A RADICAL RETHINKING OF EDUCATION SYSTEMS FOR THE 21ST CENTURY: FROM RHETORIC TO REALITY

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Abstract

What does it mean to be a successful learner or graduate in today's world? While in years past, a solid acquisition of the "three Rs" (reading, writing, and arithmetic) and mastery in the core academic subjects may have been the measure of attainment, the world of the 21st century requires a radically different orientation. Education plays a vital role in developing a nation culturally, economically, and socially. With the advent of standard-based reforms, the quality of teachers has become a major concern of policy-makers, college and university presidents, especially at the colleges of teacher education and the public in general. Education in India has witnessed a paradigm shift in recent times. There was once a time when the guru, his knowledge and experience were considered infallible and total. Today, education is witnessing unprecedented scrutiny from all segments of society. Information technology plays a pivotal role for the development of education. The world is changing at a previously inconceivable pace. We must now understand that we are preparing our children for the unknown, unseen and unpredictable. This is not easy to digest. Therefore, 21st century higher education needs to be capable of teaching students how to deal with unpredictability and change. This paper is based on a review and synthesis of secondary data and published work and identifies the roles that technology plays in enhancing teaching and learning through digital technology, and discusses how these strategies benefit teachers and learners. The present qualitative study aimed to investigate effective teaching in higher education in Indian based on the experiences of best professors in the country.

Key words: Education, twenty-first century learning, educational research, scientific effectiveness, digital literacy, education reform.

Introduction

"I dream of a digital India where quality education reaches the most inaccessible corners driven by digital learning."

- *Shri Narendra Modi*

Prime Minister Narendra Modi urged teachers to use technology as teaching aid. Prime Minister has introduced initiatives such as e-education, e-basta, Nand Ghar which will impart education using technologies including smart phones, mobile apps and internet services in far-flung areas. Our world is changing, and in order to prepare our children for this new world we need to change the way we educate them. In the 21st century educators must create a curriculum that will help students connect with the world and understand the issues that our world faces. The 21st century has introduced new

imperatives into education practices, stimulated by increasing concern about global inequities and lack of fairness. As demonstrated first by the Millennium Development Goals, and currently by the Sustainable Development Goals (United Nations, 2016), the concerns are about both access to education and quality of education. The how and why of learning becomes central and is far more important than the what or who from past models. The 21st century policies about equity have consequences for how education systems must cater to all children and youth. Education systems need to provide educational experiences relevant to the 21st century world that youth face, and this means the introduction of new learning domains-domains that are characterized by transferable skills and competencies. The education reforms called for in 21st century education initiatives have been characterized as radical. A radical change with a strong focus on learning has not only been called for by learning scientists, but also by some very near to policy-making at different times in the Schooling for Tomorrow programme. International efforts to reformulate education for 21st century teaching and learning are well-funded initiatives by coalitions including governments, not-for-profit organizations, and large corporations. As our world recognizes increased globalization, 21st century learning refers to the skills and technologies that will position our students to succeed in a world that ever increasingly requires collaboration, critical thinking, adaptability, grit, perseverance and relies less on the learning of facts and data. Students must approach lifelong learning with a flexible mindset as they tackle 21st century issues. They must learn to work with and listen to a variety of points of view. Education has a fundamental role to play in personal and social development. Goal of modern education: The goal of modern education is to focus on ensuring that children would be problem solvers, decision makers, and enablers. Students need to leave school with life skills that help them navigate challenges even if they don't know the solutions to them.. As a world we are seeing that there is more and more need for global cooperation and by the time our current students enter the work force that will increase exponentially. As such, current classrooms need to be transformed into global classrooms where a variety of cultures are explored and discourse around justice and tolerance become essential components. Teachers need to demonstrate their willingness to change, be flexible and avoid rigidity; to be willing to try new

things and fail. From failure come grit and the ability to move on from something that doesn't work to something that does work. Students must be encouraged to try, to be allowed to fail and from that failure learn and move on. Two interrelated myths arise from the way practitioners in higher education respond to an increased emphasis on technological delivery. One myth stems from the view that tertiary education students are digital natives who have universal and uniform digital experiences. This myth presumes that the technological experiences of these students are homogeneous and linked to a sophisticated knowledge and understanding of information and communication technologies (ICTs).

Review of Literature

Siddiq, Scherer, Tondeur (2016) found that the 21st century education by transforming and orienting its academic dynamics and operation based on the principles of learning analytics. The 21st century School will not only have to meet the educational requirements of a networked context, but the development of communication skills, teamwork and other "21st century competencies"

Abao, Dayagbil, & Boholano (2015) found that Education in the 21st century highlights globalization and internationalization. Any advancement of technology presents theoretical constructs and realistic insights in the development and enhancement of knowledge, skills, and attitudes among students and teachers.

