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Transformation of Education: Teaching and Learning During the Pandemic and Post Pandemic

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ABSTRACT

The Covid-19 pandemic and the social distancing that followed have impacted all strolls of society, also education. In order to keep education running, educational institutions have needed to quickly adjust to the circumstances. This has resulted in an exceptional push to online teaching and learning. The student was submersed in Education 3.0. Virtual stages appeared, connectivity and communication between students and teachers expanded, and a more personalized and intelligent learning model was applied. Then again, the key element of Education 4.0 is innovation, and it has profoundly modified the way in which people live, work and establish associations with others. Moreover, before Covid-19, there has been expanding critique of how technology, is rethinking and reducing ideas of teaching and learning. The paper also challenges the account that claims, 'education is broken, and it ought to and can be fixed with technology'. This paper will provide a critical review of the ongoing literature on Education 4.0, distinguishing trends that are arising and the challenges that Education sector might face. We are in a period where trial needs to continue before we can observe the clear implications or outcome(s) of what Education 4.0 might involve for the future of education.

KEYWORDS: *Covid-19 Pandemic; Globalization; Virtual Platforms; Education 4.0*

INTRODUCTION

Due to the extraordinary situation produced by the Covid-19 pandemic, the effect of the pandemic on education, schools, teachers and students, turned into a subject of great interest for researchers. A study (Survey, 2020) involving 424 universities all over the world uncovered that institutions were impacted by the Covid-19 in terms of research, conferences, worldwide portability and education delivery, most universities expressing that they had to embrace online learning and had to face many difficulties, the most significant being access to technology and teachers' ability to convey online courses. According to a survey report of the Ministry of Human Resource Development (MHRD), Legislature of India, there are 993 universities, 39931 Colleges, and 10725 independent institutions listed on their portal, which add to education. The prompt impact has been lockdowns over the past year and the enforced closure of schools, colleges and universities (Watermeyer et al., 2020). The surprising arrival of the pandemic and ensuing school closures saw enormous effort to adjust and innovate by teachers and education systems all over the world. These changes were made rapidly as the prevailing situations demanded. Almost overnight, many schools and institutions systems started to offer education remotely (Kamanetz 2020; Sun et al. 2020). Through television and radio, the Internet, or customary postal offices, schools moved to teach students in very different ways. No matter what the result, remote learning became the accepted method of education arrangements for fluctuating periods. Teachers proactively answered and showed great support for the changes in lesson delivery. Thus, it is clear and accepted that "this crisis has stimulated innovation within the education sector" (United Nations 2020, p. 2).

Impact of Covid-19 on Education

The central purpose of education is to assist individuals make essential adjustments towards a steady evolving environment. The emergency reaction from educational institutions during emergencies (e.g., pandemics or conflict) to shift teaching and assessments online is known as Emergency Remote Education (ERE) (Shin and Hickey, 2020). The computer age has changed the whole world, particularly incorporates in the areas of self-inspiration, communication, productivity and technology. Online-learning assists learners to conquer the limited social connections and works for self-motivation. This is the first worldwide pandemic in recent times, disrupting advanced education institutes and the experience has positively been challenging for both teachers and students. It is fundamental to learn about student experiences during this period in order to be more prepared for ensuing disruptions to HEI and to comprehend how COVID-19 has shaped our students, especially as research has shown the considered impact on mental health and well being across the general population (White and Van DerBoor, 2020).

Despite all of the disadvantages, this present circumstances offered new experiences & viewpoints and pushed education advances forward as never before. Something that appeared to be unreal became a overall reality within a few days. Teachers of all subjects at all instructive levels moved to a virtual

environment immediately. Advanced education institutions, universities, and colleges appeared to be fairly prepared for this situation. Dreadfully, primary and secondary schools, particularly in eastern and central Europe, never considered distance learning as a important alternative before, so they did not have software, hardware, and staff ready for such a situation. Online teaching is not a new idea, it is in presence from the last few decades allover the world after digitalization and various teachers and experts are giving online teaching through You Tube, and other social media platforms since then. However, it has become so famous in last few years that they are likely to be expected in each formal curriculum for education. In recent years, the development of online classes has led to an expanded number of schools and colleges offering online courses (Beatty & Ulasewicz, 2006). It has been seen that teacher with positive perspective are more familiar with web based technologies (Uunboylu, 2007). Various research studies have reported favorable attitude for online-learning in most of the teachers (Suri & Sharma, 2017).

Online Teaching & Learning

The change of perspective in the field of education set off by pandemic forced major challenge on school teacher. In this situation one of the main tasks of teachers is stay up pace with the technology in teaching. It's been almost a year that every teacher has adapted to the new normality and all parts of educators' professional activities are changed decisively: course pattern: course delivery: evaluation: and communication pattern. On the other side, the switch over from offline to web learning negatively affects the students, who have higher troubles in adapting to the new learning climate. Similarly, most of the students are not having relevant digital resources (e.g. laptop/computer, broadband internet connection), home learning environment support from their parents. All these factors make the students to feel sad in their study and it will impact their future growth and aim. Now a day's various online platforms are accessible for students as well as researchers in India along with their classroom study. Swayam, e-PG Pathshala, MOOC, YouTube etc are providing huge amount of material to the students for their internet based study.

