LEARNING REVOLUTION AND EDUCATION IN PAKISTAN: A REFLECTION

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ABSTRACT

We are living in changing world which demands new skills of living and working now and ahead. Our present is associated with ICTs and its related tools and applications which seemingly have brought about a learning revolution. Now learning materials can be freely available on the demand of learners and round the clock. Some opportunities and challenges also appear to be faced by the HEIs and individual learners which can be met by visionary leadership. Pakistan is also benefiting modern technologies in all areas of services-education, health, banking, finance, commerce, and industry, etc. Pakistan has a dynamic approach to the adoption of innovations and inventions. Hence, the country has embraced the Fourth Industrial Revolution although in its fledgling stage.

Keywords: Learning revolution, artificial intelligence, information and communication technologies, higher education institutions.

INTRODUCTION

We are living in a world where technological innovations seemingly have affected all aspects of our lives –personal as well as professional. Technology has been infused in all spheres of human life. Now we are using different kinds of technology in our homes, at work places and during mobility. Therefore, we can say that, *"Technology has re-shaped our lives"*. Amongst others, the Information and Communication Technologies (ICTs) appear to be more important as these have brought about an information revolution. We seem to be dependent on technology particularly the ICT –is it helping us or making us slaves? Our children are more curious to innovate and use the ICT. They have more mastery in skills of using the ICTs. The children of today are the leaders of tomorrow and they would be leading on account of the innovations and inventions in ICTs.

The present world where we and our kids are living is going through a fast change which according to Daggett (1992) is four times faster than our schools. Our rapidly changing world is regarded as the world of globalization, competition, collaboration & cooperation, creativity & innovations, multiculturalism, conflicts and diversity, information explosion, media, & technology, and commercialization of education. This situation puts an immense pressure on educational institutions to promote the skills among graduates to live and work productively (Sajjad, 2020). These i.e. the ICTs seem to be are merging with humans' physical lives. All these constructs seem to be associated with a revolution in education and training which is called the "Learning Revolution". It is characterized by openness of

education and educational opportunities where learning materials are freely available to everyone round the clock; and where learning is taken as common good. Educational Software including Multimedia Educational Resource for Learning, Open and Online Learning Initiative Open Educational Resources, Open Course Ware (Casserly & Smith 2008) are changing the entire landscape of education –teaching and learning. Now the focus of teachers and institutions seems to be shifted towards learners and learner's needs. Learners are the focus of all academic activities inside or outside of the institution.

It is obvious from the above discussion that learning revolution is characterized by the ICTs and its learning tools designed to cater the needs of individual learners. Here the learner holds prime position in all educational endeavors; and learning outcome is main concern of the parents, educationalists, educationists, policy makers and administrators. If we go back we can witness the same in Dewey's philosophy of education which holds up better the constructs of learning by doing, learning by experience, learning by linking mind and brain together, learning by constructing your own storehouse, learning from real life activities, and learning by collaborating with others (Archambault, 1974). However, living in the age of ICTs or living with ICTs also sensitizes us about the importance of the learner as focus of the instruction. Therefore, now the situation projects some threats as well as opportunities. It all depends upon the humans, "How they use ICTs? Why they use ICTs"?

THREATS AND CHALLENGES OF LEARNING REVOLUTION

The ICTs seemingly have infused in almost all fields of human activity. Now robotics and artificial intelligence and its related tools are more efficient than humans. Therefore, there is a fear of joblessness or less jobs for the humans. But at the same time the nature of the jobs is changing in the changing times. So those who will learn new skills would be able to serve and survive otherwise, it would be very difficult for them to live and work in the changing world of work. Similarly, Dependency on Technology- handicapping would be common. Working without technology would become a metaphor. All efficiency of humans would be associated with the use of technology. The use of technology particularly, the ICTs would generate some social, moral and security issues including misuse, corrupted & stolen data, unauthorized access of network, secure M2M - machine to machine interaction, hacked, broken & misused devices or tools, sharing unethical and immoral information etc.

OPPORTUNITIES

The optimists view enormous opportunities associated with ICTs. These opportunities are new jobs, new learning environments, new ways of working, new modes of recreation, and new means of communication and so on. The technologies particularly, ICTs are creating opportunities. In spite of the displacement effects of technological progress, employment in OECD countries has historically increased on average. New learning organizations, new forms of education and instruction, new models of business, new forms of industries, entrepreneurial experimentation, developing entrepreneurial ecosystem, investing in entrepreneurial skills, & new patterns of service provision are emerging with huge opportunities of employment (Acemoglu & Restrepo, 2017; Acemoglu & Restrepo, 2018; Autor & Salomons, 2018; Bessen, 2017). Therefore, one needs to learn new skills and attitudes to live and work in such environments.

WHAT HIGHER EDUCATION INSTITUTES SHOULD DO?

In such changing world the higher education institutions are expected to play a significant role in enabling their graduates to be innovative & progressive, entrepreneurial minds with business orientation, skillful individual, visionary –futuristic, accepting diversity and working in teams, productive and efficient.

