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Benefits of Advances in Technology in the Educational Sector

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Abstract
In recent times, post pandemic, globally academic institutions have changed over to online teaching and examinations. Globalization prompted, multitudes of opportunities have opened up, and several countries are in a collaborative mood, to hasten their unique position in the global scenario. The most advanced nations are in a dominating and commanding position, while the developing nations are trying to find their niche in the competition; trying to break through their age old practices. In all this, technology holds the key to make advanced nations to remain at the top.
Individually all the countries are restructuring and inventing newer approaches to education, to educate their masses in line with global trends. This can only be achieved side by side with advances in technology. This is obviously needed in a higher magnitude for the developing nations to combat, and address growing unemployment, failure of the monsoons, and tackle the educational problems of their youth. This paper discusses the benefits of technology coming in to aid massive educational infrastructure needed by the ever growing population needs!
Keywords:
Advances in technology, primary, secondary and tertiary education, E-learning, blended learning, self learning methods

I. Introduction

Indian system of education needs a total change. What India needs is a holistic model of education; where students are prepared in all ways than one – knowledge, which is skill based! For this to happen, India must take recourse to advanced technological inputs, by which they could reach the growing population. E-learning must be expanded across globally. The entire process of On-line patterns of education implies that cheaper and more economical sources of learning could be made available to the poorer sections of society the world over.

Current and the Changed Education System India Needs
Currently, India professes an age old system of education; non-congenial and disconnected concepts!

At the ***Primary level***, what is needed is a holistic approach, an education in the local language at primary schools – covering salient features of body, mind, neighborhood and an attitude developed of living together without religion, race or creed. These concepts together formulate the education/knowledge system. Learning while playing along with a peer learning approach needs to be promoted. This should be combined with Yoga's and physical fitness exercises as regular rituals. Gradual introduction to Information Technology {IT} could be mixed in certain programmes, to usher in creativity, music and dance! State Level initiative is necessary to implement such schemes, but not as policy intervention. NCERT & CBSE could lead the initiative in this direction.

Secondary education currently focuses more on theory and knowledge and less on skills. Analytical concepts are taught in English. This leads to a rote procedure, rather than promoting conceptual thinking in the local language. Skill predominant subjects need to be introduced, along with a *Choice Based Credit System.* Focus needs to be on Excellence and Relevance. Skill intensive subjects for vertical mobility in Universities, Foreign languages needed to promote study of a wide range of literature. Innovation and Oral expression should be the major thrust areas of such a holistic education. Education and skill based training needs to be blended in the curriculum being offered!

Tertiary Education as of now is mainly on par with western education systems. Skill based subjects are rather low or poor. Of late, Choice Based Credit System is being followed in some of the universities, but it should be made mandatory. Higher education should be one which addresses the heavy unemployment situations facing the country at the moment, apart from giving innovation the thrust. Teaching methods must

reflect the innovation skills, problem finding, analytical and critical thinking. Teachers in some or most of the technical institutions are unaware of the teaching methods. Bloom's Taxonomy modified for our environment to be set and followed. Research undertaken by faculty is scarce and unconvincing. For research in the technical education field, the recommended course Research Methodology is insufficient; instead a course on *Design Research Methodology* is suggested. Publications jointly by faculty and students need to be encouraged. Entrepreneurship is mostly missing. India ranks 46th among the 132 economies featured in the GII 2021 {Global Innovation Index 2021}.

India has a vast population to cope with. India's GER {Gross Enrollment Ratio} has risen from 26.3% in the period 2018-2019 to its present level of around 29% in 2021-2022 for the age group 18-23. It is being aimed at around 50% by 2035, which is probably attainable, as at present about 50% are already at the higher secondary stage!

E-Learning

To ensure that E-Learning could be distributed across the continents satisfactorily, it is the prime duty of every government to enhance their ICT capabilities – non interruptive ICT systems! A variety of ICT techniques should be made easily available to the downtrodden and the have-nots, and within easy reach of the average person, which at present seems to be very expensive. Of course, time management skills, social interactions being minimal, and newer systems in place to approach practical problems, seems to be the need of the hour. The modern youth is now faced with growing unemployment, feeling a sense of insecurity and these should be dispelled.

Advantages of E Learning – Technology Aids Teaching Practices

Some of the oft repeated advantages of E-Learning, student can learn from their own homes, manage programs easily outside class hours, avoid bullying by seniors or peers, take breaks as convenient, no external distractions, communications could be through audio, video, personal telephonic contacts, improves productivity, collaborating with peers and others easily possible, and are isolated in engagement with teachers. Critics of E-Learning may argue that a very young student may need parental guidance, demonstrations of practical problems are difficult, perhaps a student may need physical support, absence of Wi-Fi and computers/mobile phones, interrupted signals from the ICT systems, lack of societal interaction, and limited to a single sitting location for long times.

Blended Learning

Indian education system is fallout of the British system of education for over seventy five years and still continues in a modified format. With the Indian Diasporas, and the family bindings that we Indians are famous for, there is a perceivable change in the minds of the Indian youth. It is not totally possible to have an education patterned on the fully E-Learning system. We need to have a judicious mix of the on-line and off-line teaching learning processes having a blended approach, interaction with nature, family and society and still be of a globally accepted one. At the primary level, it can be mostly off-line teaching with some gaming options with ICT! At secondary levels, it could be a mix of off-line, on-line and peer learning! In the case of higher education, off-line predominantly followed with off-line and pear learning {real and virtual} could be adopted. This could eventually turn out to be a problem in the rural areas, where ICT facilities {Wi-Fi} may be minimal, or interruptive; in such cases resort to the television networks; which again implies strengthening our towers and connecting facilities.

