

17 Underlying Educational Changes within an Era of Hygienic Crisis

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17.1 ABSTRACT

This brief article, based on the present knowledge and available literature, aims to demonstrate the various aspects of the transmission of the pandemic on the educational edifice across the world. Its main concept concerns the fact that various critical events like the outbreak of Covid-19 may become turning points for a smoother functioning of pedagogic institutions in an era of post-modernism. Rapid changes in the organization of instructional methods have taken place contributing to the construction of a creative and integrative learning environment. The main preoccupation of the script presented here revolves around the idea that the widespread utilization of ICTs enhances students' ability to assimilate existing information, imagine innovative possibilities for a better future and design useful solutions under the deeply ambiguous and urgent circumstances that we're witnessing. The gradual emergence of a novel educational milieu requires the coming into being of a process of life-long learning which leads to a feeling of self-fulfillment. The systematic application of telematics services provides a strong stimulus for the accomplishment of higher order thinking skills through the inculcation of critical and independent states of mind. Moreover, equal opportunities for all citizens are promoted and the international multifarious communities are eager to acquire technological literacy competences and eliminate the prevailing gaps of knowledge.

Keywords: application of ICTs, blended learning, educational process, Covid-19

In modern times we observe that the confluence of innovative computer and communication technologies has brought about an acceleration of access to all kinds of information. The wide pervasiveness of globalization along with the advent of the digital revolution have driven contemporary societies in a fierce race to reap the benefits ensuing in an effort to revive their economies. Bold initiatives assumed by policy-makers, educationists and non-governmental organizations have created permanent incentives for an increased dissemination of ICTs (Information and Communication Technologies) in all aspects of life and education is no exception to the rule²⁶. The uncertainties inherited from the past of a world defined by four classroom walls and impermeable boundaries have given their place to a novel global interdependence of complex structures which require flexibility, responsiveness and imagination. When technology is applied in a meaningful manner students and teachers are provided with the opportunity to be instantly connected to whichever part of the world they desire. New paths are opened that stimulate learning and contribute to the development of high order thinking skills²⁷.

Histories of technological breakthroughs often recited have revealed the existence of close links between insightful discoveries in industries and communications accompanied by improvements in educational methods. The computers' extraordinary ability to offer lessons in multimedia formats and foster a real time student-teacher dialogue and direct exchange is only the tip of the iceberg for the consolidation of a qualitative educational milieu. The rapid availability of ICTs has been responsible for a thorough transformation of the learning process

²⁶ Verma, A., K., (2020), "Impact of Covid-19 on Environment and Society", Journal of Global Biosciences", v.9, (5), p. 7352-63.

²⁷ Meenakshi, (2013), "Importance of ICT in Education", Journal of Research and Method in Education, v.1, (4), p.3-8.

so as to facilitate the smooth integration of cutting-edge technologies. Various pedagogic activities have been reoriented and reformulated from the manual to the open sources. The governmental institutions strive for the enhancement of the implementation of ICTs in education through the promotion of technological literacy and the facilitation of equal access to every student that needs to obtain information. One of the most admirable achievements of the establishment of educational technology is linked to the clearance away of the impediments that prevented the equal dissemination of information to all the citizens without regard to their color or social status. Rare documents that researchers had to schedule appointments in order to examine have now been digitized and posted on the web for anyone to delve into them at any time he wishes. Projects like the E-rate have opened up possibilities for connection to affordable broadband internet for schools around the globe. The utilization of the cyberspace eliminates geography as a limiting factor thus information can be gleaned easily from libraries, research centers, museums and educational institutions from all over the world. According to the words of David Thornburg, modern technologies are space collapsers, time shifters and creative tools that extend our reach to previously unfathomed realms of knowledge²⁸. The variety of pedagogic services and methods of teaching has been boosted by the effective application of the principle of life-long learning that is gradually implanted into the minds of youngsters. While some subjects that the new generation is taught last forever (literacy, numeracy), other topics change so swiftly that they become obsolete by the time students enter the workforce. The use of television, radio, e-mail and the internet can be harnessed in support of the construction of an educational system built around the idea that learning should be a constant and time a variable.

