systems, playful mobile solutions, educational games and software, digital learning content and resources.

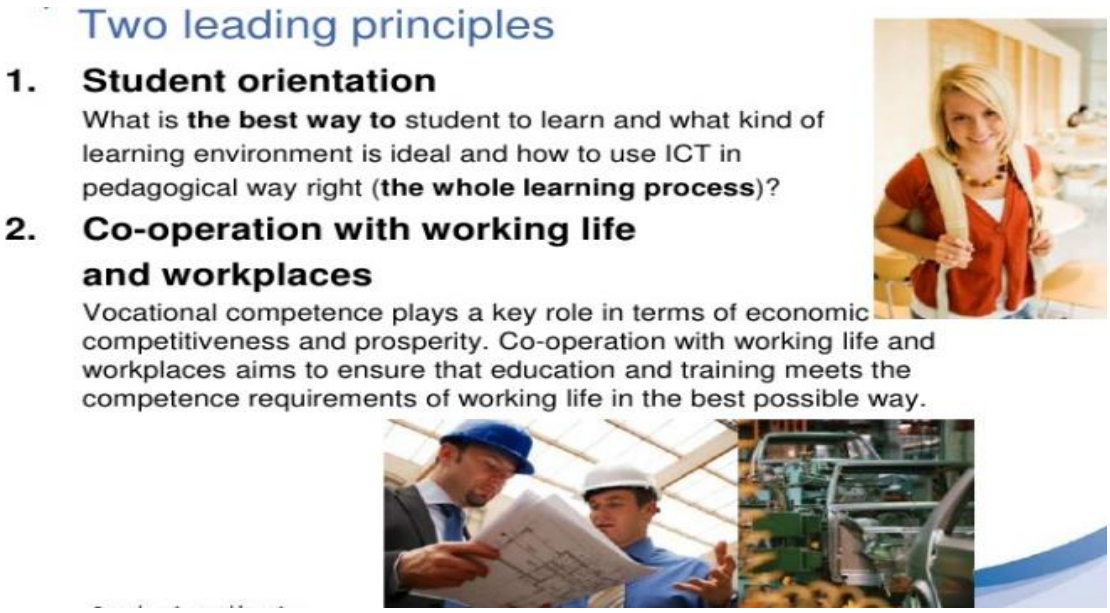
New opportunities are also emerging in hybrid learning environments and data harvesting used in learning process research.

Finnish EdTech companies have world class expertise in modern innovative technology possibilities for teaching and learning.

As connectivity in the world is ever-expanding, and the speed with which it advances, Finland's "digital school model" can be exported all over the globe.

Finland combines the physical and digital dimensions of inspiring classroom and learning environments in order to create an inspiring, self-motivating and active learning environment.

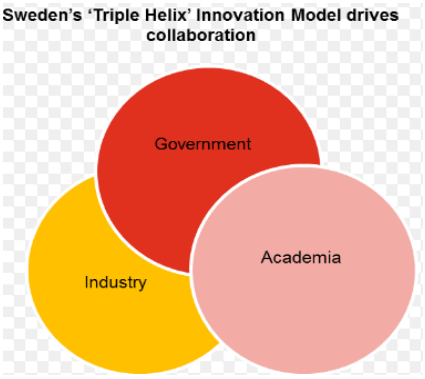
Source: http://www.exportfinland.fi/documents/10304/49d8b31f-a228-4c57-aeb8-891c79ce1e6c



Source: https://www.slideshare.net/Minsku/enriched-learning-ict-in-vocational-education-and-traning-in-finland

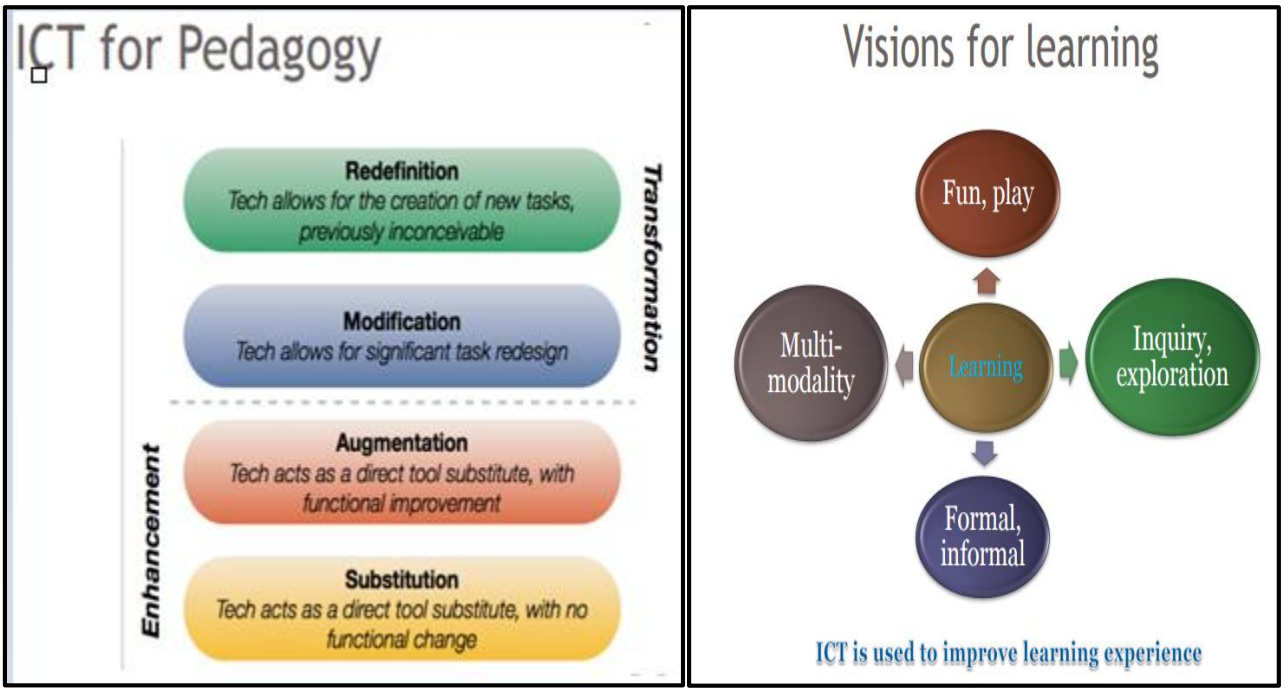
3) Sweden

ICT for Teachers (IT för pedagoger) is a website run by the Swedish National Agency for School Improvement. The website is described as acting as a broker for a range of ICT resources and its target users are school teachers and leaders. It provides links to digital learning resources, courses in use of ICT, research, computer programs, suggestions for using ICT in school and reports of teacher experiences. ICT for Teachers is effectively a portal to the Swedish National Agency‟s web sites, and provides a shortcut to other web resources. The resources associated with



different areas of the web site were developed separately through different projects over the previous 10 years. In the last year, these resources have been brought together and made accessible through the single portal. While bringing the resources together in this way, the opportunity was taken to focus the resources and services on supporting teachers, rather than teachers, learners and other members of the community. The site declares that teacher focus clearly.

Source: https://www.oecd.org/edu/ceri/42159200.pdf



Source: http://cees.mak.ac.ug/sites/default/files/Integrating_ICT_in_Education_Sweden.pdf

A Comparative table of India, Singapore, Finland and Sweden in terms of Population and Area

Country	**Population** (*as of Thursday, April 27, 2017)*	**Area**
India	*1,339,639,184*	2,972,892 Km2 (1,147,839 sq. miles)
Singapore	5,768,309	700 Km2 (270 sq. miles)
Finland	5,538,158	303,511 Km2 (117,186 sq. miles)
Sweden	9,908,181	410,494 Km2 (158,492 sq. miles)

Source: http://www.worldometers.info/world-population

The above table should act as a motivation that if countries with such small area and population and implement Ed-Tech so effectively for economic prosperity why can't a country like India do the same.

CHAPTER 5

TRICITY (CHANDIGARH, MOHALI AND PANCHKULA) EDUCATION SCENARIO

Youth Population of the Tricity (Chandigarh, Mohali and Panchkula)

Adolescent and youth of Chandigarh

Area Name	Total/	Adolescent and	Total Population			Scheduled Caste		
	Rural/	youth						
	Urban	categories						
			Persons	Males	Females	Persons	Males	Females
			1	2	3	4	5	6
State - CHANDIGARH	Total	15-19	104418	60521	43897	22204	12286	9918
State - CHANDIGARH	Total	20-24	121244	68467	52777	22819	12156	10663
State - CHANDIGARH	Rural	15-19	2765	1787	978	549	335	214
State - CHANDIGARH	Urban	15-19	101653	58734	42919	21655	11951	9704
State - CHANDIGARH	Rural	20-24	3593	2255	1338	544	323	221
State - CHANDIGARH	Urban	20-24	117651	66212	51439	22275	11833	10442
District - Chandigarh	Total	15-19	104418	60521	43897	22204	12286	9918
District - Chandigarh	Total	20-24	121244	68467	52777	22819	12156	10663
District - Chandigarh	Rural	15-19	2765	1787	978	549	335	214
District - Chandigarh	Rural	20-24	3593	2255	1338	544	323	221
District - Chandigarh	Urban	15-19	101653	58734	42919	21655	11951	9704
District - Chandigarh	Urban	20-24	117651	66212	51439	22275	11833	10442

Adolescent and youth of Sahibzada Ajit Singh Nagar

Area Name	Total/ Rural/ Urban	Adolescent youth categories	Total Population			Scheduled Caste		
			Persons	Males	Females	Persons	Males	Females
District - Sahibzada Ajit Singh Nagar	Total	15-19	92545	52005	40540	22871	12511	10360
District - Sahibzada Ajit Singh Nagar	Total	20-24	98083	51551	46532	22122	11661	10461
District - Sahibzada Ajit Singh Nagar	Rural	15-19	46132	25809	20323	14486	7879	6607
District - Sahibzada Ajit Singh Nagar	Urban	15-19	46413	26196	20217	8385	4632	3753
District - Sahibzada Ajit Singh Nagar	Rural	20-24	46170	24227	21943	13456	7149	6307
District - Sahibzada Ajit Singh Nagar	Urban	20-24	51913	27324	24589	8666	4512	4154

