Latest Trends of Educational Technology: Helping India in Picking Up Pace in Academics

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Abstract— *The government's digital India movement is gathering momentum to have far reaching consequences in the country. How can the education sector be left behind then? The human resource development (HRD) has come up with a couple of interesting initiatives to improve the state of education in schools. In recent years India has witnessed a steady rise in the sales of laptops, smart phones, touch pads, iPods; and other digital gadgets. It bears testimony to the fact that our country is slowly but steadily getting tech-savvy. According to a report published by an Indian university, the number of mobile internet users in the country is expected to reach 160 million by the end of 2016. Indeed, various modern gadgets have brought significant change in every sector, with the education sector being no exception. It is no more a hidden fact that the Indian education sector has been facing a dearth of skilled academicians and education since long. This problem has ultimately led to poor social skills among students. However, thanks to the advent of modern education technologies in India, Things are now changing for the better. These technologies have unlocked a world of opportunities for students. And because of this technological boon, students, find it easy to access various educational resources, connect with experts in just a few clicks, brainstorms with peers online from anywhere and at anytime, and most importantly, opt for hassel– free quality education. The success of education technologies has swept across the country. Further, with the incumbent Indian government's much-touted Digital India' initiative, the use and popularity of these technologies are expected to gain momentum.*

Keywords— *Digital learning, mLearning, App- based learning, ePathshala.*

I. INTRODUCTION

Educational technology [ET] is the efficient organization of any learning system adapting or adopting methods, processes and products to serve identified educational goals. This involves systematic identification of the goals of education, recognition of the diversity of learners needs, the context in which learning will take place and the range of provisions needed for each of these. The challenge is to design appropriate system that will provide for and enable appropriate teaching learning systems that could realize the identified goals. The key to meeting this challenge is an appreciation of the role of ET as an agent of change in the classroom, which includes not only the teachers and the teaching-learning process but also the systemic issues like reach equity and quality. Over the past decades, educational technology in India has taken two routes: The first route involved a large number of experiments aimed at the qualitative improvement of schools, adopted the systems approach to analyze the problems plaguing the particular situation, and had evolved a range of solutions. These have included the development of flexible system, alternative

curricula multilevel organization of classes, low cost teaching –learning materials, innovative activities, continuous support systems for teacher training, etc. while many of these experiments have demonstrated intrinsic merit ,they have been restricted to pockets of intense practice and have failed to influence the larger school system. The second route is government sponsored schemes such as the Educational Technology (ET) Scheme and the Computer Literacy and Studies in Schools (CLASS) and their present day analogues, including partnerships with global players.

This included the supply of radio- cum- cassette players, color televisions, microcomputers, present-day computer labs, and even satellite-receiving terminals. These schemes have largely remained supply-driven, equipment-centered, and disseminative in design. Scant attention has been paid to the development of the entire support system that wouldestablishETas a reliable, relevant, and timely intervention, and despite clear indications of the necessity for this action. Information and communication technologies (ICTs) have brought in a convergence of the media along with the possibility of multi-centric participation in the content-generation and disseminative process. Modern ET has its potential in schools, in the teaching of subjects, in examinations, in research, in systemic reforms, and, above all, in teacher education, overcoming the conventional problems of scale and reach through online, anytime, anywhere.

II. THE LATEST TOP 6 TRENDS IN INDIAN EDUCATION TECHNOLOGIES TO LOOK OUT FOR –BUILDING THE BASE FOR A REVOLUTION IN E- LEARNING

1. Digital Learning

Digital learning is one of the top trends being witnessed in the Indian education sector. Nowadays, more and more schools are increasingly embracing digital learning. Interestingly this trend is no more confined to metros and tier-2 cities only. Schools in rural India are now also harnessing the benefits of interactive white boards, animated and quality contents and various digital teaching and learning tools. Digital learning has also given a renewed thrust to the country's distance education sector. Who thought a few decades back that students could pursue courses in prestigious universities even from far- flung places? It has now been made possible, owing to scores of online courses provided by almost all premium universities. Besides digital learning has facilitated the availability of various vocational courses and training programs, such as soft skills training programs, foreign language courses and executive education. In a talent

starved country like India, this facility is undoubtedly nothing but a Great boon to millions of young people.