Moreover, as far as teachers are concerned they should make an effort to embrace warmly the adoption of novel teaching activities and be eager to transform themselves into agents of innovation in the classrooms of the 21st century. Traditional tools like books, pens and paper will co-exist with the high-tech instruments of the telematics era that is increasingly gaining ground. Within a more fluid and distributed setting teaching is going to be provided wherever the learner is located—a room at a school, on the bus ride home, in the park, at the museum or on the library. Therefore, the educator's role will differ from that of content presenter and test giver towards a more productive capacity as a coordinator; an expert guide who provides vital instructions to the learners and helps them navigate the subjects being explored. He has to be open to the assimilation of new discoveries and pathways that become apparent along the educative process. The pervasive development of inexpensive desktop videoconferencing equipment has paved the way to unique opportunities for casual dialogues on a wide range of issues and contributes to the overcoming of the sense of isolation felt by educators whose area of interest was more narrow-based. Modern pedagogues benefit to a large extent from the positive effects of the telematics revolution in other important ways. For example, nowadays the abundance of existing technology allows them to acquire access to reference materials on virtually any academic subject while online communication facilities can promote collaboration and conversation with peers from diverse locations of the planet. The findings of a significant survey conducted by the Center for Applied Research in Education Technology show that the application of technology in class has considerably increased the performance of pupils and inculcates them with positive attitudes and motivation. It enhances meaningful learning as the extensive use of innovative applications enriches the process of acquiring knowledge. As a characteristic case in point they cite a sample of eight graders who performed much better on NAEP mathematics tests when computer technology was employed for real world simulations as opposed to drill-and-practice purposes²⁹.

The engagement with interactive video programs has been demonstrated to ameliorate problem-solving skills while assistive technology provided pupils with mental retardation an invaluable aid to overcome their limitations and learn academic, social, vocational and survival

²⁸ Thornburg, D. D. (2000), "Technology in K-12 Education: Envisioning a New Future", USA: Office of Educational Technology, p.1-13.

²⁹ Van Bavel, J. & Baicke, K. (2020), "Using Social and Behavioral Science to Support Covid-19 Pandemic Response" in Nature Human Behavior, www.researchgate.net/publication/341050215

skills necessary to function independently in society. Productivity tools such as databases, spreadsheets, computer-assisted design, graphics and multimedia authoring software enable students to independently analyze, interpret, organize and evaluate their work and enter the workforce with greater capabilities. The adaptation of technological advances to real-life spheres of life allows the trainees to meet arising demands in various careers related to finance, hospitals sales and manufacturing. As the abrupt outbreak of Covid-19 has affected the whole world education received dramatic blows due to the near-total closures of schools, colleges, universities and other pedagogic institutions. Evidence published by UNICEF corroborates that as many as 117 countries are currently implementing nationwide and local closures impacting about 7.3 percent of the world's student population.

The most adverse consequence of the measures undertaken by the governments to prevent the uncontrollable transmission of the disease has placed a severe threat not only to the lives of teachers and parents but exacerbated existing economic and social inequalities. Children from low-income households often live in conditions that make homeschooling difficult. Siblings who have to experience learning together from home and parents who work and may not be able to supervise the educative process usually made matters worse. Disadvantaged members of society are mainly afflicted by interrupted learning, compromised nutrition, childcare problems and consequent economic hardship due to loss of their employment. In a desperate attempt to ease the disruption caused in education teachers, school administrators, local authorities and national governments exert themselves in order to cope with the wave of unprecedented circumstances that have ensued. As a result we witness a widespread use of distance e-learning initiatives and the exponential growth of open educational applications and platforms³⁰. The vast majority of the existing educational institutions try to reach learners remotely so as to limit the hardship suffered by all the actors actively involved in education. More often than not, several universities have asked their faculties to offer online courses and supply reading material and drills through electronic means. This is a global turning point for all segments of society to adopt a new form of e-education and embrace a work-from-home culture. Nowadays, curriculum needs an outlet where teachers can carry on dispensing teaching or vital instructions to learners in an appropriate, flexible, effective and without limitations manner.

A new demand for methods of blended learning has arisen which combines the conventional face-to-face teaching with digital or online tools of instruction. The development of ICT and its relentless influence in pedagogical approaches has actively encouraged governments to adopt blended learning at schools. As Siemens pinpoints limited access to education due to distance or the outbreak of diseases, is one of the main challenges that the introduction of blended learning tries to address. This is achieved by the facilitation of learning in situations where students and teachers are far apart from each other. Other beneficial outcomes associated with the implementation of technology on education include the provision of unlimited access to valuable resources for educators to employ in class. In addition, availability of a wide array of learning materials that can boost learners' competences and improve their confidence levels. The educational attainment can be conducted from wherever teachers and learners are located, without the traditional demand for coming together. The smooth functioning of collaborative interaction is fostered and immediate feedback of assessment is reported the recipient. Teachers function as facilitators of precious information while learners are allowed to construct their own knowledge through their direct involvement.

The disruption caused by the unwelcome arrival of Covid-19 is seen as a demonstration that online education can bolster up learning for many students only if it is carefully designed and individualized to suit the needs of diverse pupils. During the urgent circumstances following the epidemic the providers of education had to come up with novel ways to establish a firm connection with students and were required to procure meaningful educational experiences to all attendees in their class. Their confinement at home made existing lesson plans no longer

³⁰ Cerroni, A. & Di Biase, E. (2013), "New Technologies and Changing Roles within Research, Culture and Education", in *Advances in Social Science Research*, Australia: AICEI, p.61-72.

adequate and forced them to assimilate instantaneously to the new technological techniques of teaching within a very short time span. Some of the insurmountable impediments for moving schools online involve the lack of digital devices among poorer families and an absence of high-speed internet in districts of the world with meager facilities³¹. Moreover, a large number of educators were reluctant to appropriately use computers and the web for a number of reasons like poor software design, lack of administrative support and fear of losing their authority in teaching as it became more learner-centered. A lot of them expressed their skepticism about the effectiveness of online learning to improve the performance of students. They even aired grievances about the increased time and effort needed to transform technology into an effective mechanism for the dissemination of knowledge.