The HEIs should set up departments or colleges or schools of emerging disciplines, technical vocational colleges linked with commercial sector *for employment, decent jobs and entrepreneurship,* invest in STEM skills, design and implement curriculum in new areas

of study including Genomics, Data Science, AI, Robotics, Nano-materials, innovate and revise curriculum within the traditional "primary" sciences—biology, chemistry and physics—and more training in computer science subjects (Martha, 2017). They are expected to transform curricula & instructional methods (Kirby, 2018); adopt creative approaches to upgrade future learning (Shahroom & Hussain, 2018); promote workplace learning including career and technical education (CTE), develop soft skills among graduates such as career navigation, work ethics, and innovation (Jay & Roger, 2017). They should take interest in nurturing human capital, investing in knowledge based and entrepreneurial ecosystem along with better social protection and insurance by promoting efficiency of financial markets, access to finance, given that education is costly and subject to fixed costs. Even so, the main focus of the HEIs should be research for development, collaboration, linkage or partnership in research and other academic ventures. They should embrace instructional innovations and technology-based education (Massive Online Open Courses –MOOCs), online education programs and should create newer and more interactive formats for their online courses (Jeffery, 2017).

CHALLENGES

Presently, the HEIs have to face some challenges to impart education, inculcate skills and promote socially accepted behaviors among their graduates. These include global standards, quality & quality assurance, certification and accreditation, faculty and faculty development, institutional infrastructure, institutional governance and the mindset of stakeholders to move with the moving world. To meet these and other challenges the HEIs leaders should value people and put them at the center of the organization. They should learn and adapt continuously and transform their organizations, empower others through tailored communication, translating a compelling vision into something tangible and inspiring and being persistent until desired mindsets and behaviors become habits of the people (Sajjad, 2020).

SITUATION IN PAKISTAN –DEVELOPMENTS AND OPPORTUNITIES

Pakistan is a developing country leaping towards excellence in education, training, information and communication technologies and entrepreneurship. The government of Pakistan has launched a project "DgiSkills" to enable its people capable of using digital technologies easily to earn their livelihood. "Safe City" project is one of the famous projects in Pakistan for vigilance and surveillance of cities against antisocial elements. Now 4G technologies are being used extensively with preparation to welcome 5G. In the health sector, Artificial Intelligence (AI) is used for the diagnosis and treatment of diseases. CyberKnife is used for surgery of some delicate and complicated diseases with precision. Similarly, virtual reality coined with 3-D and 5-D technology is being used with confidence for the training of pilots and surgeons. Even so, video conference has become a norm for instructional purpose even at the school level. Other innovative steps include: BaseH Technologies claiming to be the first in innovating Dante-the first AI news writer in Pakistan; Company of Intelligent Systems and Networks Research (CISNR) develops smart solutions to address environmental issues; Afiniti is US-based Pakistani data and software company using AI to human interactions and recognition, pair customers with employees by predicting interpersonal behavior; ADDO AI focuses on development of smart cities with a centralized operating system. Currently, it is working in five Asian countries including Pakistan; Aqua Agro works on IoT-enabled devices and monitors real-time conditions of the fields to grow more crops and save water; Five Rivers Technologies provide virtualization and system management technology services in mobile applications, AI, and IoT; Mountainise provides AI solutions and many more.

This scenario demonstrates a picture of loosening manpower or joblessness which is the main challenge for developing economies like Pakistan. But there is another side of the coin that this situation calls for an alternate mode of skills and skill development. It means the nature of work would be changed and hence the system of education should be aligned with such demands of the market. The graduates should have such skills necessary to live

and work in this changing situation. Hence, they need to be equipped with all related entrepreneurship skills imparted by the Higher Education Institutes.

The new technologies that are fusing the physical, digital and biological worlds require a learning revolution with new business models, online learning, STEM curriculum, and the methods of teaching, assessment and the role of teachers in entrepreneurship education. The universities and colleges in Pakistan have reinforced entrepreneurship to be a separate discipline. The increasing trend of entrepreneurship in Pakistan has led to various institutes begin working on it to improve the quality of startups and to support such progression. Educators need to explore new and creative approaches to use educational innovation to upgrade future learning. There is a need for training the youth as revolutionary changes are taking place fast in science and technology; and the industries are demanding skilled individuals.

In nutshell, Pakistan is benefitting modern technologies in all areas of services-education, health, banking, finance, commerce, and industry, etc. Pakistan has a dynamic approach to the adoption of innovations and inventions. Hence, the country has embraced the Fourth Industrial Revolution although in its fledgling stage.

CONCLUSION

We are living in a changing world which demands new skills of living and working now and ahead. Our present is associated with ICTs and its related tools and applications which seemingly have brought about a learning revolution. Now learning materials can be freely available on the demand of learners and round the clock. Some opportunities and challenges also appear to be faced by the HEIs and individual learners which can be met by visionary leadership. Pakistan is also benefiting modern technologies in all areas of services-education, health, banking, finance, commerce, and industry, etc. Pakistan has a dynamic approach to the adoption of innovations and inventions. Hence, the country has embraced the Fourth Industrial Revolution although in its fledgling stage.

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