Adolescent and youth of Panchkula

Area Name	Total/ Rural/ Urban	Adolescent and youth categories	Total Population			Scheduled Caste		
			Persons	Males	Females	Persons	Males	Females
District - Panchkula	Total	15-19	51584	28517	23067	10906	5941	4965
District - Panchkula	Total	20-24	54745	29406	25339	10497	5521	4976
District - Panchkula	Rural	15-19	24384	13240	11144	5537	2995	2542
District - Panchkula	Urban	15-19	27200	15277	11923	5369	2946	2423
District - Panchkula	Rural	20-24	25512	13518	11994	5203	2775	2428
District - Panchkula	Urban	20-24	29233	15888	13345	5294	2746	2548

Source: http://censusindia.gov.in/

SC/ST/OBC and Minorities population Scenario of theTricity (Chandigarh, Mohali and Panchkula)

Distribution of Scheduled Castes population in Chandigarh Union Territory, 1991 – 2001 – 2011

Total / Rural / Urban	Year	Scheduled Caste population	Percentage of Scheduled Caste Population to total population	Decennial growth rate 1991-2001	Decennial growth rate 2001-2011
1	2	3	4	5	6
Total	1991	105,977	16.5	+ 48.7	+ 26.3
	2001	157,597	17.5		
	2011	199,086	18.9		
Rural	1991	14,140	21.4	+ 4.2	- 66.3
	2001	14,740	16.0		
	2011	4,974	17.2		
Urban	1991	91,837	16.0	+ 55.6	+ 35.9
	2001	142,857	17.7		
	2011	194,112	18.9		

The above table reveals that Scheduled Castes in Chandigarh Union Territory is 18.9 per cent, which was 17.5 percent of the total population in 2001 as compared to 16.5 percent in 1991. The Scheduled Caste Population has shown a decennial growth rate of +26.3 during 2001-2011. The decennial growth rate of Rural and Urban has been – 66.3 per cent and + 35.9 in 2011 which was + 4.2 and + 55.6 during 2001 Census respectively.

Source: http://www.censusindia.gov.in/2011census/dchb/0401_PART_A_DCHB_CHANDIGARH.pdf

S.A.S. Nagar (Mohali) Municipal Council + Outgrowth

As per the Population Census 2011 data, following are some quick facts about S.A.S. Nagar (Mohali) Municipal Council + Outgrowth.

	Total	Male	Female
Children	15,729	8,398	7,331
Literacy	92.4%	85%	82.2%
Scheduled Caste	14,756	7,849	6,907
Scheduled Tribe	0	0	0
Illiterate	27,189	13,065	14,124

Caste-wise Population - S.A.S. Nagar (Mohali)

Schedule Caste (SC) constitutes 8.8% while Schedule Tribe (ST) were 0% of total population in S.A.S. Nagar (Mohali) .

	Total	Male	Female
Schedule Caste	14,756	7,849	6,907
Schedule Tribe	0	0	0

Source:http://www.censusindia.gov.in/2011census/dchb/0318_PART_B_DCHB_SAHIBZADA%20AJIT%20SINGH%20NAGAR.pdf

Number and percentage of scheduled castes and scheduled tribes population in Sub-districts, 2011

Sr.No.	Name of Sub-District	Total/ Rural/ Urban	Total population	Total scheduled castes population	Total scheduled tribes population	Percentage of scheduled castes population to total population	Percentage of scheduled tribes population to total population
1	2	3	4	5	6	7	8
1	00356-Kalka	Total	168073	39083	0	23.25	0
		Rural	94154	24795	0	26.33	0
		Urban	73919	14288	0	19.33	0
2	00357-Panchkula	Total	393220	62747	0	15.96	0
		Rural	153909	26689	0	17.34	0
		Urban	239311	36058	0	15.07	0
	069-Panchkula	Total	561293	101830	0	18.14	0
		Rural	248063	51484	0	20.75	0
		Urban	313230	50346	0	16.07	0

Source:http://www.censusindia.gov.in/2011census/dchb/DCHB_A/06/0601_PART_A_DCHB_PANCHKULA.pdf

School Education Scenario of Chandigarh, Haryana and Punajb

Byfircation of Total Enrolments Caste and Gender Wise of India

Secondary Education: State Report Cards

NATIONAL REPORT				SECONDARY EDUCATION REPORT CARD: 2015-16						INDIA
NATIONAL										
Ratio of U.P. to Sec. Schools/Sections			2.54	Ratio of Sec. to Hr.Sec. schools/sections			2.12			
Data Reported from	Districts	680	Blocks	7317	Clusters	82436	Villages	594736	Schools	252176
Basic data : Census 2011	Total Population (In 000')		1210193	Urban Population		31.2	Sex Ratio		940	
Decadal Growth Rate	17.6			% SC Population		16.6	%ST Population		8.6	Area (In Sq.Km.)
Overall Literacy Rate	74.0			Male Literacy Rate		82.1	Female Literacy Rate		65.5	3287240

Key Data	Pri.with U.P.& Sec.& Hr.Sec.	U.P.with Sec. & Hr.Sec.	Pri. with U.P.& Sec.	U.P. with Sec.	Sec. Only	Sec. with Hr.Sec.	Hr.Sec. only	Other	Total
Total Schools	41173	35782	49400	52553	37586	22654	13028	-	252176
Schools: Rural Areas	24066	26770	31322	40664	28781	16556	6985	-	175144
Schools: Urban Areas	17105	9010	18077	11889	8804	6097	6042	-	77024
Total Enrolment	11559652	18643408	3776630	6704546	5371502	12661010	5142583	21118	63880449
Enrolment: Rural Areas	5550782	12765953	2370400	4902306	4118706	9166788	2389171	14232	41278338
Enrolment: Urban Areas	6008870	5876055	1406209	1802240	1252270	3494170	2753412	6886	22600112
Total Teachers	418737	518201	203064	315207	233761	263301	115176	7266	2074713
Teachers: Rural Areas	202922	345159	123041	235601	173053	177105	58492	5840	1321213
Teachers: Urban Areas	215814	173011	80017	79606	60704	86190	56684	1426	753452

	Boys	Girls	Total
XI-XII	13002117	11733280	24735397

Enrolment by Caste	Secondary: Total
% SC	18.68
% ST	8.49
% OBC	45.25
% Muslim	10.24

Secondary Education: State Report Cards

STATE REPORT						SECONDARY EDUCATION REPORT CARD: 2015-16				CHANDIGARH
State	CHANDIGARH									
Ratio of U.P. to Sec. Schools/Sections			1.18	Ratio of Sec. to Hr.Sec. schools/sections					1.78	
Data Reported from	Districts	1	Blocks	20	Clusters	20	Villages	84	Schools	160
Basic data : Census 2011	Total Population (In 000')		1055	Urban Population		97.3	Sex Ratio		818	
Decadal Growth Rate	17.1			% SC Population		18.9	%ST Population			Area (In Sq.Km.)
Overall Literacy Rate	86.4			Male Literacy Rate		90.5	Female Literacy Rate		81.4	114

Key Data	Pri.with U.P.& Sec.& Hr.Sec.	U.P.with Sec. & Hr.Sec.	Pri. with U.P.& Sec.	U.P. with Sec.	Sec. Only	Sec. with Hr.Sec.	Hr.Sec. only	Other	Total
Total Schools	85	5	70	0	0	0	0	-	160
Schools: Rural Areas	9	0	5	0	0	0	0	-	14
Schools: Urban Areas	76	5	65	0	0	0	0	-	146
Total Enrolment	61622	4018	14520	0	0	0	0	0	80160
Enrolment: Rural Areas	4691	0	1475	0	0	0	0	0	6166
Enrolment: Urban Areas	56931	4018	13045	0	0	0	0	0	73994
Total Teachers	2688	206	1057	0	0	0	0	0	3951
Teachers: Rural Areas	236	0	93	0	0	0	0	0	329
Teachers: Urban Areas	2452	206	964	0	0	0	0	0	3622

STATE REPORT					SECONDARY EDUCATION REPORT CARD: 2015-16						PUNJAB
State	PUNJAB										
Ratio of U.P. to Sec. Schools/Sections				1.60	Ratio of Sec. to Hr.Sec. schools/sections					1.98	
Data Reported from	Districts	22	Blocks	146	Clusters	1782	Villages	13195	Schools	9171	
Basic data : Census 2011	Total Population (In 000')		27704		Urban Population		29.8		Sex Ratio	893	
Decadal Growth Rate	13.7				% SC Population		31.9		%ST Population		Area (In Sq.Km.)
Overall Literacy Rate	76.7				Male Literacy Rate		81.5		Female Literacy Rate	71.3	50362

Key Data	Pri.with U.P.& Sec.& Hr.Sec.	U.P.with Sec. & Hr.Sec.	Pri. with U.P.& Sec.	U.P. with Sec.	Sec. Only	Sec. with Hr.Sec.	Hr.Sec. only	Other	Total
Total Schools	2593	1754	2743	1869	6	63	143	-	9171
Schools: Rural Areas	1323	1390	1353	1722	4	38	57	-	5887
Schools: Urban Areas	1270	364	1390	147	2	25	86	-	3284
Total Enrolment	613610	602297	134929	174839	238	19673	33374	0	1578960
Enrolment: Rural Areas	243248	389398	60338	156559	187	12751	8533	0	871014
Enrolment: Urban Areas	370362	212899	74591	18280	51	6922	24841	0	707946
Total Teachers	30788	25738	10644	11276	19	900	1714	38	81117
Teachers: Rural Areas	13533	17954	5184	10002	13	588	573	11	47858
Teachers: Urban Areas	17255	7784	5460	1274	6	312	1141	27	33259

Number of students Appeared and Passed in 2015-2016 Batch (Chandigarh)

Byfircation of Total Enrolments Caste and Gender Wise of Chandigarh

	BOYS	GIRLS	TOTAL
XI-XII	22838	17070	39908

Enrolment by Caste	Secondary: Total
% SC	13.95
% ST	0.19
% OBC	2.68
% Muslim	4.54