2. MLearning

As per reports, over 150 million students in our country access internet using their mobile phones. Given this whopping number of mobile internet users, most of the websites are now available in a mobile- friendly version, with their resolution and interface being reduced significantly. Further, the availability of free Wi-Fi facility has led to an increase in the number of mobile internet users. However, mobile phones are no more considered a mere entertainment medium. A report has revealed that the concept of mobile learning (mLearning) has already gained group in India. Mobile Learning, aka mLearning, enables students to learn and get academic support through mobile devices. The best part of learning is that it facilitates learner-centric learning. More specifically, it enables students to access information as per their individual requirements in order to meet their own educational objectives. In rural India where many people cannot afford computers and laptops, mLearening through smart phones is empowering them to access online educational content with no hassles. Another report has highlighted that at present, the penetration of mLearning in India is about 7-12 percent and it is expected to increase significantly in near future. It is a big leap to those people who want to pursue education but do not have proper infrastructure.

3. App- Based Learning

App- based learning has gained prevalence in India. Thanks to the growing penetration of smart phones in the country, more and more window and

Android - based educational applications are turning up to facilitate the teaching – learning process. By installing these apps, students can also get access to lots of educational websites.

4. Learning with ePad

Another growing trend observed in educational technologies in India is learning with the help of ePad and iPad. In our country, obtaining a tablet PC is no more a utopian dream, as its cost has declined in recent years. Further, several tablets PC manufacturers have started embedding their PC With diversified educational materials. Some of them include assessments, tutorials and different types of educational materials. Some of them include assessments, tutorials and different types of educational contents. Further, iPad and ePad are now increasingly being used in various competitive exams, including IIT, JEE, GMAT, and GRE.

5. Interactive Self-Assessment

These days many educational institutions are coming up with various interactive self-assessment solutions. Mainly available in CD and DVD formats, these solutions comprise of academic papers of previous years. Considered as great self-learning tools, these solutions enable students to prepare themselves for exams, evaluate their performance on their own, and find out the areas of improvement.

6. Online Educational Forums

Last but not the least; online educational forums are also gaining prominence as a potent educational technology medium. These forums facilitate a close collaboration between students and teachers. Here, students can easily connect with teachers to discuss various subjects and topics. Further, students can share and exchange ideas with peers and gain better understanding of a subject and topic. Above all, these forums have given a facelift to the age old concept of collaboration and cooperative learning.

III. TWO NEW TECH-BASED EDUCATION INITIATIVES LAUNCHED BY GOVT OF INDIA THAT CAN GREATLY HELP US

ePathshala

This application enables "learning on the go". Users can download all NCERT books on their smart phones and also view record lectures. The app also contains other types of e-books-a digital publishing software called E-PUB 3.0 and flipbooks in English, Hindi and Urdu. The app, which can be accessed on Android, iOS and windows, is helpful not just for students but also teachers. The latter can use it to view information on new teaching methods to make their classes more interesting. In addition to this, parents can also follow their wards' grades and performance in different subjects by using this app.

Saransh

Saransh is an online self-review tool for schools affiliated to the CBSE board. It will allow schools to identify areas of improvement in students, teachers and curriculum and take measures to implement change. To use the tool, parents, teachers and schools have to register on the site. While anyone can see the generic result statistics of the board and compare overall results and subject wise results between states, regions and school categories etc., the comprehensive details of the students will only be available to the registered users. The platform is presently available for classes 9 to 12 and also provides a comprehensive overview of class 10 performance since 2009 till the current academic session.