Self Learning Materials & Other Facilities

Self Learning Materials like CDs, USBs, DVDs, could be supplied with SLMs loaded, so that education could be imparted through *TVs/Radios*,if such appliances are availabe in their homes. *Blended Learning methods* are possible when the students use the SLMs at home and then have physical classes and interactions, maintaining all health protocols. In order to ensure that such learning could be successful, the governmental and other ICT agencies should make ensure that continuous power, ICT connections are available 24x7 – this is going to be a major hassle for the developing and under-developed areas, particularly those located in the rural areas.

The changing paradigms of global education have redefined our ways of looking at online systems of education. Efforts are on to turn education to one of a holistic nature, skills imparted and a ready to work situation being developed for any student interested in pursuing a career, be it in medicine, engineering, arts and sciences or law. Blended learning with interactive sessions at the tertiary level is the one sought after. The quality education being offered should be affordable and accessible to all, across all sections of society. Such an education requires highly sophisticated systems of visualizers ranging from ultra-portable to wireless to platform; with good connectivity and visibility. Wireless tablets are becoming more common, so that one could

discuss topics from anywhere. Further the existence of internet and other mass media systems and digitized libraries could help in the virtual transformation.

Examination Systems

Our Indian sysem of education, and the genreral attitude of the country's diaspora is that academic achievement is the one that is most valued, rather than the holistic development of the children. The ASER 2020/21 Reports state that school dropouts at the secondary level have been consistently high, and the main cause is that students are continuosuly promoted to higher sections /classes even if they do not perform; and ultimately when they reach the Grade 9, which compels them to pass, if they were to proceed hgher- this is the stage for drop outs to increase – specially amongst the Scheduled Tribes and poverty stricken rural areas. In all these methods, it often becomes necessary for the student to be in consant touch with his school and teacher, particularly when a person is working or learning for a university degree or a certificate.

The major problems arising out of the online examinations are interupted ICT connectivity, rampant impersonation, peeking, external assistance, student-teacher collaboration, and using their own gadgets with details of all theories and practical. In this, the students preparing for the on-line examinations should subscribe to the syllabi or the curriculum of that particular examination or school, and more often it becomes extremely difficult for medical and practical oriented programmes. As had been observed earlier, that in the Faculties of Medical Sciences, {Medicine, Dentristry, Physiotherapy, Nursing, Biological Sciences, Applied Health Sciences} and in Engineering, it becomes toatlly practical to teach the nuances of the practical or an experiment. On the other hand MCQs were preferred by many a student as it gives one an ample choice to do better at examinations. Hybrid T-L processes offer techniques of self /peer assessments; but such systems may escalate the cost of education until proper methods are established.

II. Conclusion

Educational systems definitely need a change. E-learning has come to stay – a type of education easily affordable to the masses the world over. ICT plays a great role in spreading education, provided the role players promise an uniterrupted connectivity. Technology needs to be gradually inproved and upgraded if the system has to be successful. Pedagogical methods need to keep in touch with the pace needed globally.

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References

[1]. Om Vikas, Gopalakrishnan, G {2022} Views on Online Teaching and Learning Processes and National Education Policy -2020, Association of Indian Universities, University News, Vol. 60, No.18,May02-08,2022, pp.3-7

[2]. Rachel Wise {2020} 12 Pros and Cons of Online Learning for Students, Education & Behaviour, Nov.25, 2020

[3]. Sharanya Menon{2020} Education in India Needs an Overhaul, IDR- Education, Nov.18, 2020

[4]. Blome,C {2017} Increasing Learning with Technology, Walden University, *www.WaldenU.edu/connect/newsroom/spotlight/2017/increasing-learning-with-technology*, 24 Jan.2017

[5]. Esther Duflo, James Berry, Shobhini Mukerji and Marc Shotland{2012-2013} Improving Learning Outcomes through the Government School System in India, *J-PAL South Asia*

[6]. Berry, James, Harini Kannan, Shobhini Mukherji, and Marc Shotland {2018} Failure of Frequent Assessment: An Evaluation of India's Continuous and Comprehensive Evaluation Program, Working Paper, Nov. 2018-*J-PAL South Asia*.

[7]. Rukmini Banerji, Wilima Wadhwa {2021} The COVID Effect: Changing Patterns in Public and Private Inputs into Schooling in Rural India, Annual Status of Education Report {Rural} 2021, Commentary pp.8-10

[8]. Annual Status of Education Report {Rural} 2020 & 2021

[9]. Lina Elsalem, Nosayba Al-Azzam, Ahmad A.Jum'ah, Amer Mahmoud Sindiani, Khalid A. Kheirallah {2020} Stress and Behavioral Changes with Remote E-Exams during the Covid-19 Pandemic: A Cross-Sectional Study among Undergraduates of Medical Sciences, *Annals of Medicine and Surgery*, *Volume 60*, December 2020, Pages 271-279