Number of students Appeared and Passed in 2015-2016 Batch (Punjab)

Examination Results: Grade XII	Students Appeared								Students Passed							
	General		SC		ST		OBC		General		SC		ST		OBC	
Stream	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Arts	58405	42015	39210	39653	61	86	18983	18123	86.41	93.43	79.90	87.46	100.00	40.70	83.08	89.65
Sci.	29347	23699	4911	4218	12	26	4599	3911	90.33	94.19	89.37	94.14	100.00	46.15	90.43	92.71
Com.	17725	14131	2774	2855	8	5	2328	2415	91.46	96.28	91.35	94.57	50.00	40.00	89.69	93.79
Voc.	3225	1129	4096	2304	0	0	1786	856	96.12	97.61	95.14	96.57	0.00	0.00	97.93	87.38
Other	79	47	37	19	0	0	11	5	51.90	89.36	94.59	84.21	0.00	0.00	81.82	100.00

Byfircation of Total Enrolments Caste and Gender Wise of Punjab

	BOYS	GIRLS	TOTAL
XI-XII	382950	308568	691518

Enrolment by Caste	Secondary: Total
% SC	36.57
% ST	0.02
% OBC	15.53
% Muslim	1.62

STATE REPORT					SECONDARY EDUCATION REPORT CARD: 2015-16					HARYANA
State	HARYANA									Chandigarh
Ratio of U.P. to Sec. Schools/Sections				1.60	Ratio of Sec. to Hr.Sec. schools/sections				1.78	
Data Reported from	Districts	21	Blocks	126	Clusters	1523	Villages	7438	Schools	7663
Basic data : Census 2011	Total Population (In 000')			25353	Urban Population		24.1	Sex Ratio		877
Decadal Growth Rate	19.9				% SC Population		20.2	%ST Population		Area (In Sq.Km.)
Overall Literacy Rate	76.6				Male Literacy Rate		85.4	Female Literacy Rate	66.8	44212

Key Data	Pri.with U.P.& Sec.& Hr.Sec.	U.P.with Sec. & Hr.Sec.	Pri. with U.P.& Sec.	U.P. with Sec.	Sec. Only	Sec. with Hr.Sec.	Hr.Sec. only	Other	Total
Total Schools	2329	1924	1926	1437	0	46	1	-	7663
Schools: Rural Areas	1364	1626	1171	1326	0	41	0	-	5528
Schools: Urban Areas	965	298	755	111	0	5	1	-	2135
Total Enrolment	677656	521186	147058	119727	0	8665	753	0	1475045
Enrolment: Rural Areas	321769	365802	86495	107022	0	7409	0	0	888497
Enrolment: Urban Areas	355887	155384	60563	12705	0	1256	753	0	586548
Total Teachers	29494	34368	9517	11530	0	470	18	26	85423
Teachers: Rural Areas	15493	26828	5750	10427	0	403	0	6	58907

Number of students Appeared and Passed in 2015-2016 Batch (Haryana)

Examination Results: Grade XII	Students Appeared								Students Passed							
	General		SC		ST		OBC		General		SC		ST		OBC	
Stream	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Arts	36228	31590	16380	17598	0	0	23010	22476	59.48	73.31	44.72	55.40	0.00	0.00	49.26	63.88
Sci.	35958	19739	5752	2845	0	0	16424	7865	75.72	86.73	63.49	76.77	0.00	0.00	65.18	77.62
Com.	23963	20101	4456	3379	0	0	9516	7419	71.55	83.50	51.32	67.33	0.00	0.00	55.62	71.42
Voc.	105	100	57	77	0	0	51	117	52.38	48.00	77.19	53.25	0.00	0.00	94.12	64.10
Other	3	15	1	5	0	0	2	9	100.00	100.00	100.00	80.00	0.00	0.00	50.00	100.00

Byfircation of Total Enrolments Caste and Gender Wise of Haryana

	BOYS	GIRLS	TOTAL
XI-XII	332424	263531	595955

Enrolment by Caste	Secondary: Total
% SC	24.04
% ST	0.00
% OBC	29.87
% Muslim	3.15

Source: http://udise.in/Downloads/SEMIS-STRC-2015-16/SEMIS-State_Report_Cards_2015-16.pdf

Higher Education Scenario of the Chandigarh, Punjab and Haryana

Total Number of Universities in India

Type of university	Number of Universities
Central Open University	1
Central University	43
Deemed University- Government	32
Institution Under State Legislature Act	5
Institution of National Importance	75
Deemed University- Private	79
State Private University	197
State Open University	13
State Public University	329
State Private Open University	1
Deemed University- Government Aided	11
Others	13
Grand Total	799

Total No. of Colleges

	Number of Government & Private Colleges
All India	35667
Chandigarh	25
Punjab	960
Haryana	870

Total No. of Enrollments

	Government Colleges	Private Colleges
All India	8485309	17245854
Chandigarh	18313	28451
Punjab	209306	352841
Haryana	177529	430051

State-wise Enrolment in various social categories

	All Categories	**Scheduled Caste**	**Scheduled Tribe**	**Other Backward Classes**	**Minority Communities**
All India	**34584781**	**4810314**	**1704461**	**11673535**	**4464**
Chandigarh	**99992**	**10987**	**1648**	**4592**	**132084**

Punjab	**878479**	**196367**	**5515**	**90469**	**13173**
Haryana	**831659**	**114871**	**2229**	**194195**	**682961**

State-wise Number of Teachers among various social categories

	All Categories	**Scheduled Caste**	**Scheduled Tribe**	**Other Backward Classes**	**Minority Communities**
All India	**1518813**	**113295**	**32174**	**385566**	**50800**
Chandigarh	**3226**	**246**	**21**	**38**	**264**
Punjab	**55707**	**2803**	**74**	**1714**	**7382**
Haryana	**45722**	**62**	**5515**	**99**	**500**

Source: http://aishe.nic.in/aishe/viewDocument.action?documentId=227

CHAPTER 6

TOOLS FOR DIGITAL EDUCATION AND INITIATIVES BY MAJOR ICT COMPANIES

Mobile Apps for Education

Google Group

To create knowledge hub

YouTube

Broadcast Yourself

Google Form

Online survey/Quiz

Google Calendar

Online Event manager

Google Hangout

Instant messaging, video App

Skype

Video Conferencing

Google Search

Searching Platform

Gmail

Organise Yourself

Google Map

Pin your Location

Google Docs

Create & share your work online

Google Sheet

Online Spreadsheet

Google Slide

Creating Online slides

Google Classroom

Blended learning platform

Google Translator

Online multilingual Platform

State Bank Buddy

SBI Wallet app

MUDRA

Mobile Wallet App

MOOC

Concept of Our Own MOOC University

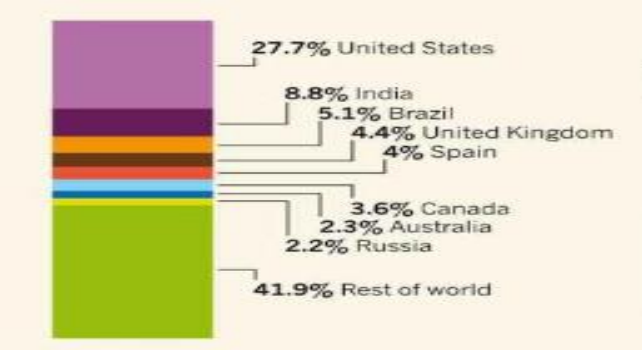
MOOC worldwide

The abbreviation MOOC stands for Massive Open Online Course, and it's the newest drift in digital pedagogy. MOOCs are completely free, and truly 'massive' in that they're open to all, possibly enrolling many thousands of students. MOOCs resemble conventional courses in which the core medium of teaching is through short instructional videos. Response is given electronically, and teaching assistants monitor dedicated course discussion boards. Though with a MOOC, students are allowed to follow any tool they choose through a network of lectures and complementary resources such as blogs, Twitter feeds, discussion forums etc. A MOOC relies heavily on the concept of networking and sharing, all students' work made publicly available for fellow course mates. Educators supportive of MOOCs argue that they help to expand knowledge bases and intellectual networks, and moreover can bring high-quality education to the masses, opening up opportunities for those in the remotest parts of the world.

MOOC in India

SWAYAM (**Study Webs of Active Learning for Young Aspiring Minds)** is a MOOC platform by the Indian government which has determined goals. It is one platform that would bind Indian higher education, both online and offline. The courses on SWAYAM will be free for anyone in the world. Not only can students learn from the best institutes in India, but they can now earn credits from them via SWAYAM. The **UGC (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016,** allows students who are enrolled in higher education programs across India to earn credits via SWAYAM. Each credit will be equivalent to 13–15 hours of learning activities. To earn these credits, students will need to do all the required assignments/homework for these courses and then attend a final proctored exam. Any academic institution in India can offer up to 20% of its catalog in a particular program via SWAYAM. The institutions also need to provide any resources that students need in order to take SWAYAM courses. The exam will be held in the local institute or in a proctored center.

MOOC Students according to country of origin



Indian participants:

- IIT Bombay
- IIT Delhi
- IIT Kanpur
- IIM Bangalore
- Indian School of Business Hyderabad

https://www.linkedin.com/pulse/20141010055504-78694606-mooc-the-new-buzzword-in-online-education

MOOC in Tricity

In view of the growing demands and rising aspirations of young Punjabis, the state will need more universities and faculty to sustain its Gross Enrolment Ratio (GER). To an extent, MOOC can help in bridging the gap, if carried forward through planning and measures to audit the learning outcomes and improvement of general performance level of the student is taken care of. Following are the benefits of launching MOOC in Tricity:

- MOOC can be organized in any setting and in any language that has connectivity
- It can be organized as quickly as we can inform the participants for priority learning
- Contextualized content can be shared by all
- Learning happens in a more informal setting
- We can connect across disciplines and corporate/institutional walls
- We can add to state's learning environment and/or network by participating in a MOOC

Various MOOC Models Available As Options for Implementation

	Flipped Classroom Model	Free MOOC Model	Freemium or Paid MOOCs
Platform provision, support and training	Provider	Provider	Provider
Content (including assessments)	University	University	University (digitally enhanced by Provider)
Student Acquisition	University	Provider + University	Provider
MOOC Facilitation	University	University	Provider
Student Services such as mentoring, certification (as relevant)	Provider + University	Provider + University	Provider + University
Fees/Charges	University collects fees and pays Provider accordingly.	Provider collects fees and pays university accordingly.	Provider collects fees and pays university accordingly.