The role of teachers today is changing from simply distributing knowledge, to heeding the comprehensive feedback and high-quality assessment of the students. Rather than being teachers literally, they are becoming schools in themselves, imparting both knowledge, skills and attributes to one and all. In this way, they produce an entire bath of skilled and intelligent students in very class that they head to. Of all the facts, one is absolutely true, "no technology can replace teachers". However, it is also the responsibility of the teachers to a great extent to incorporate modern education technologies like online assignment and video lecture in the classrooms to help make the study material engaging, interactive refreshing. Apart from getting involved in studying through such innovative measures, students will understand the relevance and importance of the entire content, thereby showing more interest in studies and learning. The advantage of digital learning is also that it helps both introverted and extroverted students voice their views in the classroom. With the help of

web tools like message boards, forums and online lectures, students who are shy and hesitant can be empowered by the teachers in classrooms.

IV. UPCOMING TRENDS IN THE EDUCATION SECTOR

Growing Trend of Digital classroom / Flipped Class Rooms

Technology is leading to revolution in the way we learn. It is helping solve the problems of scale, quality of education, and learn ability of student. Teachers can now reach the full classroom through digital screens, enabling each child to get the same base content. Student engagement is higher as it combines various instructional styles. And each student gets exposure to world- class education, something that was just not available in a chalk and talk approach. Today, due to hi-tech network and multimedia, the education sector has emerged as a fast developing field. Another prominent result of the use of technology in education is that there is extensive change in the teaching and learning methods, styles and content across many schools in India. Today, students use a unique form of technology called cloud technology wherein they can easily submit and review their assignment regularly. When a school includes such facilities in a digital learning environment, the classroom becomes much more comfortable and welcoming to students. With computer and digital elements in classrooms, students feel find studying more enjoyable. The aim of a teacher however should be to create such an atmosphere which makes every student want to study. More over, considering that the young students today are usually surrounded b computers, i pads and mobiles, bringing the same technology into the classrooms makes them feel easy and acquainted.

V. VIDEO BASED LEARNING PICKING UP PACE INDIA

Video based learning makes education engaging, entertaining and exploring. The interactive preface of this segment ignites learning with a pedigree of learning out of leisure with creativity, fun and entertainment on cards via the wonderful apps, podcasts, videos, interactive software, eBooks and online interactive electronic boards. Children are excited and operative with interest to manage the showcase via their intelligence, exploring the weak techno skills of teachers and assist them in public with pride and honor and recognition. Now the classes are student- friendly, student- operated and info- packed.

VI. POPULARITY OF ONLINE COURSES- MOOCS AND OTHER DISTANT LEARNING PROGRAMMES

Talking about the popularity of MOOCS I in India, India is the second biggest market for MOOCs in the world, after the USA, 13 Indian EdTech Startups That Raised Millions to provide Millions with World-class Education

EdTech is changing the face of education and that can be seen from the substantial amount of funding they have been raising and the change in the mode of education preferences that has been noticed in a span of year.

1) Vedantu

Start Year: 2011
Founders: Anand Prakash, Vamsi Krishna, Pulkit Jain, Saurabh Saxena
Description: Vedantu is an online education platform, providing tech-based education to the students that enable personalized learning. Students and teachers get access to live learning in between them. On this platform, students can select a teacher from the lot of quality teachers. User can use tools like whiteboard, audio and video technology for the interactive learning sessions. The company is very focused on technology and has created in-house products, which is much optimized for low bandwidth conditions
Funding: $ 5 Million from Tiger Global and Accel.

2) UEducation

Start Year: 2015
Founders: Ravijot Chugh, Prabhav Phalgun, Ronnie Screwvala, Mayank
Description: The Company's full stack approach of innovating in content, technology and service gives it an advantage over any other edtech ventures. The courseware is sourced from both academicians and industries. They are focusing on getting the industry participate in the curriculum and deliver the course. Courses will be co-branded in partnership with university whose faculty will be responsible for create the curriculum.
Funding: $ 15 Million by Ronnie Screwvala

3) Toppr

Start Year: 2013
Founders: Hemanth Goteti, Zishana Hayath
Description: It's an online subject-learning platform changing the way students prepare for IIT JEE, AIPMT, and Boards in India. Students can take unlimited tests, get feedback reports and compare rankings. It is the one stop solution as students get to focus on improving their performance with the question banks, unlimited tests with feedback, suggested practice tests, rank comparison, 24*7 support and the mobile app of Toppr:
Funding: $12 Million from SAIF, Helion, Fidelity Growth

4) Testbook

Start Year: 2013
Founders: Manoj Munna, Ashutosh Kumar, Narendra Agrawal
Description: The platform simplifies the process of exam preparation.