Koichiro (2013) revealed that the beginning of the 21st century, the focus of educational research centered on the issues of public education was transformed. Educational research is now also trying to understand the relationship between education, schooling and university education with the development of society.

Zaidieh (2012) study that The social network sites focus heavily on building online communities bound to together with common interests or activities. Thereby provide pre-service with tools that help them to do so. In the field of E-Learning, the social network sites can be used to communicate and discussed topics online.

According to Vie (2008) attempted to move beyond these instrumental views of technology in examining the digital divide and in

doing so have raised important questions about the larger societal issues connected to the issues of technological literacy and access. In line with this, the pre-service teachers used technology in instruction.

Objectives of the Study

This paper analyses the emerging literature on the re-thinking and re-imaging the 21st century education and how digital learning and skill development attempts to integrate insights from technology in order to better predict individual outcomes and develop more effective policy. Ultimately, the study aims to provide valuable suggestions of how best to provide quality, non-professional higher education in the 21st century.

Methodology of the Study

The present study is exploratory in nature. Keeping in view the nature of research, the methodology framed out here is essentially based upon the secondary information. The data required for the study is mainly collected from secondary source such as newspapers, magazines, journals, annual reports, periodicals, govt. documents, regulatory publications and related planning documents, websites etc. Overall this exploratory research tries to explore the existing condition of the variables and engaging and empowering learning through digital technology and radical rethinking of education systems for the 21st century. This research aims to develop an understanding of the re-imagining education in the 21st century. By employing a descriptive analytics approach through a qualitative research and procedures have been applied to explore pertinent information for this study.

Higher Education in India

According to the All India Survey on Higher Education, India's gross enrolment ratio in higher education was an appalling 25.8% in 2017-18. Frankly put, higher education in India is a privilege. High cost, lack of employment opportunities and inaccessibility are some reasons. The draft NEP seeks to address this step-by-step. To quote, it "unequivocally commits to raising investment in education substantially, including a significant increase in public financial investment, as also in philanthropic investment," and suggests increase in educational expenditure from the current 10% of overall public expenditure in education to 20%, over 10 years. While this is not as strong as the proposal of spending 6% of GDP towards education, the move is welcome. But great care needs to be taken to ensure such grants do not forcibly change the moral fabric or institutional ethics. The draft NEP also seeks to boost research across higher vistas of education by setting up a National Research Foundation. This again is a welcome move. To address the skills gap between what students are taught in academic institutions and what they are expected to do in professional environment, the policy has focused on industry-based skill empowerment. It lays stress on creativity and innovation, which are the key factors for one to excel in the 21st century. It proposes a new National Educational Technology Forum and induction of new-age technologies such as online learning platforms; Artificial Intelligence AI–driven customized learning solutions, video-based learning, peer-to-peer learning, etc. It also encourages the establishment of dedicated institutions that specialize in offering a curriculum that helps students to grow their understanding of future technologies, and develop a spirit of innovation and problem-solving at a global scale. This can be achieved by moving away from the canonical system of affiliations and by giving autonomy to colleges and universities. This can enhance the choice set of Indian students for pursuing different fields of education in the short run, and in the long run can potentially reshape their attitude towards the education system as a whole. The draft NEP calls for an all-inclusive education policy that can produce a harmonic balance between job-creators and job-seekers to counter the challenges of unemployment and to reap the benefits of the demographic dividend.

Importance of Higher Education for 21st Century Economy

The roles of higher education in sustainable economic and social development increase year by year, and this will continue over the next decades. Higher education can be seen as a focal point of knowledge and its application, an institution which makes a great contribution to the economic growth and development through fostering innovation and increasing higher skills. It is looked as a way to improve the quality of life and address major social and global challenges. Higher education is broadly defined as one of key drivers of growth performance, prosperity and competitiveness. UNESCO says its social role

provides the link between the intellectual and educational role of universities on one hand and the development of society on the other. Raising skills holds the key to higher living standards and well-being. Investing in knowledge creation and enabling its diffusion is the key to creating high-wage employment and enhancing productivity growth, points out OECD.

Higher education gives a person an opportunity to succeed in today's global economy. Modern universities provide their students with various programmes aimed at preparing them for different economic sectors, helping them to stay and progress in the labour market for long, programmes that make a difference for labour market outcomes and keep pace with changes in the global economy and changes in the innovation process. Universities promote lifelong learning; they offer opportunities to engage and attract professionals into training and professional development.