MoodleMoot India - Advancing Together

MOODLE India

Moodle project has quietly surpassed the 100 million users mark recently and marked its presence in more than 232 countries all around the globe. Similarly, the total number of courses on all Moodle sites have also crossed the 11 million mark with close to 76k registered websites.

Registered sites	75,830
Countries	232
Courses	11,770,119
Users	100,669,855
Enrolments	336,197,707
Forum posts	207,752,911
Resources	104,689,764
Quiz questions	564,638,498

The Moodle stats data shows the data collected from the registered Moodle sites only and may not give an exact figure. The current Moodle usage statistics are as follows:

Countries with most registered websites:

On the other hand, US maintain its pole position in the list of countries with most number of Moodle site registrations followed by Spain, Brazil & Mexico. Here are the top 10 countries in descending order of registered Moodle sites:

Surprisingly, Australia – the country of origin of Moodle, is sitting at 9th number with close to 2.3k registered Moodle sites. India is slowly picking up the pace and starts rising in the top 10 list and now sits at 8th place.

Source: http://www.moodleworld.com/moodle-stats-moodle-surpasses-the-100-million-users-mark-and-india-rises-in-the-top-10-moodle-countries-list-moodlestats/

Initiatives by Microsoft India in the field of Digital Education

INITIATIVE	FOCUS	IMPACT
Project Jyoti	Skill Training	The program has trained over 500,000 young adults, 70% of who are in gainful employment or self-employed
Project Bhasha	Simplifying Learning	We provide support for our flagship products in 12 Indian languages, aimed at building a vibrant local language computing community.
Accessibility	Personalize	Accessibility enables individuals of all abilities to personalize their technology to make it easier to see, hear, and use.
Bizspark	Entrepreneurship	Software development tools and key industry connections free of cost.
Imagine Cup	Innovation	World's premier youth technology competition, allowing high school and university students to develop game-changing solutions.
Microsoft Learning	IT Skills	Developing skill sets and enhancing employability of students and IT pros, with over 1 million people certified so far.

Source: https://www.microsoft.com/en-in/about/citizenship/empowering-youth.aspx

Initiatives by Google India in the field of Digital Education

INITIATIVE	FOCUS AREA	IMPACT
Digital Unlocked	Entrepreneurship	Empower thousands of Indian SMBs with essential digital skills to help them get online and grow their business. Google has partnered with FICCI for the offline training, under which 5,000 workshops will be held across 40 Indian cities over the next three years.
Google	Entrepreneurship	For India's mobile-first audience, Google also

Primer		launched Primer, a free mobile app uniquely designed to teach digital marketing skills in a quick, easy and interactive way
Google My Business Program	Entrepreneurship	Over 8 million Indian SMBs are already on these platforms, with thousands more coming online every month.
Internet Saathi Initiative	Online Literacy	Under the "Internet Saathi" programme, 1,000 specially designed bicycles having connected devices were introduced to give villagers an experience of Internet over a period of four to six months.
Google Hindi Keyboard	Digital Literacy	Under Google India initiative, the company introduced translation and support for several Indian languages. Android Keyboard now supports almost 11 Indian languages and the Indian users can now load pages faster.
Free Wi-Fi	Digital India	The search engine giant Google collaborated with Indian Railways and Railtel to launch RailWire Wifi. The plan involves providing infrastructure for high-speed Wi-Fi across 400 stations in India.

Source: http://www.gizbot.com/internet/features/8-exciting-initiatives-that-google-has-taken-india-under-sundar-pichais-leadership/articlecontent-pf69885-037319.html

Initiatives by Intel India in the field of Digital Education

INITIATIVE	FOCUS	IMPACT
Ek Kadam Unnati ki Aur	Online Literacy	Common Access to Digital Learning Centers
Digital Unnati Website	Entrepreneurship	Helps Village Level Entrepreneurs to assemble PC's online.
Innovate for Digital India Challenge	Entrepreneurship	Supports Local Innovation & Entrepreneurship

Source: http://economictimes.indiatimes.com/tech/software/intel-india-unveils-three-new-initiatives-to-support-digital-india/articleshow/52447233.cms

CHAPTER 7

EMERGING & FUTURE DIGITAL EDUCATION TRENDS

The technologies of tomorrow are already being tested in select classrooms today, laying the seeds for the future of how students could learn. With 2016 fast approaching, technology analysts have been busy prognosticating the top technology trends. A few of these technologies have already made headway into education, and others are poised for mass distribution, with the promise of ground-shaking change in their wake.

No longer simply future-gazing, technologies like augmented and virtual reality (AR/VR) are becoming firmly accepted by the education sector for adding value to learning experiences.

Digital Collaboration

Digital collaboration is using digital technologies for collaboration. Dramatically different from traditional collaboration, it connects a broader network of participants who can accomplish much more than they would on their own.

Examples

- Online meetings and webinar
- Co-authoring documents and shared spreadsheets
- Mind maps
- Social media
- Shared task lists or issue tracking systems
- Google Classroom

Source:https://en.wikipedia.org/wiki/Digital_collaboratio

Drones for Practical learning

First and foremost, one of the best ways to use drones in the classroom is to have students design and build their own, whether in a robotics club, in shop class, or as a class project. There aren't a lot of options for buying cheap kits at the moment, but keep your eyes peeled, as the cost of such kits will inevitably come down over time.

Making drones in a school club or even just studying models online will teach key lessons about:

- Robotics

- Math
- Electronics
- Chemistry
- Programming
- Perseverance and Hands-On Experience.
- Shoot Video for school project
- Lead a treasure hunt
- Brainstorm alternative use

Source:http://www.edudemic.com/drones-classroom-can-happen/

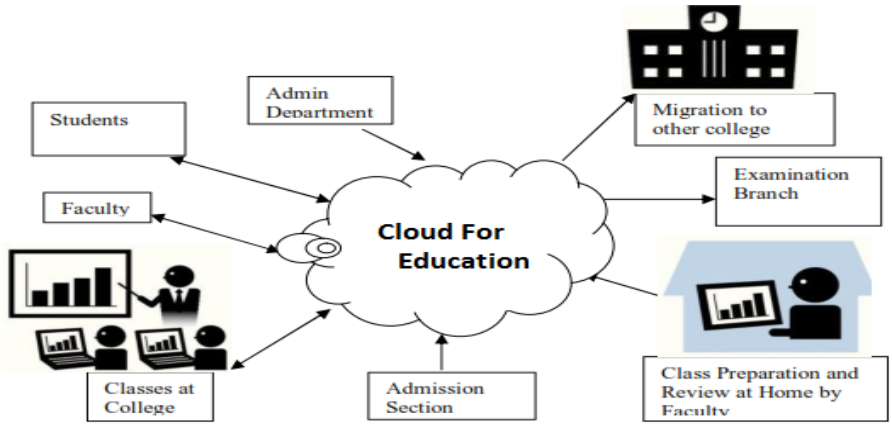
Cloud Storage

Cloud Storage is technology that allows you to save files in storage, and then access those files via the Cloud. Let's break down this definition. First, **storage** is the computer's ability to save files and other resources for later use. When you restart a computer, the files that are still available after the computer turns back on are saved and read from storage. Such storage commonly consists of a hard drive, a USB Flash drive, or another type of drive.

Because local data drives can be damaged or stolen, an idea was developed to use data drives over a network as storage. This allows the drives to be secured in a data center and backed up automatically. Initially, **network storage** required fast local networks (**LAN**), but today we have a ubiquitous network called the Internet.

For colleges, universities, schools and other educational institutions, having cloud storage and data backup can make a lot of things easier. Files can be created, edited, shared and securely stored. All of that content can be backed up so it is never lost, misplaced or accidentally deleted. However, the cloud storage and backup market is expansive and each company has different features and offerings, which can get a little overwhelming.

Source:https://www.cloudwards.net/the-best-cloud-storage-for-schools-colleges-universities/



Services attached to Education Cloud

Benefits of cloud storage to students:

- Lighten the Backpack and Go Mobile
- Instant Anywhere Access
- Share Your Data
- Collaboration Made Simple
- Backup

Benefits of cloud storage to Teachers:

- Make the Most of the iPad in the Classroom
- Class Collaboration
- Instant Access
- Use for Both Work and Personal Use

Source:http://www.sugarsync.com/blog/cloudstorage/the-cloud-for-education/

Virtual or 3D learning

Virtual Learning worlds complement text and pictures with a 3D experience to truly engage students. They supplement STEM learning much like the old diagram – to display location, context and supplementary information. Learning that is 3D-based is the STEM conduit, the mediator that bridges the gap between the powerful abstract world of STEM ideas and the "tangible" world of the student. It gives students context to build mental models and better understand STEM ideas. They can see how light enters the human eye or how sound enters the human ear; Virtual Learning is the empirical medium that transforms ideas and theory into experience and understanding.

Source:http://www.advanc-ed.org/source/learning-3d-making-stem-real

Haptic Technology: Haptic (pronounced HAP-tiks) is the science of applying touch (tactile) sensation and control to interaction with computer applications. In combination with a visual display, haptic technology can be used to train people

for tasks requiring hand-eye coordination, such as surgery and space ship maneuvers. It can also be used for games in which you feel as well as see your interactions with images.