Learners appearing for Mock Test in Gate, Aptitude, SBI Bank PO, SBI Clerk, IBPS PO and IBPS Clerk can practice, analyze and improve.

Users get best quality tests at reasonable prices. Platform can be accessed easily and lets you track your performance, evaluate and improve with each test at national level.

Funding: $15 Million in 2014

5) Plancess EduSolutions

Start Year: 2012

Founders: Nitesh Salvi

Description: the company aims to reach IIT JEE aspirants and deliver preparation materials. The material delivered is prepared by experts. The material delivered is in the form of online video lectures

Funding: $10 Million that includes $2 Million of seed funding from Aarti Group's Promoters Gogri Family in 2015.

6) Embibe

Start Year: 2012

Founders: Aditi Avasthi

Description: It is an online test prep portal specializing in engineering entrance exams. The Mumbai-based startup currently has 15,000 students on board and wishes to expand, offering medical prep. All one need to do is create a free account and start practicing any chapter.

Funding: The company received $4 Million from LightBox Ventures & Kalaari Capital in May 2014.

7) iProf Learning Solutions

Start Year: 2009

Founders: Sanjay Purohit

Description: India's largest PC based education content delivery company, brings to you a smarter way of studying through its advanced android based application that works on offline mode as well. It enables students to learn and revise concepts for school curriculum for classes IX to XII and important tests like IIT JEE, AIPMT, CA-CPT and more.

Funding: $15 Million from IDG & Norwest

8) Meritnation

Start Year: 2009

Founders: Pavan Chauhan

Description: India's most popular and largest online education platform with over 8.2 million K-12 students. Users study on Meritnation using live classes, animated videos, interactive exercises, practice problems, tests and more. It has curriculum-aligned content to major boards like CBSE & ICSE as well as State Boards.

Funding: $15 Million by InfoEdge

9) SimpliLearn

Start Year: 2009

Founders: Krishna Kumar

Description: Provides professionals with certification training courses. It helps professionals across the globe realize their dreams.

Funding: $25 Million from Helion, Kalaari and Mayfield

10) BYJU

Start Year: 2008

Founders: Byju Raveendran

Description: It offers preparation training for different entrance tests and competitive examinations. It is now India's leading provider of supplemental school curriculum classes for classes 6-12 and test prep training for CAT, JEE, IAS, GMAT and GRE.

Funding: $40 Million from Sequoia and Aarin

11) CultureAlley

Start Year: 2012

Founders: Neeharika Bhartiya, Nishant Patni, Pranshu Bhandari

Description: It offers self paced audiovisual lessons and interactive practices online. User can master conversations, phrases, vocabulary, pronounciation and more while browsing the web.

Funding: $6.5 Million from Tiger Global and Kae Capital

12) EduKart

Start Year: 2011

Founders: Ishaan Gupta, Mayank Gupta, Vijay Shekhar Sharma

Description: India's leading education marketplace offering 2000+ degree, diploma, certificate, entrance coaching & K-12 courses. Sudents can apply online, distance and correspondence courses.

