27 October 2023

Harnessing Digital Technologies for Education in Developing Countries: Need for a Judicious Approach

By Kishore Singh

Digital technologies are transforming the landscape of education. New models and ways of learning, digitally supported and virtual, are emerging with rapid pace, multiplying learning pathways and diversifying learning approaches. Digital technologies are impacting education at all levels and in all its forms, and renewal of education by dint of what is termed 'edu-tech' has become a buzz word. Harnessing digital technologies for education is enticing for developing countries.

However, the gaze on the dazzles of digitalization must not lose sight of their down side. Considering what has been termed as 'platform imperialism', a cautious and critical approach is needed. "Digital divide' is a crushing blow to the fundamental principle of equality of opportunity in education. Safeguarding education from forces of privatization and 'edu-business', fortified by digitalization in education, is also a daunting challenge. We must ward off against deleterious, even dehumanizing effect of digital technologies, as they can be pernicious if they are not properly controlled and regulated.

Les technologies numériques transforment le paysage éducatif. De nouveaux modèles et modes d'apprentissage numériques et virtuels ont rapidement vu le jour qui ont conduit à une multiplication et une diversification des parcours et approches dans ce domaine. Les technologies numériques ont un impact sur la formation à tous les niveaux et sous toutes ses formes, et il n'y a pas un jour sans que l'on ne parle de la refonte de l'éducation grâce à ce que l'on appelle « l'édu-tech ». L'exploitation des technologies numériques pour l'éducation est séduisante pour les pays en développement.

SOUTH CENTRE

L'émerveillement que suscite la numérisation ne doit pas pour autant nous faire perdre de vue ses inconvénients et une approche prudente et critique s'impose face à ce que l'on a appelé « l'impérialisme des plateformes ». La « fracture numérique » constitue une entrave au principe fondamental de l'égalité des chances dans l'éducation. Protéger l'éducation des effets de la privatisation et de « l'édu-business », qui tire sa force de la numérisation, est un autre défi de taille. Nous devons nous prémunir contre les effets délétères, voire déshumanisants, des technologies numériques, qui peuvent être pernicieux s'ils ne sont pas correctement contrôlés et réglementés.

Las tecnologías digitales están transformando el panorama de la educación. Están apareciendo con rapidez nuevos modelos y formas de aprendizaje, con soporte digital y formato virtual, que multiplican los itinerarios didácticos y diversifican los enfoques pedagógicos. Las tecnologías digitales están afectando a la educación en todos los niveles y en todas sus formas, y la renovación de la educación a fuerza de lo que se conoce como "tecnologías educativas" se ha convertido en tendencia. En los países en desarrollo, el uso de las tecnologías digitales en el ámbito de la educación es tentador.

Sin embargo, el brillo de la digitalización no debe cegarnos de sus aspectos negativos. A tenor del denominado "imperialismo de las plataformas", se necesita un enfoque precavido y esencial. La "brecha digital" es un duro golpe al principio fundamental de la igualdad de oportunidades en la educación. La protección de la educación contra las fuerzas de la privatización y las "empresas de educación", pronunciadas por la digitalización en el ámbito educativo, también es un desafío abrumador. Debemos mantener a raya el efecto nocivo, e incluso deshumanizador, de las tecnologías digitales, ya que estas herramientas pueden ser dañinas si no se controlan y reglamentan debidamente.

[1] UNESCO, *Reimagining Our Futures Together: Report from the International Commission on the Futures of Education* (2021), p. 36.
[2] Nicholas Carr, *The Shallows: What the Internet Is Doing to Our Brains* (New York and London, W.W. Norton and Co., 2010), p. 41.