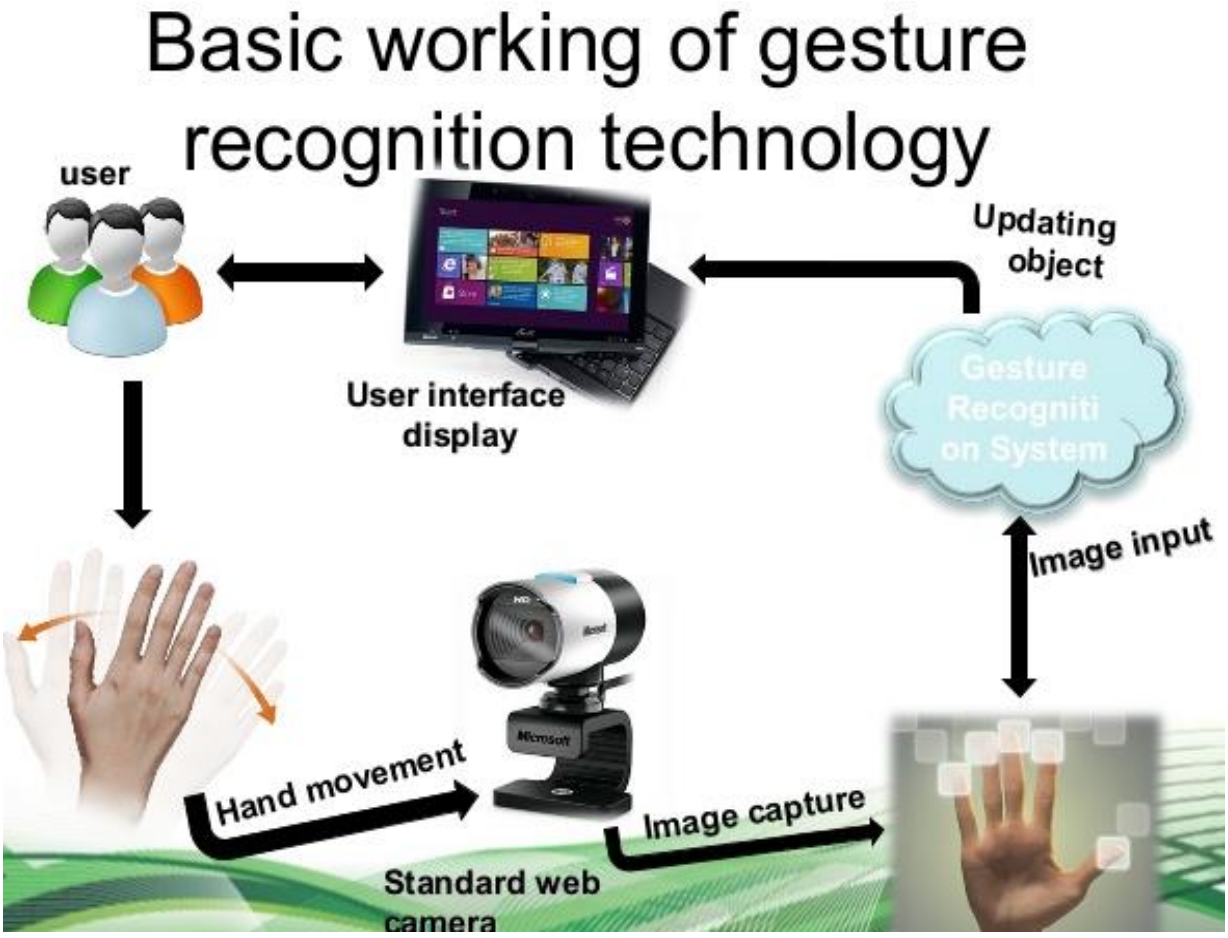
Source:http://whatis.techtarget.com/definition/haptics

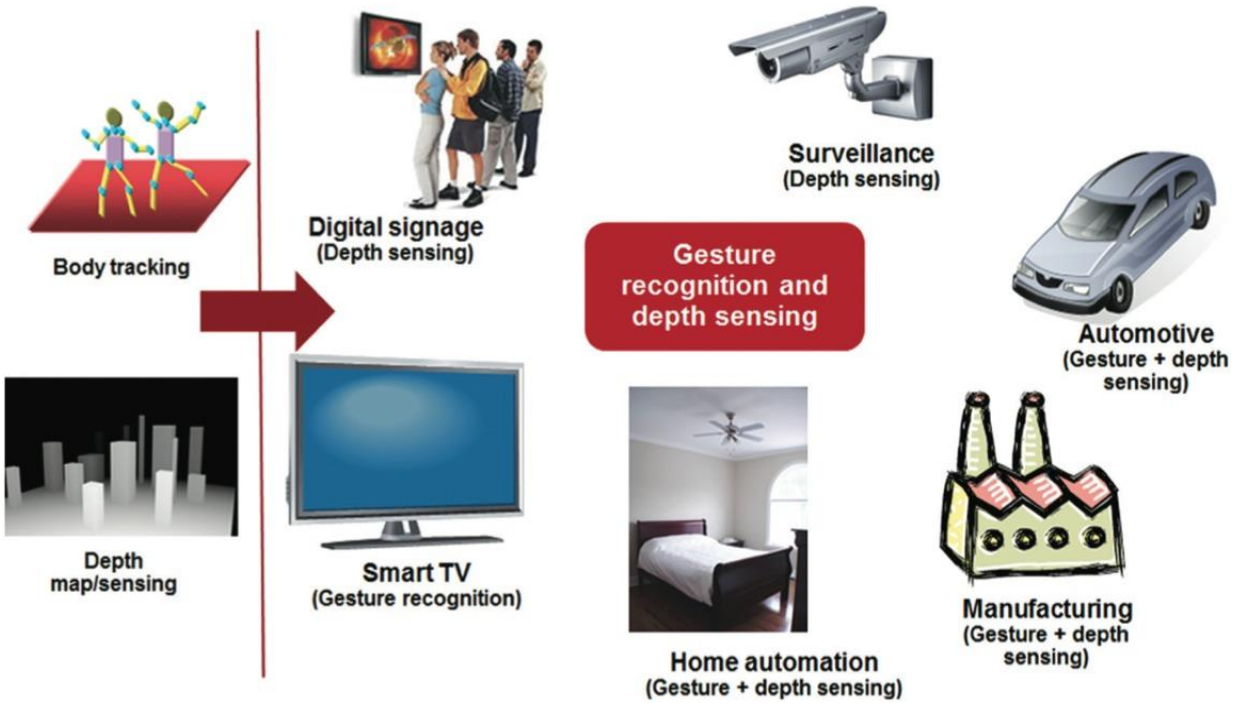
Gesture Learning

Gesture recognition is the mathematical interpretation of a human motion by a computing device.

Gesture recognition, along with facial recognition, voice recognition, eye tracking and lip movement recognition are components of what developers refer to as a perceptual user interface (PUI). The goal of PUI is to enhance the efficiency and ease of use for the underlying logical design of a stored program, a design discipline known as usability.

Source:http://whatis.techtarget.com/definition/gesture-recognition





Gesture recognition can be of following types:

- Hand Gesture Recognition
- Facial gesture recognition
- Sign Language recognition
- Gesture sensation technology

Source:https://www.slideshare.net/jinalthakrar31/gesture-recognition-technology-44884536

Air Writing

The physical act of air-writing the letters as well as saying and spelling the words creates a big cognitive impression and helps cement the word in the child's memory. The exercise also gives the child some valuable practice in writing that will be useful later on in their education. Air Writing" is a teacher-led activity where the children "write" the letters

in the air, using big arm movements. Children also verbalize (speak out loud) the steps to form the letter. Air writing helps children remember letter formation, which is a motion-oriented "memory," and which is an entirely different (and separate) memory than the visual memories of letter shapes. Air writing also helps to strengthen the arm and shoulder muscles in preparation for handwriting. This is important because weak muscles lead to bad habits in handwriting. We recommend spending a few minutes a day on Air Writing, just before your daily handwriting or pre-handwriting practice.

Leap Motion Technology

The Leap Motion controller is a small USB peripheral device which is designed to be placed on a physical desktop, facing upward. It can also be mounted onto a virtual reality headset.

It uses an array of infrared sensors. Motion detecting algorithm is the secret. It consumes only 1-2% of the CPU. It does not require graphic processing units. 200 times more sensitive than existing touch free technologies. It is more accurate than mouse & keyboard.