Funding: $1 Million from Holostik Group's UnitedFinsec(fami

Background of ICT in Schools In today's world where acquiring knowledge is not merely a personal choice but almost a necessity, there has been increased focus among all stakeholders to use different means to provide more of enriched knowledge to individuals. ICT has an important role to play in this regard. There has been recognition of the need to introduce ICT at the school level so that students get an early start in using IT. The National Policy on ICT in School Education, 2012 outlines the vision and use of ICT in school education and management. Education being a subject in the concurrent list, roles and responsibilities have been defined for the Centre as well as States. It provides a roadmap for development of infrastructure and digital resources and capacity development at pre-service and in-service levels. The Government of India has been promoting the use of ICT in many ways. Ministry of HRD has a specific ICT School Scheme which extends support to the states. 1. to provide computer aided education in secondary and higher secondary schools, 2. to set up smart schools where use of technology is demonstrated, 3. capacity enhancement of teachers and 4. e-content development As maybe seen in the following figure, there has been a steady increase in the extent of support being provided by the Government of India. The year FY2011-12 has witnessed the highest amount of funds being released to states for ICT in schools (INR 57,573 lakhs).
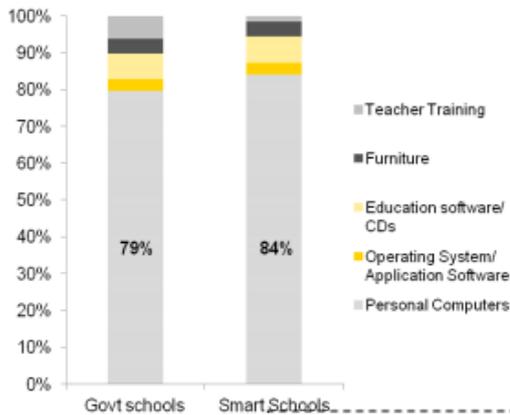
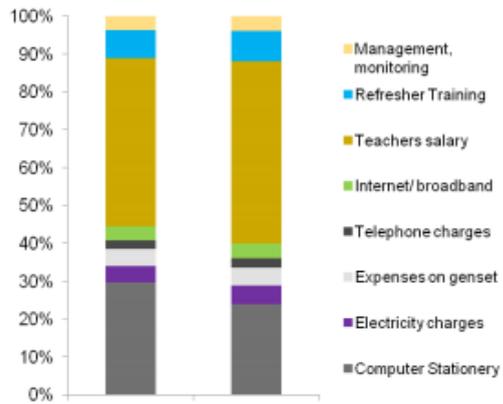Yr-wise Trend in Fund Allocation (2005-2013)
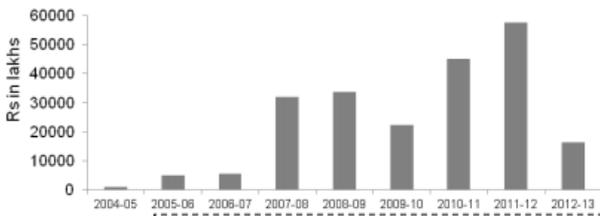
Source: 10th, 11th Five Year Plan Allocations Plan

The total fund released was INR 2187 Cr and following are the top 10 states (Below figures in Lacs). A large part of expenses are being used towards teacher salaries. Source: 10th, 11th

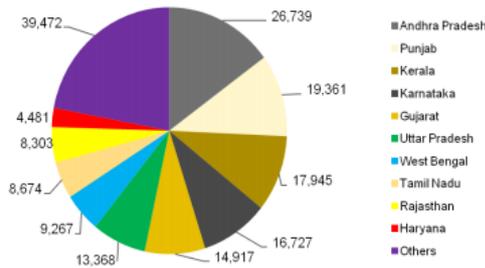Capex / non-recurring expenditure (Rs. In lakhs)

Recurring expenditure (Rs. In lakhs)

Source: 10th, 11th Five Year Plan Allocations

Five Year Plan Allocations

Fund Release to States under ICT Schools Scheme during 2005-13 (Rs. In Lakhs)

Source: 10th, 11th Five Year Plan Allocations

Recognizing the increasing importance of technology in education and employment, the Indian government has a scheme that grants every public school district, regardless of the number of schools it contains, of Rs.5m[£49,700] every year to invest in educational technology.in india's booming private education sector, technology is being adopted much more quickly.

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