Business has changed over the last decade; the dynamic processes take place in a range of contexts and landscapes. There are a lot of jobs today that failed to exist several decades ago. Technology is changing the nature of work. The 2017 McKinsey report estimated that 49 percent of time spent on work activities worldwide could be automated using existing technologies. The requirements on employee's skills have also changed. Higher education institutions assure the relevance of their knowledge, identify skills gaps, create special programmes and build the right skills that can help countries improve economic prosperity and social cohesion, adapt workforce development to the economy and changing demand for the new skills, develop relevant skills and activate skill supply, and thus support improvement in productivity and growth.

Re-Imagining Education in the 21st Century

The Higher Education landscape is ever evolving to meet the needs of students from reshaping curriculum to re-designing course delivery methods, all the way to re-modeling student support services. We've all witnessed and experienced significant changes over the years. Yet today, we're moving at a faster pace. Trends and technology innovation cycles are turning over faster, and the new generation expects everyone to keep up digital education. The Higher Education and Research Act (2017) explains that one of the

core objectives of universities is to help students progress into employment and for them to benefit from their acquired qualifications over time. During higher education, students should be supported in developing both competences which are in high demand within the industry, and also supported to develop skills that are transferrable across multiple disciplines. The real educational benefits of using ICTs are to be seen in domains such as team-working, creativity, problem-solving and the like, in ways very close to the subject of this paper. Yet so long as these are not central to (or even recognized in!) assessment systems such as national examinations, the potential for realizing such benefits will always be severely constrained. The second discourse focuses on the factors with a demonstrated impact on boosting educational performance as measured in existing national and international surveys. And, as yet, there is insufficient evidence that ICT use does have an incontrovertible impact on standards so undermining, for those wedded to this discourse, the educational arguments for imaginative ICT use in schools. However, no-one should expect each and every use of ICT to have a positive learning impact – focusing the question back onto the ways in which ICT is used, in which circumstances, for which students etc – and asking for incontrovertible evidence of the benefits of ICT in a learning society may be no more sensible than to ask for the evidence about the value of books before buying any for schools.

Digital Literacy in Higher Education

Two interrelated myths arise from the way practitioners in higher education respond to an increased emphasis on technological delivery. One myth stems from the view that tertiary education students are digital natives who have universal and uniform digital experiences. This myth presumes that the technological experiences of these students are homogeneous and linked to a sophisticated knowledge and understanding of information and communication technologies (ICTs). The second myth emanates from the idea that the Internet is a panacea for the issues of increasing costs of higher education and increasing demand by students for authentic and interactive learning opportunities. The assumption here is that technology underpinning online learning is quick, easy to use, can be accessed by everyone, and is appropriate for all learning activities. Such myths risk overlooking a complex mix of technology-based skills, knowledge and preferences among student

populations and need scrutiny; risks highlighted. First, what is the reality about students' digital learning abilities and, second, is a cost-effective, digitally delivered learning platform able to transfer knowledge and facilitate effective learning. We review the research literature, then the students' perspectives, measured through existing online surveys. The survey data provides useful insights into the pervasiveness of digital literacies possessed by commencing tertiary students.

Research and Promoting Technologies in Higher Education

Higher education is a technology and innovation driver. One of the missions of the modern universities is finding solutions to big challenges and conducting research within global priority areas, contributing to social outcomes such as health and social engagement. Often it is aimed at designing technologies that result in new products and supplying advanced technology for use. Knowledge is the true basis of higher education: its production via research, its transmission via teaching, its acquisition and use by students. Hence, excellence must remain the prime objective of any institution of higher education, including universities in any country. Higher education institutions are focusing resources on quality education, encouraging students and taking account of students' profiles and specific needs, strengthening teacher training and exposure to best working practices and creating incentives to attract the most experienced teachers. Countries are putting knowledge at the service of their societies to create a better world. This can be achieved through the training of first-class minds, through major advances in science and technology and by encouraging an interest in learning. Now, to realize its full potential, higher education is to maintain a pro-active stance, strengthen its position as bedrock upon which countries are and build a new road to growth. It cannot be passive.