Source:https://www.slideshare.net/velakaturi/leap-2-44397716

Source:https://www.slideshare.net/ruksarkhatun5/leap-20409182

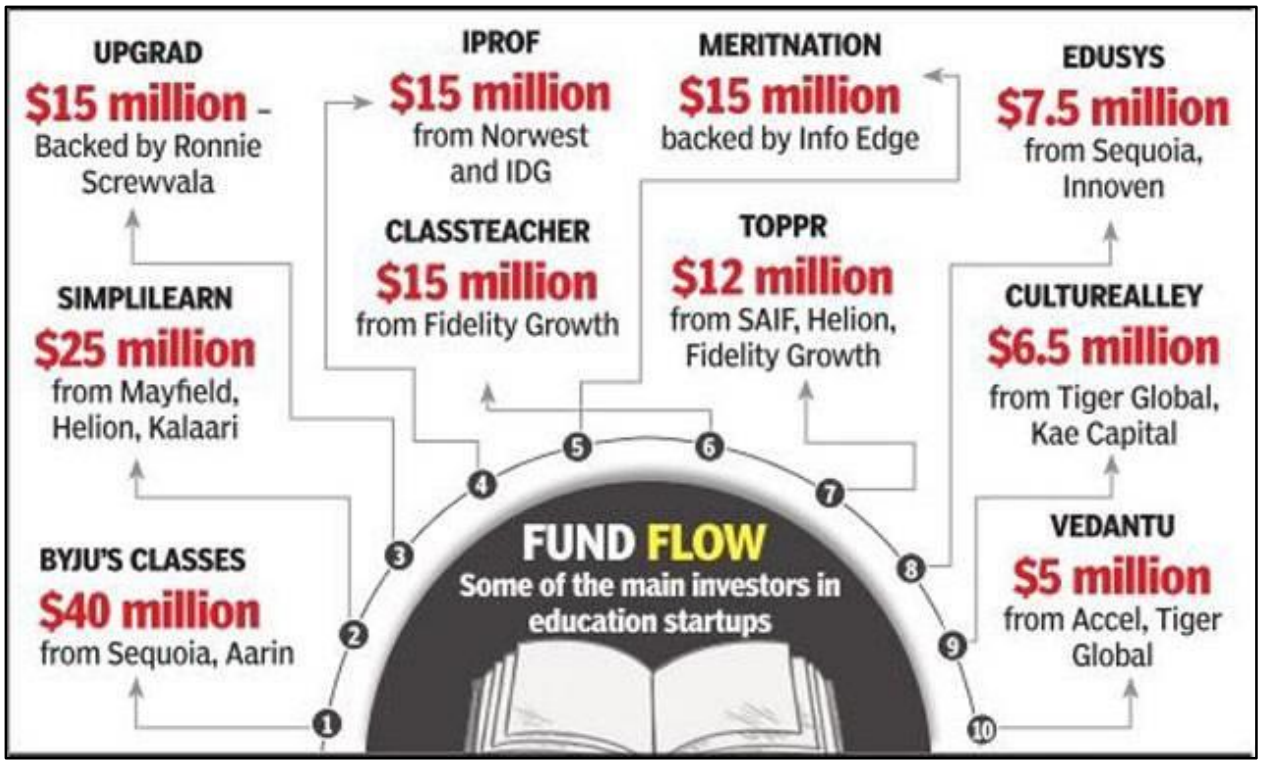
CHAPTER 8

DIGITAL EDUCATION FOR ENTREPRENEURSHIP AND SERVICE INDUSTRY- A NEW CONCEPT FOR INDIAN ECONOMIC PROSPERITY

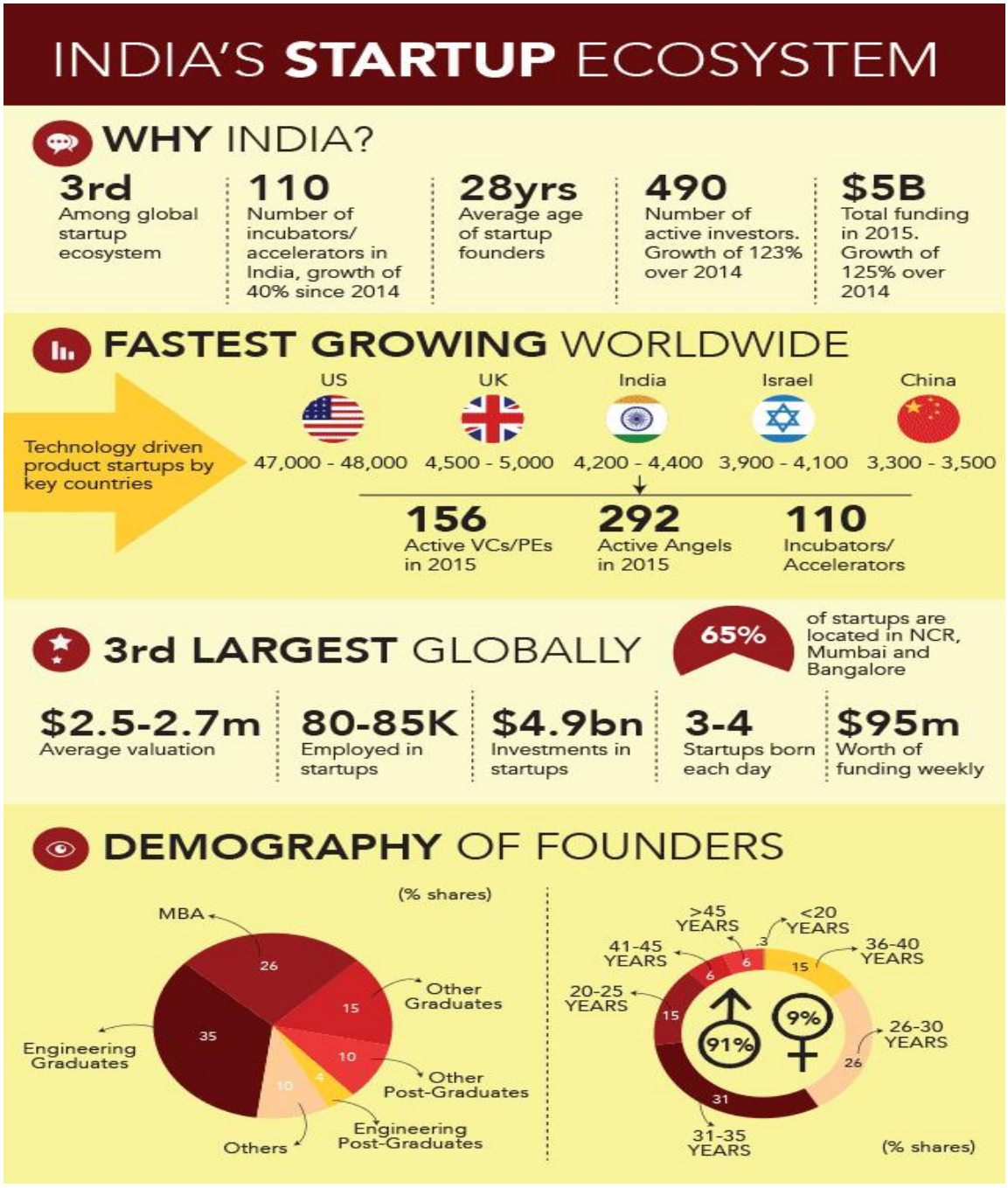
Today's youth are keen to experiment and take risks. At present, many young fearless entrepreneurs have set the path for a wave of entrepreneurship in the country. This entrepreneurial spirit has resulted in not just innovation but also in entrepreneurship being recognised as the driving force of the market. Also, with government actively endorsing startups and small businesses, the wheel of entrepreneur-driven innovation has started rolling. Today, India is at a threshold of startup boom, as we are world's third fastest growing startup eco-system. With 3,100 startups, India is closely behind UK with 4,000 startups and catching up to US which has 41,500 startups. India is changing and so are the aspirations of its people.

Source: https://yourstory.com/2015/12/rise-of-india-entrepreneurs/

Major Entrepreneurial ventures and their investors in Ed- Tech Segment



Source: http://www.gadgetsnow.com/tech-news/Why-edtech-startups-will-be-the-next-to-top-the-class/articleshow/48384931.cms



Source: http://blog.jobspire.net/makes-indian-startup-ecosystem-special/

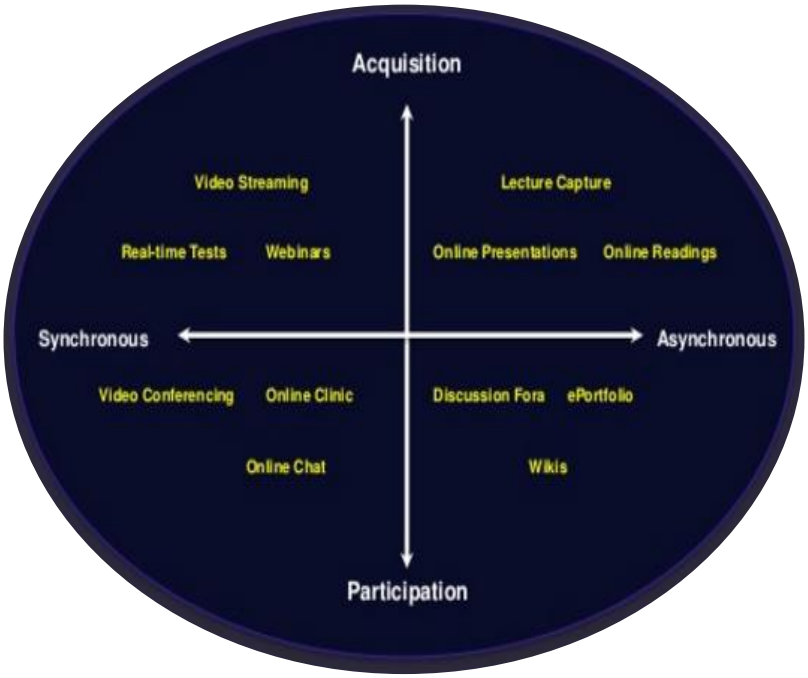
Internet and digitisation taking over the traditional mediums of learning and changing data consumption habits in India. For entrepreneurs in India, 58.3 per cent of the respondents have seen a growth in profit and 67.2 per cent have seen a growth in revenues in the past 6 months. Similarly, about 75 per cent of the respondents expect profits to increase and 80.4 per cent of the respondents

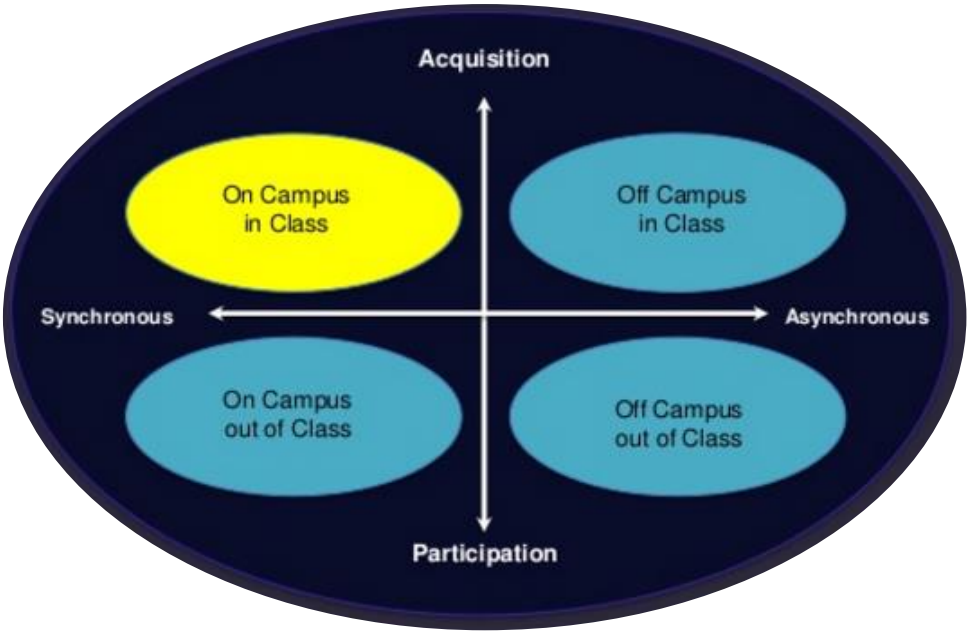
expect revenues to increase in the next 6 months.