Introduction

The digital revolution is taking place at a dazzling rate and digital technologies are becoming ubiquitous. There is huge interest in digital devices as they provide vast opportunities for connectivity. Digital technologies are pervading economy, trade and commerce as well as financial transactions. The upsurge in the digital technologies is also transforming the world of work in an unprecedented manner. E-culture or digital culture as a new sphere of human activity for creating virtual objects of science and arts as well as the phenomenon of 'E-learning' as a drive towards a digitalized education system show how digitalization is penetrating almost all walks of life. Possession of mobile phone or digital device is becoming a determinant factor in availing of services – public or private. We are living in a world dominated by "platform imperialism", to borrow the term expressed in the United Nations Educational, Scientific and Cultural Organization (UNESCO)'s work - *Reimagining Our Futures Together*. [1]

Digital Technologies and Transforming the Landscape of Education

Acquiring digital literacy is an imperative in today's information society as digital technologies are transforming the landscape of education. They provide vast opportunities for new forms of connections and collaboration, as knowledge and information can be digitalized and transmitted by electronic devices instantaneously. Moreover, digital technologies multiply learning pathways and diversify learning approaches. Online education materials and courses, e-textbooks, and streaming video and audio files used on the Internet, variously referred to as e-learning, are revolutionizing the provision of education. As Nicholas Carr has put it, "the future of knowledge and culture no longer lies in books or records or CDs. It lies in digital files shot through our universal medium at the speed of light."[2]

New models and ways of learning - digitally supported and virtual – are emerging with rapid pace. Transforming the education system embedding such novel approaches is projected by the protagonists of digitalization as being 'innovative', enticing the education system to be put on the digital track. Harnessing digital technologies for education and learning is thus enticing. Renewal of education by dint of what is termed 'edu-tech' has become a buzz word. The drive towards the digitalization is inducing the education institutions to embrace them in their management and governance. The contents as well as methods and modes of teaching and learning are increasingly being designed with digital use in mind, centered around *virtual learning*.

The need to unleash the full potential of information and communications technologies (ICTs) for education in an endeavour to "seize digital opportunities, lead education transformation" was recognized in the context of discussions under the aegis of UNESCO on the post-2015 Education Agenda.[3] The 2030 Agenda for Sustainable Development proclaimed by the heads of State/Government at the United Nations Summit in 2015 states that, "The spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies..."[4] Reimagining education systems for the world of today and tomorrow and creating a global movement for transforming education, taking cognizance of the transformative impact of digital technologies in education was the raison d'être of the 'Transforming Education Summit', convened by the United Nations Secretary-General during the 77th United Nations General Assembly in September 2022.[5]

Digital technologies are impacting education at all levels and in all its forms. School education is being given a new shape by way of digital infrastructure, like digital boards, digital classrooms as well as new ways of teaching and learning. Adults and even children in schools are being obliged to use digital tablets, smart phones and digital games, with the imposition of virtual learning, and even 'machine learning'. A multiplicity of learning sites and modes exist for delivering technical and vocational education and training. Moreover, education and training are also provided in a "virtual learning environment" by means of Internet-based education, e-learning and e-training initiatives. These developments in digital technologies enhance possibilities for informal education and learning. Moreover, they open new vistas for "self-learning."

As a result of proliferation of digital technologies, the system of higher education is undergoing even faster transformations. It is being put on a digitalized track in a competitive spirit – a trend which is more pronounced in fast growing privatization of institutions of higher education, sponsored by a range of entities, including individual proprietors and profit-seeking businesses. Universities, even public, are seeking avenues of collaboration with the corporate sector, private partners and agencies for support and for funding, for the procurement of digital devices and operationalization of hardware but also software. Establishment of a 'virtual university' is publicized as an innovative measure of pride for the country as a groundbreaking showcase of modernized higher education.