21st Century Learning As Radical Change

The radical change proposed by promoters and advocates of 21st century skills adheres to the dictionary definition of the word, a "thorough or extreme change to traditional forms". Learning is central in knowledge-based societies and economies. In many countries there is a push to reflect this by ensuring that reforms of the education system focus more strongly on learning itself rather than simply changing structures and educational organisation. Most discussions of 21st century learning offer an alternative curricular vision to the techno-optimistic belief in progress prevalent in the discourse of 21st century learning. In the call for radical reform, another understanding of the word "radical," one that includes an eco-centric, life affirming understanding that roots education in a life code of value and in a living community of relations large enough to embrace the multidimensionality, the responsiveness, and responsibility at the heart of the pedagogical relation.

The Need for Lifelong Learning: The inevitability of lifelong learning in knowledge-oriented societies implies that school systems should have different objectives and characteristics than if education were considered to have been completed when a student leaves initial education. Yet in practice, there remains a tendency for school education to be assessed in terms of the achievements and targets that systems have set themselves, rather than their broader success in laying the foundation for lifelong learning. In the knowledge economy, memorization of facts and procedures is not enough for success. Educated workers need a conceptual understanding of complex concepts, and the ability to work with them creatively to generate new ideas, new theories, new products, and new knowledge. They need to be able critically to evaluate what they read, be able to express themselves clearly both verbally and in writing, and understand scientific and mathematical thinking. They need to learn integrated and usable knowledge, rather than the sets of compartmentalized and de-contextualized facts. They need to be able to take responsibility for their own continuing, life-long learning.

Personalized learning: Learning sciences research suggests that more effective learning will occur if each learner receives a customized learning experience. Different learners enter the classroom with different cognitive structures and as we know from neuroscience, individual characteristics are far from fixed. Therefore, students learn best when they are placed in a learning environment that is sensitive to their pre-existing structures and that is flexible enough to adapt teaching strategies to individual needs. Formative assessment can be seen as an essential element of those personalized learning approaches,

as it is characterized by the continual identification of and responses to students" needs.

The importance of motivation and emotion in learning: The motivation to learn, the belief about one's own abilities and the existence of learning strategies are a precondition for successful and lifelong learning, as PISA has shown. These findings are supported by the results from neuroscience: Negative emotions that are caused, e.g. by incomprehensible learning materials, affect cognitive functions negatively.

Use of diverse knowledge sources: Learners can acquire knowledge whenever they need it from a variety of sources: books, technology, and experts around the globe. ICTs have become more and more important in today's world to acquire knowledge. Even though ICTs itself do not seem to have a positive learning impact, it is unquestionable that the use of ICTs itself needs to be a goal of today's schools.

Assessment for learning: Tests should evaluate the student's deeper conceptual understanding, the extent to which their knowledge is integrated, coherent, and contextualized – instead of focusing on the memorization of facts. In addition, the work on formative assessment shows how assessment should not only be used to test student's abilities but to help them assess their own learning progress.

Suggestions and Conclusion

Swami Vivekananda said "Education is the manifestation of perfection already present in man". The Indian children work very hard right from the primary educational level itself. In order to ensure a sufficient pool of qualified people in a nation, it is necessary to have an up-to-date education system that is on a par with the demands of the global economy. After independence education was the sole priority for nation building. It was realized by our leaders and noble person that without education any nation can't stand according their own choice as well as requirements. Higher education is of vital importance for the country, as it is a powerful tool to build knowledge-based society of the 21st Century. It is widely recognized that the existing data base on higher education is inadequate, out-of-date. Higher education can play an instrumental role in the achievement of these outcomes through the creation of knowledge networks, research and innovation centers, corporate-backed institutions, and support for faculty development. Smart social networking requires critical-thinking and metacognitive skills and the ability to integrate and evaluate real-world scenarios and authentic learning skills for validation. Technology in the 21st century serves as an extraordinary tool to shape and enhance the learning environment. Digital literacy skills are absolutely necessary to ensure the technology is used to supplement-and not substitute for-high-quality instructional methods. Teachers using digital technology with valuable skills are the most powerful tools in teaching in the 21st century.

In conclusion, it may be said, the Higher Education System in India while critical for the development of the economy is afflicted with some serious concerns. It is a long way from a transformational change which is envisaged by various committees. Finally, this is the time to consider steps to make India into the world's major hub for higher education in the 21st century. To drive the digital transformation of teaching and learning within Indian higher education institutions, it is paramount to understand the technology skills and knowledge of both teachers and students, to discover their respective needs, and to aim for a mutual understanding of both perspectives (bottom-up). Beyond that, a sustainable implementation of digital media can only succeed if the overall project 'Digital Transformation in Higher Education' is grounded within the current context of the higher education institutions, and is supported and pushed by the higher education institutions administration (top-down).

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