Source:http://economictimes.indiatimes.com/articleshow/49372561.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

These are the two reasons why we need to focus more on digital education for developing entrepreneurial skills in the youth**.**

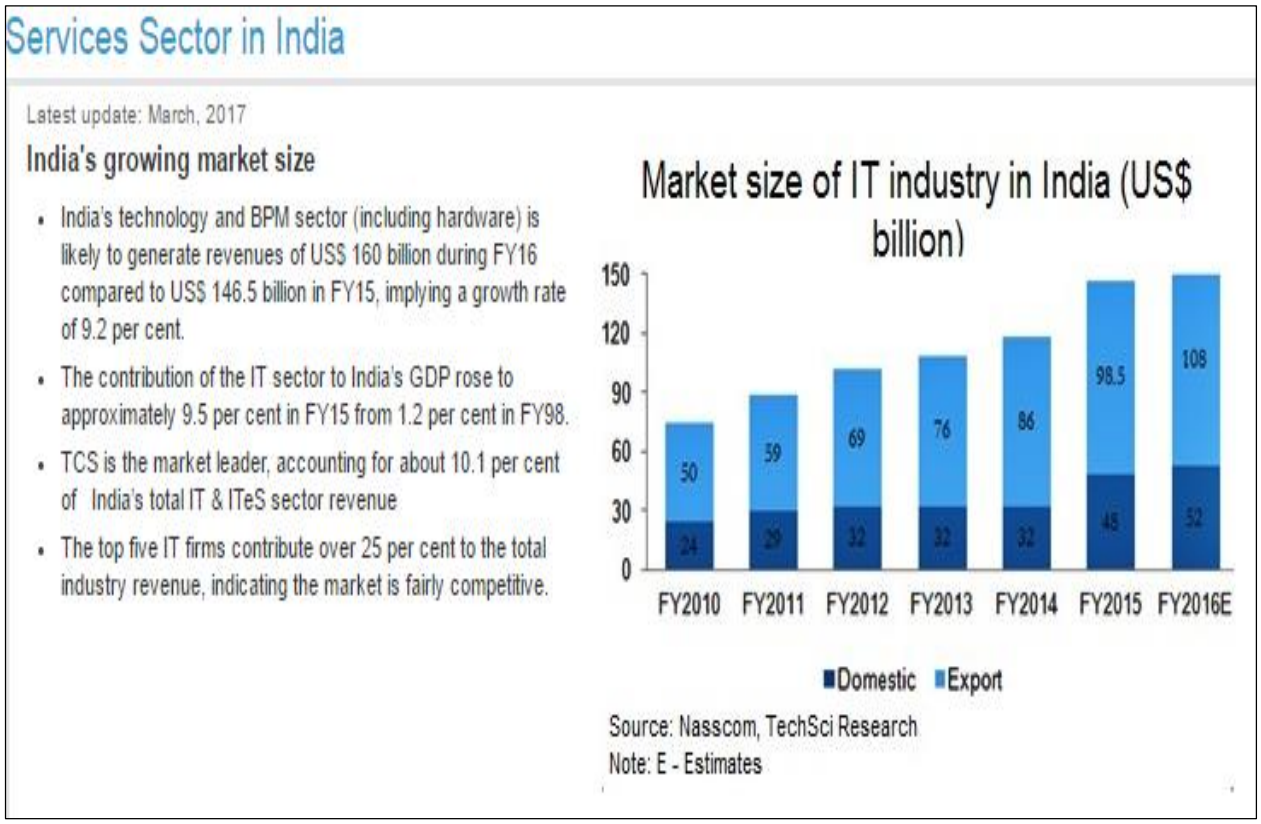
Ecology of Digital Learning for Entrepreneurs





Source: https://www.slideshare.net/mbrownz/digital-learning-and-entrepreneurship-education-living-and-learning-on-the-edge

Another Segment which we need to focus on is digital education for empowering youth to be part of the growing Indian service Industry.

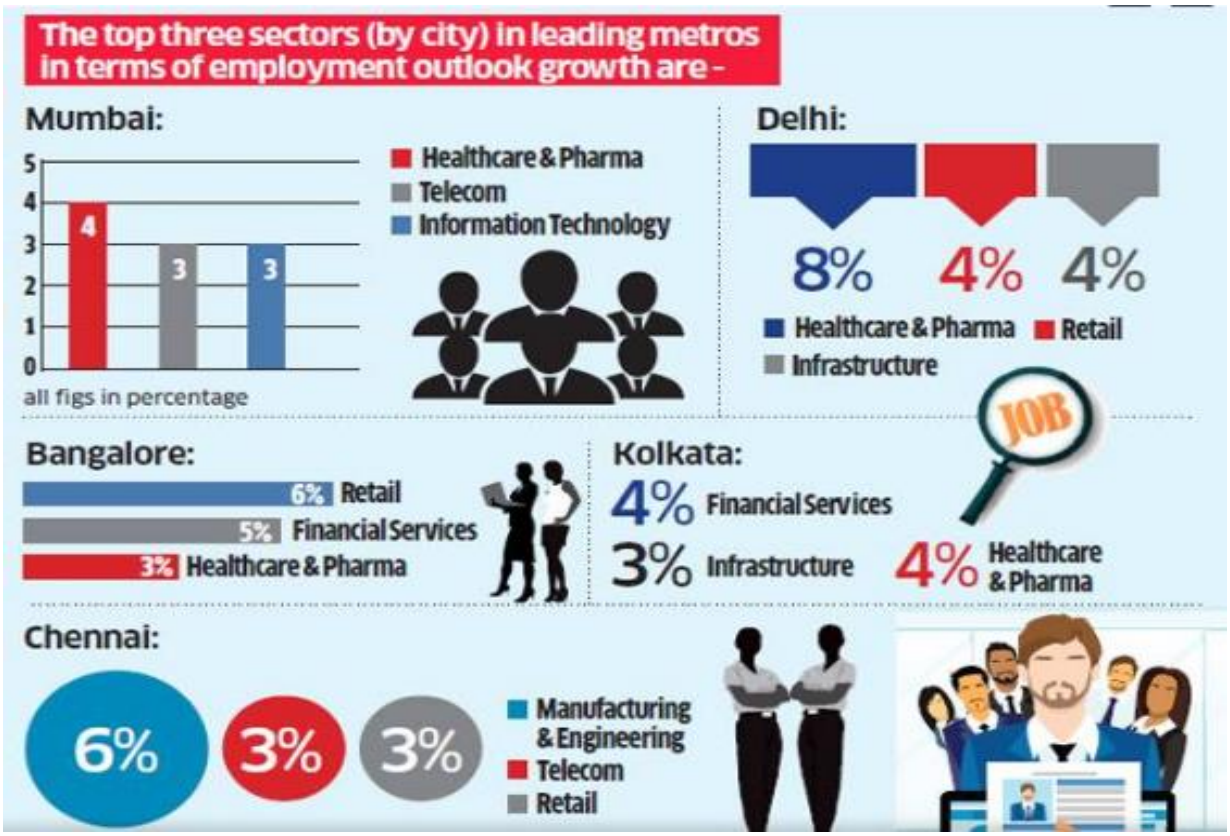


Source: https://www.ibef.org/industry/services.aspx

The contribution of the services sector has increased very rapidly in India's GDP, with many foreign consumers showing interest in the country's service exports.

Source: http://skilloutlook.com/top-news/two-three-indian-employees-confident-level-skills-utilised-company

Since the Service Sector of India is growing we need to digitalize vocational education provided for this sector. So that skills required by the employers are imparted and students are trained according to the changing needs of the digital age.



Source: http://economictimes.indiatimes.com/jobs/employment-outlook-improves-make-in-india-impact-ebbs-teamlease-report/articleshow/52196856.cms

Education as part of Service Industry (Future in India)

Source: https://assets.kpmg.com/content/dam/kpmg/pdf/2016/04/The-Indian-services-sector-Poised-for-global-ascendancy.pdf

CHAPTER 9

ICSI- EXPERT RECOMMENDATIONS

1) Let us have survey of Tricity Youth who are in +2 this year, through a psychometric test to understand their Career plans and to know the brain drain scenario.
2) We propose to establish one room Finishing School in all the senior secondary schools of the tricity to bring all the students from various backgrounds at par, who are coming from different backgrounds of the society and education system.
3) We propose that on every alternate month - Just One Day interactive interface of a training program for counselors and educators associated with Class XI and XIIth and with vocational education in schools to empower them with new trends in digital education
4) Performances has to be awarded and rewarded, hence we propose Tricity Administrations , should send innovative and outstanding educators and counselors in batches to Singapore Institute of Technology to see whats happening outside. we can organise the visits once its approved.
5) We got to equip every passing out student of +2 this year from the tricity with Life Management Skills, which are beyond Education, Employment and Entrepreneurship. As social responsibility, we are ready to organise one week complementary training for next three months at Chandigarh with their Personality Development, Communication Skills, basic ICT skills to give them feel of Life Mgt. skills .

Let us take pledge together today

Welcome to ICSI

Services sector is the largest sector contributing to the economies of 194 countries. With a 7.7 per cent growth in 2016, India has been forecast to be a 'Star Performer' among the emerging markets, according to Pricewaterhouse Coopers (PwC) report. With various international indexes and surveys highlighting India's growth story on back of service sector as a main component, International Chamber for Service Industry (ICSI), since 2005, aims to unite and strengthen the service industry network fostering global alliances. ICSI extends its services towards policy research and advocacy, investment solutions and organizing strategic conferences, events and knowledge partnerships. ICSI strives to establish harmony among various segments of this diversified industry and enable its member organizations to stay competitive in the swiftly changing global business environment.

