A brief view on Technological Challenges and trends in upcoming one to five year time horizon in India

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Abstract: In India we have seen significant changes during last two decade after implementation of globalization, privatization and liberalization policies introduced by government of India in 1991 in Indian education sector. The scope for professional education increase with the changing shift in Indian education system. Private universities and self finance colleges were established by various groups all over the India. The significant changes in technologies also affected the education sector in India .New challenges evolve with advancement of technology in Indian education system. Globalization impact also leads to have increased scope for international school and colleges in India .Collaboration are done by Indian education groups with international institutes by changing environment of the country and education sector of India. New changes arise due to the demand of quality education in Indian education sector in India with all these the needs challenges are also increased in terms of economics, technology, socio-politics and psychology. In this paper we will briefly study regarding increased challenges in terms of technological growth in Indian developing economy and trends and challenges in time horizon of one to five year in terms of technological challenges in countries like India. .

Keywords: Education, Technological Challenge, Globalization, Quality, Economics, Socio Politics, psychology, Ubiquity, Collaborative, Hybrid, Data Driven, Agile, Reward

I.   INTRODUCTION

In India we have seen significant changes during last two decade after implementation of globalization, privatization and liberalization policies introduced by government of India in 1991 and education sector grow rapidly and new challenges raised due to introduction of the new globalization, privatization and liberalization policy. Due to growth and advancement new challenges emerge like economical challenge, technological challenge, socio-political challenge and psychological challenge. In all of these challenges technological challenge becomes most vital for the organization due to many reasons. The reasons for these are advancement of technology, professional development, and resistance of change of education sector employees, Massive open online courses availability, Arrival of new models for schooling, delivering informal learning, failures of personalized learning and failure to use technology to deliver effective formative assessments. Along with these new trends and opportunities are emerged in Indian Education System. New communication technologies, particularly the Internet, appear to offer exciting possibilities for overcoming geographical access and cost barriers to learning. Yet it is hard to imagine that these technologies can have a positive influence on the education of children and adults who lack basic living resources and live with an underdeveloped educational infrastructure in an environment of political instability. The discussion highlights the technological challenges and trends in Higher education in to one to five year time horizon for the country like India.

II.   OBJECTIVES OF THE STUDY

This paper is generally focused on the Key Trends Accelerating Higher Education Technology Adoption, Significant Challenges Impeding Higher Education Technology for Higher   education.

III.   REVIEW OF LITERATURE

Author	Title	Findings
Lewins and Stuart (1991)	Educational Innovation in Developing Countries; Case studies of change makers	Propose that educational provisions in developing countries were limited due to their governments' failures to recognize and address the issues of access, culture, and the gender gap that affected poorer population groups.

Saheb,T(2005)	Education and digital divide in developing countries	The Indian Gurukul system, the first schools in Egypt, and the first universities in Babylonia, are only a few examples of early and advanced education systems among developing nations
Malik, Belawati & Baggaley, 2005	Framework of collaborative research and development on distance learning technology for Asia	In Asia alone there are over 560 million adults, or 70 percent of the world's adult population, who cannot read or write – including the majority of females (66%)
Kamau,2001	A context of technology constraints	The need for educational infrastructures to address the widening gap between the educated and non-educated
1993, UNESCO	World education report	Developing countries lacked educational infrastructures, teachers, economic structures, and technologies to support the demand for education at all levels.

The NMC (New Media Consortium) is an international community of experts in educational technology mentioned in NMC Horizon Report 2014 Edition is a collaborative effort between the NMC and the EDUCAUSE Learning Initiative (ELI), an EDUCAUSE Program. They have describes annual findings from the NMC Horizon Project, an ongoing research project to identify and describe emerging technologies likely to have a learning, teaching, and creative inquiry in education. Six key trends, six significant challenges, and six emerging technologies are identified across three adoption horizons over the next one to five years, giving campus leaders and practitioners a valuable guide for strategic technology planning. The format of the report is new this year, providing these leaders with more in-depth insight into how the trends and challenges are accelerating and impeding the adoption of educational technology, along with their implications for policy, leadership and practice.