Although there have been overpowering challenges for students, schools, private institutes and the government regarding online learning from a different point, there are several opportunities made by the Corona virus pandemic for the unprepared and the far off plans of implementing online- learning system. It has forged a strong connection between educators and parents than ever before. Children with disabilities need extra and special support during this continous emergency. The use of online stages such as Google Classroom, Zoom, virtual learning environment and social media and various groups like Telegram, Messenger, Whatsapp and Wechat are pursued and tried for teaching and learning for the first time ever to proceed education. This can be investigated further even after face-to-face teaching resumes, and these platforms can provide extra resources and training to the learners. Teachers are obliged to develop innovative drives that assist to overcome the limitations of online teaching. Teachers are actively teaming up with one another at a local level to develop online teaching methods. There are unique opportunities for cooperation, effective solutions and willingness to learn from others and try new instruments as teachers, parents and students share similar experiences (Doucet et al., 2020). Moreover, students' assumptions and dilemmas concerning online learning were not researched earlier in the context of required subject education. Moving to the virtual environment was challenging for teachers, who needed to transfer real class experiences into web lessons.

Education: Post Covid-19

Today, the world is experiencing a period of important transformations. The learning activities completed by students, as well as the utilization of methodologies and techniques by their guides , constitute the basis of a dynamic and changing educational model. This process of structural advancement has bet through time on the development and changes of science and technology, until developing to the current Education 4.0. An important viewpoint is the development of students' skills during the learning process, which empowers them to be able to enter the work market and meet the requirements of labor competencies. In this way, society will be able to develop on a workforce that, in addition to fulfilling its basic roles, is proactive, resourceful and innovative. Technology started to have a place in educational processes in a fundamental way at the beginning of the new millennium, and was known as Education 2.0. At this stage, the teacher was not only devoted to teaching, but also worked as a moderator to promote communication in the classroom, while discovering the talents of his students through cooperative work.

On the other side, Education 3.0 has allowed Information and Communication Technologies (ICT) to be integrated educational processes, thus integrating new instruments that have improved the form of education through out last few years. Education laid out a closer connection with various sources of information. Learning was independent and the search for information was supported in a 100% digital way.

The arrival of 4.0 represents an optimal approach, aligning the Fourth Industrial transformation with education; this is because the industrial revolution bases its improvement on robotics, smart innovations, artificial intelligence, teacher evaluation and student self-assesment. Big data, use of digital platforms; facilitate our regular lives. Through Education 4.0, the desirable abilities of graduates can be improved, making them innovative employees; with the capacity to adapt to the use of new advancements.

Some of the characteristics of Education 4.0 are the following:

- The basis of teaching is the collaboration between teacher and student.
- The principal of learning is through communication.
- Problem solving is practiced as close to real life as possible.
- One of the primary drivers of learning is games and the creation of genuine environments.

- The use of ICT as a tool for accessing, innovating and organizing content.

In order to create new sources of work outlined to this new reality, the organizing that implemented the advances will require new types of work from the market, but until this happens, customary work options that require repetitive processes in customer support , telemarketing, delivery drivers, cab drivers, among others, are steadily being eliminated; the same that should be examined by governments to focus on fostering a contemporary education to the new age, Education 4.0 which is the topic of discussion of this article.

Changes we need

It is incumbent upon all teachers to use this crisis-driven opportunity to push for significant shifts in almost every part of education: what, how, where, who, and when. In other words, education, from curriculum to pedagogy, from teacher to learner, from learning to evaluation, and from location to time, can and should radically change. We draw on our own research and that of our associates to suggest what this change could look like.

Curriculum: What we teach

While helping students develop basic practical abilities is still needed, education should also be about improvement of humanity in citizens of local, national, and global societies. Education must be seen as a pathway to accomplished lifelong learning, satisfaction, joy, wellbeing, opportunity and commitment to humanity. Schools therefore need to provide extensive access and deep exposure to all learning areas across entire years in order to enable all students to make informed decision and develop their interest and unique talents.

A new curriculum that answer to these needs must do a number of things. First, it needs to assist students develop the new capabilities for the new age (Wagner and Dintersmith 2016). To assist students thrive in the age of smart machines and a globalized world, education should teach students to be creative, entrepreneurial, and globally competent (Zhao 2012a, 2012b). The curriculum needs to focus more on fostering students' capabilities instead of focusing only on content and knowledge. It needs to be concerned with students' social and emotional prosperity as well.

Pedagogy: How to teach

Pedagogy should change as well. Direct guidance should be project t away for its"unproductive successes" or short-term successes but long term damages (Kapur 2014; Zhao 2018d). In its place ought to be new models of teaching and learning. The new models can have various formats and names but they must be student-centered, request-based, authentic, and deliberate. New forms of pedagogy should focus on student-initiated answer of solutions to authentic and significant problems. They should assist students develop abilities to deal with the unknown and uncertain instead of requiring retention of known solutions to known problems.

Organization: Where and when to teach

As schools continue to expend online learning, new and more effective models are being investigated, innovatively developed, and practiced. The more powerful models of online learning have a well-balanced coordination of both synchronous and asynchronous sessions that empower more desirable ways of learning. Rather than teaching online all the time, it is possible, for instance, to conduct inquiry-based learning. Students receive guidelines from online resources or synchronous meetings, conduct inquiry, create items individually or within small groups, and make introductions in large class synchronous meetings. Instead of addresing to all students, teachers could create recording of lectures or find videos made by others and share them with students. They would also be meeting with small groups of people for specific advice and support. The fundamental pursuit is that there is minimal advantages or student engagement for teachers to address all the time when more interesting and challenging informative models can be created.

Summary

Education will undoubtedly go through significant changes in the next decade as the consolidated result of multiple major forces. These changes include curricular changes that figure out what is to be learned by students . It is likely that more students will be moving toward capability-based learning that has an emphasis on creative unique skills and abilities. Learning has to become more in light of strengths and passions and become personalized. Accordingly, education providers should need to make student autonomy and student agency key to changing pedagogy and school organizations. Students will succeed by having more say in their own learning and their learning networks. Moreover, schools will have an exceptional opportunity to positively and proactively change because of COVID-19 and the need for worldwide connections.

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