ICSI is a one-stop destination for the entire Service spectrum and diligently works towards Human Resource Development through Education, Vocational- Skills- Capacity Building, Digital Literacy, Trainers & Training Solutions and Infrastructure Development; with a vision to empower the youth and community with various innovative programs, thereby enabling a holistic development of the society. In addition, it strives to provide NRI & Overseas support system and has adopted the North East Region for its CSR activity.

Sh. B.K. Goswami, IAS (Retd.)
Founder President - 2005

Sh. Prem Prashant, IAS (Retd.)
Sr. Patron- ICSI

Prof. Satinder Dhiman
President-2017
Woodbury University, Burbank, California

OUR SERVICES

- Act as catalyst, enabler and facilitator for the entire Service Sector through provision of a common platform for mutual & consensual interactions.
- Establishing knowledge partnerships with Govt. to design and implement friendly policies for Indian Service Industry. Policy, case and system advocacy with Government and other Stakeholders.
- To contribute to GoI's target by imparting Computer & related skills to the rural youth through its existing Skills Development programs running in India. Also, we plan to augment our knowledge partner as a hub of digitalization activities for entire country through smart class rooms inhibiting latest technologies pertaining to e-learning and teaching systems with the Communication Linked Interface for Cultivating Knowledge (CLICK) concept..
- To empower Indian youth through skill development and capacity building with quality education and vocational training for better employment and entrepreneurship opportunities, having an experiences of over a decade in this field.
- To supports the Government vision by establishing Finishing Schools in every smart city that employ the 3E concept: innovative Education, Direct Employment & Entrepreneurship.
- Empowering youth with focus on North East Region, providing vocational education to skill and develop capacities.
- To act as a strategic advisor to promote Inbound Tourism in India by spreading awareness throughout the country with wide- reaching promotional activities and providing technical inputs to facilitate all the National & International level Conclaves.
- To provide NRIs with a mutually rewarding interface with domestic corporates to share their views, expertise and resources, through NRI Conventions held annually.
- Development of Indian infrastructure to meet the special needs to Service sector including Smart Cities.
- Special initiatives for welfare, reoccupation and employment of retiring and retired defence personnel under Defence Welfare Call.

Worldwide Associations, NRI 's & Overseas Support System

- Facilitating Industry - Govt - NRI/ overseas chambers / forums / potential investors Interface by bringing them together to share common platform.
- Working as NRI facilitator for enabling NRIs, Domestic Corporate and others to share their views, expertise and resources.
- Organizing annual Conventions/Conferences/Conclaves of NRIs, Domestic Corporates & Govt. for promoting mutual business & social interests.
- Assisting Indian Corporate set up Service Industry related projects overseas/domestic market.
- Promote India and its States as a favored destinations for strategic investments through chambers / NRIs / other potential investors.
- Global alliances with major chambers / forums / missions / associations / Government Bodies in India and abroad for mutually beneficial strategic partnerships.
- Promote global trade development through participation in National and International Forums.
- Globalisation and promotion of Indian Service Industry for implementing International Standards.

CONSTITUENT SECTORS OF INDIAN SERVICE INDUSTRY & THEIR GROWTH PATTERN

ICSI ALIGNED WITH GOVT. OF INDIA FOR NATIONAL GROWTH

MINISTRY OF COMMERCE & INDUSTRY

With the objective to make India a major player in the world trade by 2020 and assuming a significant role in the international trade bodies. The chamber is committed for development and promotion of international trade and commerce of Services through formulation of appropriate international trade & commercial policy and implementation of the various provisions thereof. The basic need is to facilitate the creation of an enabling environment and infrastructure for accelerated growth of international trade, formulates, implements and monitors the Foreign Trade Policy which provides the basic framework of policy and strategy to be followed for promoting exports and trade, so as to take care of emerging economic scenarios both in the domestic and international economy. Besides, special attention is required on the responsibilities relating to multilateral and bilateral commercial relations, Special Economic Zones, state trading, export promotion & trade facilitation, and development and regulation of certain export oriented industries and commodities.

MINISTRY OF HRD

Education is the most important tool for socio-economic and political transformation. Economic growth of any nation is incomplete and unsustainable if it is not rooted in a strong, world-class educational infrastructure. To meet prevailing challenges, the Ministry's endeavour has been to achieve 'Education for All' with an inclusive approach. ICT, Digital Technology, Technology based Education, Vocational are the key pillars for the success of this arena. To become a world-leader, India needs to empower its teachers and counsellors so as to enhance the learning outcomes, which will in turn make our schools and colleges a destination for education to several countries. Also, there is need to give our students clarity about their life goals, confidence about transforming their own destiny, and conviction to become change agents for the good of others. Developing innovative strategies and future trends for employability and entrepreneurship, solutions to tackle and surpass the Digital Learning Challenges, promoting PPP in investment and imparting education, vocationalisation of education, boosting digital education, education research, consultancy, training are the few areas to be focused upon.

MINISTRY OF SKILLS DEVELOPMENT & ENTREPRENEURSHIP

As India is moving progressively towards becoming a global knowledge economy, there is the need to meet the rising aspirations of its youth. This can be achieved through focus on advancement of skills that are relevant to the emerging economic environment. For this, crucial role to be played by the efficient training providers for capacity building and skills development, Empowering Indian Youth with educational and vocational training for better employment and entrepreneurship opportunities, emancipate the teachers, trainers and counselors of India, with the support of its existing and upcoming infrastructure across the country.

MINISTRY OF TRIBAL AFFAIRS & MINISTRY OF SOCIAL JUSTICE & EMPOWERMENT

India is now officially the world's fastest growing economy. Economic growth is incomplete and unsustainable if it is not rooted through all sections and strata of the Society. To meet up-coming challenges, the Ministry's endeavour has been to achieve growth and prosperity with an inclusive approach. Therefore for the overall socio-economic development, there is a need to empower the Teachers / Educators / Trainers / Counselors dealing with SC-ST youth, so as to do hand holding to bring them at par with the others coming from better academic backgrounds, hence equipping them to overcome the challenges of life faced by SC-ST communities .

MSME SERVICE INDUSTRY & SC-ST HUB

India is witnessing rapid growth and prosperity. For this to be truly inclusive, all sections of the society need to partake in this prosperity. Today, MSMEs are present across sectors (manufacturing, trade and services) in India. The government is committed to provide momentum to the sector by including it as an integral part of industrial policy and encouraging SC-ST Hub. Besides wage employment and education, there is a need to envision, create and scale-up ventures. For this, National SC-ST Hub created to develop a supportive ecosystem for SC-ST entrepreneurs, will help by providing technological upgradation and capacity building thereby enabling them to effectively participate in public procurement processes.

AYUSH- HEALTH & WELLNESS

AYUSH System is gaining acceptance as an alternative line of treatment and are being integrated into mainstream healthcare as complementary systems. Cost-effectiveness, efficacy, low toxicity, ease of administration and relative safety renders them invaluable as viable alternatives to conventional medicine. Home to over 15,000 medicinal plants, and one of the 12 leading bio-diverse countries of the world, India is awakening to this tremendous potential, with huge impetus by the government. In lining with this, focused attention for development of Education and research, creating awareness for promotion, cultivation and regeneration of medicinal plants used in these systems is required.

TOURISM-HOSPITALITY-AVIATION & CULTURE

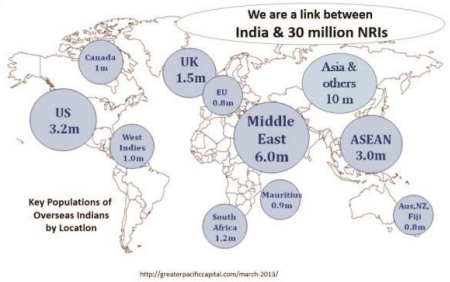
Tourism sector is unmatched in its promotion of cultural values and understanding. Cultural linkages are at the core of tourism, as it generates global dialogue and peace. While Hospitality and Aviation plays a central role in supporting tourism. Since the introduction of the incredible India campaign the sectors have picked up a pace of development. The beauty lies in the fact that Tourism-Hospitality-Aviation can generate huge employment if the untapped potential is channelized properly. For this there is a need to provide innovative ideas to promote the above sectors, spread awareness with wide reaching promotional activities and technical inputs to facilitate National & international Level Conclaves/ Conventions/Expos boosting niche tourism and various allied sectors.

INDIA (NER) - ASEAN - CLMV - SOUTH-EAST-CENTRAL ASIA
Confluence of Service Industry
(Education & Skills - Tourism - Hospitality - Aviation - Health & Wellness, Media Entertainment - Culture etc.)

Service sector is the lifeline for the socio-economic growth of a country especially in the North East Region of India with its difficult terrain. The NER's economy benefits from its geographical location as it prospers on services provided by industries like tourism, hospitality, travel etc.

Between 2011 and 2021, the NE region will have close to 17 million job seekers and only 2.6 million jobs, according to a report by the Indian Chamber of Commerce and the consultancy PricewaterhouseCoopers.

ICSI confluence for need based Education, Skills Development, Vocational, Train the Trainer, Capacity Building, Digital Literacy, Tourism Development with the focus on Employment and Entrepreneurship.



OUR JOURNEY FROM 1994

NSI FINISHING SCHOOLS NETWORK FOR LIFE MANAGEMENT SKILLS

(A LINK BETWEEN EDUCATION & CORPORATE SECTOR FOR DIRECT EMPLOYMENT AND INNOVATIVE ENTREPRENEURSHIP OPPORTUNITIES)

Holistic view Finishing School

- Aptitude cum Psychometric Test
- Personal Grooming & Personality Enhancement
- Basic ICT Lab
- Communication & English Language Lab (Aptitude-English-Career)
- Soft Skills, Interpersonal Skills & Time Management Lab
- Music, Health & Yoga Therapy Lab
- Creative / Logical Thinking Lab
- Group Discussion, Mock Interviews & Placement Process
- Life Management Skills Lab
- MSME & Technical Skills Lab

Website: www.icsiindia.in **Email**: info@icsiindia.in