IV. KEY TRENDS ACCELERATING HIGHER EDUCATION TECHNOLOGY ADOPTION

a. FAST TRENDS: DRIVING CHANGES IN HIGHER EDUCATION OVER THE NEXT ONE TO TWO YEARS

Growing Ubiquity of Social Media: -Education paradigms are shifting to include more online learning, blended and hybrid learning, and collaborative models. Students already spend much of their free time on the Internet, learning and exchanging new information. Institutions that embrace face-to-face, online, and hybrid learning models have the potential to leverage the online skills learners have already developed independent of academia. Online learning environments can offer different affordances than physical campuses, including opportunities for increased collaboration while equipping students with stronger digital skills. Hybrid models, when designed and implemented successfully, enable students to travel to campus for some activities, while using the network for others, taking advantage of the best of both environments.

*Integration of Online, Hybrid, and Collaborative Learning: -*There is a growing interest in using new sources of data for personalizing the learning experience and for performance measurement. As learners participate in online activities, they leave an increasingly clear trail of analytics data that can be mined for insights. Learning analytics experiments and demonstration projects are currently examining ways to use that data to modify learning strategies and processes. Dashboards flter this information so that student progress can be monitored in real time. As the fled of learning analytics matures, the hope is that this information will enable continual improvement of learning outcomes.

b. MID-RANGE TRENDS: DRIVING CHANGES IN HIGHER EDUCATION WITHIN THREE TO FIVE YEARS

Rise of Data-Driven Learning and Assessment:- There is a growing interest in using new sources of data for personalizing the learning experience and for performance measurement. As learners participate in online activities, they leave an increasingly clear trail of analytics data that can be mined for insights. Learning analytics experiments and demonstration projects are currently examining ways to use that data to modify learning Strategies and processes. Dashboards flter this information so that student progress can be monitored in real time. As the field of learning analytics matures, the hope is that this information will enable continual improvement of learning outcomes.

Shift from Students as Consumers to Students as Creators: shift is taking place in the focus of pedagogical practice on university campuses all over the world as students across a wide variety of disciplines are learning by making and creating Rather than from the simple consumption of content. Creativity, as illustrated by the growth of user-generated videos, maker communities, and crowd funded projects in the past couple years, is increasingly the means for active, hands-on learning. University departments in areas that have not traditionally had lab or hands-on components are shifting to incorporate hands-on learning experiences as an integral part of the curriculum. Courses and degree plans across all disciplines at institutions are in the process of changing to reflect the importance of media creation, design, and entrepreneurship.

c.   LONG-RANGE TRENDS: DRIVING CHANGES IN HIGHER EDUCATION IN FIVE OR MORE YEARS

Agile Approaches to Change:- There is a growing consensus among many higher education thought leaders that institutional leadership and curriculum could benefit from agile startup models. Educators are working to develop new approaches and programs based on these models that stimulate top-down change and can be implemented across a broad range of institutional settings. The Lean Startup movement uses technology as a catalyst for promoting a culture of innovation in a more widespread, cost-effective manner. Pilots and other experimental programs are being developed for teaching and improving organizational structure to more effectively nurture entrepreneurship among both students and faculty.

Valuation of Online Learning: - Over the past several years, there has been a shift in the perception of online learning to the point where it is seen as a viable alternative to some forms of face-to-face learning. The value that online learning offers is now well understood, with flexibility, ease of access, and the integration of sophisticated multimedia and technologies chief among the list of appeals. Recent developments in business models are upping the ante of innovation in these Digital environments, which are now widely considered to be ripe for new ideas, services, and products. While growing steadily, this trend is still a number of years away from its maximum impact. Progress in learning analytics, adaptive learning, and a combination of cutting-edge asynchronous and synchronous tools will continue to advance the state of online learning and keep it compelling, though many of these are still the subjects of experiments and research by online learning providers and higher education institutions.