These developments are propelled by the perceived advantages that the digitalized education system offers, not only of instantaneous connectivity and retrieval of and access to digitalized material and information for research but also facilitating the performance of administrative tasks such as keeping records of financial and administrative matters, procedure for admission, payment of fees and dues, communication of students' assessment etc. Thus, with the introduction of digital technologies, education administration and management is being ameliorated as regards its efficiency. Digital devices and tools can perform monitoring functions at any time in any

[3] UNESCO Conference on ICTs and 2030 Education Agenda, 2015. Available from http://wayback.archive-it.org/10611/20171122190730/http://www.unesco.org/new/en/unesco/themes/icts/policy/international-conference-on-ict-and-post-2015-education/.
[4] United Nations, Transforming our world: the 2030 Agenda for Sustainable Development, A/ RES. 70/1, 25 September 2015, para 15. See https://sustainabledevelopment.un.org/sdg4.
[5] UNESCO Transforming Education Pre-Summit organized at UNESCO, Paris, 29-30 June 2022, provided an inclusive and open forum for countries, encouraging them by national consultations for their commitment to transforming education. It was also a call for the stakeholders to come together and join hands to transform education.

location; it is now possible to know and verify from a distant location in real time how many students are in classrooms or in the school and what kind of activity they are engaged in, how many teachers are present and what type of function they are performing at any point of time, etc. The introduction of digital technologies in the education system is becoming an important consideration in education policies and programmes as "high-quality education" today means fostering "strong digital literacy; equipping all learners with the competences needed to search, evaluate and use information and knowledge – as well as actively creating and communicating in a variety of formats and platforms."[6] The push being given to 'edu-tech' for creating an increasingly "technology rich environment" in educational institutions is making it necessary not only for students and teachers but also administrative staff of an education institution to acquire necessary skills for becoming adept in operating digital devices in a digitalized education system. This may consolidate further the stronghold of "platform imperialism", mentioned above, especially in view of the rapid pace of developments in Artificial Intelligence (AI), opening new vistas for its usage in education and learning.

Need for a Cautious and Critical Approach

The digital revolution is taking place at a dazzling rate. However, the gaze on the dazzles of digitalization must not lose sight of their down side and their deleterious effect. As the Report of the United Nations Secretary-General on the Roadmap for Digital Cooperation, launched at the United Nations on 11 June 2020 states, the world which is shifting very fast from analog to digital, is "exposing us to the vast promise and peril of new technologies. While the digital era has brought society many incredible benefits, we also face many challenges such as growing digital divides, cyber threats, and

human rights violations online."[7]

As such, in embracing digital technologies, public authorities must adopt a cautious and critical approach, guided by the aphorism: all that glitters is not gold. Though technologies in general are both beneficial and baneful, and much depends upon how they are used, the very nature of digital technologies is different and special – in some ways, their use is inherently insidious. As observed in the OECD's *Trends Shaping Education 2022*, "Rapid technological change may not help pressing social needs, and despite rising connectivity, many feel lonely and voiceless."[8] Use of digital devices erodes per se the intellectual faculty - capacity to think, reason and reflect, which is a precious asset of human life. Internet based learning fosters compliant thinking and impoverishes scholarship. With their constantly booming publicity and chronic distraction, the digital devices dissipate users' capacity for concentration. Moreover, in their use, digital devices place the focus on application rather than on contemplation. Nicholas Carr has warned us about the dehumanizing impact of the Internet on our brains and on meditative thinking: "How sad it would be, particularly when it comes to the nurturing of our children's minds, if we were to accept without question the idea that 'human elements' are outmoded and dispensable. (...) 'meditative thinking,' as the very essence of our humanity, might become a victim of this."[9].

As a result of unbridled spread and uninstructed use of ICTs and digital devices and various websites, children and youth are being uprooted of human values. This aggravates today's value-crisis, manifest by primacy given to materialistic pursuits engendered by the neo-liberal economy to the detriment of the humanistic mission of education. Gravity of 'values-crisis' is evidenced, for example, by crimes including

[6] Organisation for Economic Cooperation and Development (OECD), *Trends Shaping Education 2022* (Paris, OECD Publishing, 2022), Chapter 3. Available from https://www.oecd-ilibrary.org/sites/6ae8771a-en/1/3/4/index.html?itemId=/content/publication/6ae8771a-en&_csp_=c08144de6b681428094a3a71a4549454&itemIGO=oecd&itemContentType=book.