This being the case, a wide range of studies reveal that despite the fact that remote learning has brought about many challenges, several students seemed to be thriving in the newly-created learning setting. Pupils were performing better since they enjoyed an unprecedented sense of freedom to work at their own pace without the distraction to look good. They didn't bother any longer about the necessity to fit in at school or even undergoing bullying by some stronger classmates. Observations of online lessons made evident that adoption of teaching methods like digital storytelling, video reporting or science exploration in the backyard engaged students in education in a more efficient way³². Meaningful learning experiences linked to their home lives, family and their identities gave them plenty of incentives to pursue what was relevant to their individual interests. Providing them with latitude to opt for place-relevant science activities that suited their inclinations and differentiated grading brought more dividends than trying to recreate school. The pedagogic staff soon realized that replicating the engagement and discourse from an in-person classroom shouldn't be the main goal of online teaching. Checking for understanding and providing timely and meaningful feedback was an essential prerequisite for the advancement of educational standards.

It is unquestionable that digital learning is afflicted with severe limitations due to the fact that most students miss social interactions, intimate contacts with their peers and hands-on science instruction which requires special instrumentation only available in the laboratories. Nevertheless, the often-heard concerns about pupils who fall behind as a result of Covid-19 school closure might be a little exaggerated. Several findings support the view that the recipients of education might finish the quarantine period having developed valuable new life skills, taking better charge of their learning. The process of blended learning should become an integral part of future schooling by endowing learners with more flexibility and easier access to a wide range of content³³. They are getting a taste of independence by taking on previously unimaginable responsibilities for enriching acquisition of knowledge. On the part of teachers, the method of assessment can assume multiple individualized forms using technological potency to showcase the learning skills of students thus replacing the previously dominant type of standardized testing. The experience of the pandemic should be utilized in order to evaluate the importance of placing issues of equity at the forefront of remote learning plans with increased guidance for vulnerable groups. The sudden outbreak of the health crisis meant that not all learners could be reached to participate in online educational endeavors despite the exertion of courageous efforts by the administrative authorities.

Online delivery maintains the advantage of significantly reducing the time and costs of travel, increases opportunities to access and promote collaboration with expert professionals in a global range. This has the beneficial consequence of allowing rapid adjustments to take place regarding content and subjects of teaching. In our era, all Web 2.0 tools such as academic social networks, open-access archives and journals have been bent to accommodate scientific needs so as to help them track down researchers with similar interests and keep in touch with

³¹ Jacobsen, M. (2002), "New Ways of Preparing Teachers for Technological Intervention", Canada: University of Calgary, p.3-8.

³² Kaden, U., (2020), "Covid-19 School Closure-Related Changes to the Professional Life of a K-12 Teacher", *Education Sciences*, v.10, (165), p.1-13.

³³ Mahaye, N. E. (2020), "The Impact of Covid-19 Pandemic on Education: Navigating Forward the Pedagogy of Blended Learning", www.academia.edu/42842598, p.1-24.

innovative breakthroughs. Niche research subdomains have emerged including in their ranks networked learning, computer-supported collaborative instruction, e-learning and technology-enhanced learning each with its particular focus. The emergency situation that we experience has dramatically affected the future of education towards the adoption of more energetic policies to enhance the optimal use of ICTs in learning. Shifting pedagogies, redesigning curriculum and assessment methods and providing more autonomy to local schools are among the most important steps for integrating technology into classroom teaching. Succor for school administrators and the community at large is crucial if technology is to be used with success.

In addition, educators must have adequate access to advanced technological equipment and sufficient teaching support. New teachers must acquire all the necessary skills and be well-prepared in the delivery of education programs to satisfy the demands of a rapidly growing number of online students. They should possess proper pedagogic training aptitudes for implementing the blended learning model of teaching by taking advantage of ICTs not only as a source of information but also as a vital part of the core learning process³⁴. The sheer magnitude of the pandemic comprises a wake-up call for humanity in its attempt to create a solid system of public schools characterized by flexible delivery models and scheduling as an essential component of the global economy. Let's all hope that the lessons drawn from the current predicament that we experience will make those involved in education (from teachers, parents and students to educational leaders and policy-makers) to rethink the significance of providing a qualitative instruction, ideal for meeting the global challenges arising in the near future.

17.2 REFERENCES:

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³⁴ Hartley, J. (2007), "Teaching, Learning and New Technology: A Review for Teachers", *British Journal of Educational Technology*, v.38, (1), p.42-62.