V.   SIGNIFICANT CHALLENGES IMPEDING HIGHER EDUCATION TECHNOLOGY ADOPTION

a.   SOLVABLE CHALLENGES: THOSE THAT WE UNDERSTAND AND KNOW HOW TO SOLVE

Low Digital Fluency of Faculty:- Faculty training still does not acknowledge the fact that digital media literacy continues its rise in importance as a key skill in every discipline and profession. Despite the widespread agreement on the importance of digital media literacy, training in the supporting skills and techniques is rare in teacher education and non-existent in the preparation of Faculty. As lecturers and professors begin to realize that they are limiting their students by not helping them to develop and use digital media literacy skills across the curriculum, the lack of formal training is being offset through professional development or informal learning, but we are far from seeing digital media literacy as a norm. This challenge is exacerbated by the fact that digital literacy is less about tools and more about thinking, and thus skills and standards based on tools and platforms have proven to be somewhat ephemeral.

Relative Lack of Rewards for Teaching: - Teaching is often rated lower than research in academia. In the global education marketplace, a university's status is largely determined on the quantity and quality of its research. According to the Times Higher Education's World University Rankings methodology, research and citations account for 60% of a university's score, while teaching is only half that. There is an overarching sense in the academic world that research credentials are a more valuable asset than talent and skill as an instructor. Because of this way of thinking, efforts to implement effective pedagogies are lacking. Adjunct professors and students feel the brunt of this challenge, as teaching-only contracts are underrated and underpaid, and learners must accept the outdated teaching styles of the university's primary researchers. To balance competing priorities, larger universities are experimenting with alternating heavy and light teaching loads throughout the school year, and hiring more adjunct professors.

b.   DIFFICULT CHALLENGES: THOSE WE UNDERSTAND U FOR WHICH SOLUTIONS ARE ELUSIVE

Competition from New Models of education:- New models of education are bringing unprecedented competition to the traditional models of higher education. Across the board, institutions are looking for ways to provide a high quality of service and more learning opportunities. Massive open online courses are at the forefront of these discussions, enabling students to Supplement their education and experiences at brick- and-mortar institutions with increasingly rich, and often free, online offerings. At the same time, issues have arisen related to the low completion rates of some MOOCs. As these new platforms emerge, there is a growing need to frankly evaluate the models and determine how to best support collaboration, interaction, and assessment at scale. Simply capitalizing on new technology is not enough; the new models must use these tools and services to engage students on a deeper level.

Scaling Teaching Innovations: - Our organizations are not adept at moving teaching innovations into mainstream practice. Innovation springs from the freedom to connect ideas in new ways. Our schools and universities generally allow us to connect ideas only in prescribed ways — sometimes these lead to new insights, but more likely they lead to rote learning. Current organizational promotion structures rarely reward Innovation and improvements in teaching and learning. A pervasive aversion to change limits the diffusion of new ideas, and too often discourages experimentation.

c.   WICKED CHALLENGES: THOSE THAT ARE COMPLEX TO EVEN DEFINE, MUCH LESS ADDRESS

Expanding Access: - The global drive to increase the number of Students participating in undergraduate education is placing pressure across the system. The oft-cited relationship between earning potential and educational attainment plus the clear impact of an educated society on the growth of the Middle class is pushing governments to encourage more and more students to enter universities and colleges. In many countries, however, the population of students prepared for undergraduate study is already enrolled — expanding access means extending it to students who may not have the academic background to be successful without additional support. Many in universities feel that these institutions do not have sufficient time and resources to help this set of students

*keeping education relevant :-*Many pundits worry that if higher education does not adapt to the times, other models of learning (especially other business models) will take its place. While this concern has some merits, it is unlikely that universities as we know them will go away. There are parts of the university enterprise, however, that are at risk, such as continuing and advanced education in highly technical, fast-moving felds. As online learning and free educational content become more pervasive, institutional stakeholders must address the question of what universities can provide that other approaches cannot, and rethink the value of higher education from a student's perspective.

VI.   CONCLUSION

All these challenges and trends are going to be vital according to the *NMC Horizon Report 2014* Edition in higher education in terms of advancement in technology and trends in technology in upcoming one to five years rather than the other challenges like population, poverty, unemployment, illiteracy, culture, gender gap and many more.

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