[7] United Nations, *The Roadmap for Digital Cooperation: Report of the Secretary-General*, June 2020. Available from https://www.un.org/en/content/digital-cooperation-roadmap/.

[8] OECD, *Trends Shaping Education 2022*, Executive Summary. Available from https://www.oecd-ilibrary.org/sites/6ae8771a-en/index.html?itemId=/content/publication/6ae8771a-en.

[9] Nicholas Carr, *The Shallows: What the Internet Is Doing to Our Brains)*, page 13. Available from http://www.nicholascarr.com/?page_id=16.

cybercrimes, liberally diffused pornographic websites, false or deceptive publicity, misleading advertising and fake news, video games spreading a culture of violence, cyber bullying,financial scams and even terrorism.[10] We must, therefore, be wary of potentially harmful and pernicious impact of various virtual sites on minds of children, adults and youth, on human values, on the education system and society of today and tomorrow. Abundant care is necessary by way of public policies that introduction of digital devices in education does not cripple or even compromise the humanistic mission of education and learning to bring forth the potential in every human being and nurture and nourish mental and intellectual faculties with a focus on human values.

In their quest for harnessing digital technologies for education and learning, developing countries, therefore, need to ponder over their pros and cons with a judicious approach. As the United Nations Secretary-General, Antonio Guterres has observed, "some of the developments in today's tech and innovation hubs are cause for serious concern."[11] The use of digital technologies in education is leading to more consumer-oriented attitudes in Universities and is resulting in the commodification of knowledge, valuing of information in economic terms rather than for its social and cultural significance. Policy makers need to understand insightfully the repercussions of digital devices in education before embracing them. This is crucial considering the fact that while advantages accruing to education and learning by use of digital technologies are publicized at large and even overpublicized, their repercussions and risks involved remain inadequately addressed, and call for greater attention. Analyzing the policy implications of use of ICTs and digital technologies in terms of what they entail – not only how they are beneficial but also how they can also be pernicious if not properly

controlled and regulated, is an essential prerequisite in introducing digital devices in education. In that perspective, raising a public debate on the digitalization of education system is necessary to throw light on advantages it yields and the risks involved. This is all the more important as regards the repercussions of the fast-growing AI in the field of education.

Safeguarding Education from Forces of Privatization, Fortified by Digitalization in Education

Owing to privatization in education, wrought by laissez-faire economy and unbridled market forces, education is becoming a commodity, and 'edu-business'[12] is flourishing, especially in a large number of developing countries. This is being cemented as a result of the introduction of digital technologies in education because of a predominate role of private players and service providers. Education, to use the expression of an OECD document[13], is being 'datafied' as a result of digitalization. This is bringing about a shift in the power relationships between public and private providers of education, making data owners/brokers (e.g. digital platforms and services) preponderantly powerful. Private players and stakeholders in the field of education as providers of digital technologies both in private and public education establishments wield decisive influence. Many firms are engaging themselves in providing a wide range of digital-based educational services in schools but also in universities – teacher training, designing curriculum, private tutoring, provision of E-books and E-materials and digital devices as a mode of communication between teacher and taught. These services are also used as a tool in enrolment and examination, in communication of students' assessment and certification, thus making digital technologies a predominant if not exclusive mode in teaching and learning. Digitalization seems to be supplanting the conventional education system. Capitalizing on the rise of online and web-based learning, a large number of private educational

---

[10] "Tackling Inequality: A New Social Contract for a New Era", Nelson Mandela Annual Lecture 2020 by United Nations Secretary-General Antonio Guterres. Available from https://www.un.org/en/coronavirus/tackling-inequality-new-social-contract-new-era.
[11] See Committee on the Rights of the Child: General Comment 13 (2011) on the right of the child to freedom from all forms of violence, para. 31.

[12] Even the academic vocabulary evinces the spirit of privatization, manifest in concepts such as return on investment in education, the "higher education market" and "market leading" universities etc.
[13] OECD, *Trends Shaping Education 2022*, Chapter 3.

institutions specialize in areas such as management, marketing, financing and trade, E-commerce, accountancy and communication and even award diplomas and degrees that are devoid of equivalence or validity. Private entrepreneurs and operators are powerful players in digital based 'edu-business', which has become most lucrative. No wonder, digital giants are making the foray into education and learning because digitalized education system is invaluable for their own digital business to flourish.

Governments especially in developing countries often succumb to commercial pressures that promote the sale of technology without a careful analysis of the actual benefits for students or teachers, educational establishments and for the education system at large. Moreover, for want of control and regulation of digitalization, the multiplicity of learning sites and modes for delivering education and training in a 'virtual learning environment' involve fraudulent practices. Fake degrees and diplomas can be bought on-line as if these were commodities.

Safeguarding education and learning from the forces of privatization, fortified by the digital revolution, is of utmost importance as this phenomenon scuttles the norms and principles that underlie the right to education. [14] It also runs counter to the vision and promise of the United Nations as brought to the fore by the United Nations Secretary-General that food, healthcare, water and sanitation, education, decent work and social security are not commodities for sale to those who can afford them, but basic human rights to which we are all entitled.[15] As such, "edu-business" of "edu-tech" requires to be regulated stringently, especially in developing countries. A global movement is necessary to curb the operation of private forces in education by setting limits to market-driven laissez-faire economy in an endeavor to safeguard education and learning as a public good. In a broader perspective, such a course of action would be opportune in response to the United Nations Secretary-General's call for a New Social Contract and his plea for a New Global Deal to ensure that power, wealth and opportunities are shared more broadly and fairly at the international level. This would also be the surest way to overcome the "digital divide".

Overcoming the 'Digital Divide'

The "digital divide" is becoming a stark reality of the digital age. It reinforces social and economic divides, from literacy to healthcare, from urban to rural, from kindergarten to college.[16] In the field of education, "digital divide" is a manifestation of aggravating marginalization and exclusion in education in tandem with increasing social inequalities engendered by concentration of wealth and power in the hands of few and its tiny share for a vast majority of world population. With the introduction of digital technologies, disparities in education are becoming accentuated on account of their unaffordability for the marginalized, pushing them further aside. The United Nations Broadband Commission for Sustainable Development had already warned in 2016 that making access to education dependent on ICTs, computers and broadband reinforces existing inequities in education, thus running counter to making education inclusive and equitable.[17] The costs of digital devices and tools and services such as computers, tablets and smartphones, and broadband services, required for access to digitally supported education, are exorbitant for nearly one third of the world population, victims of poverty. In a large number of developing countries, especially in the least developed countries, those who are marginalized cannot afford to buy these digital devices. Impediments in access to them must also be seen in terms of the rural–urban divide as people in remote areas are disadvantaged or cut off. Disparities in access to education and the "digital-divide" are not only an intra-country phenomenon; it is also a global

[14] United Nations, The Right to Education in a Digital Age, Report by the United Nations Special Rapporteur on the Right to Education, A/HRC/32/37, 6 April 2016.
[15] "Tackling Inequality: A New Social Contract for a New Era", Nelson Mandela Annual Lecture 2020 by United Nations Secretary-General Antonio Guterres.

[16] "Tackling Inequality: A New Social Contract for a New Era", Nelson Mandela Annual Lecture 2020 by United Nations Secretary-General Antonio Guterres.
[17] Special Session of the UN Broadband Commission for Sustainable Development: Joint Statement (January 2016). Available from http://www.broadbandcommission.org/Documents/publications/davos-statement-jan2016-en.pdf.

issue as the disparities between developed and developing countries in their ability to access digital technologies are also alarming. In 2019, some 87 per cent of people in developed countries used the internet, compared with just 19 per cent in the least developed countries.[18] As the UNESCO International Commission on the Futures of Education in its Report on *Reimagining Our Futures Together* has pointed out, "in part, the 'digital divide' exists because, by definition, it ignores those outside its sphere and all that evades its techniques of measurement, storage and analysis. In these respects … ".[19]

The "digital divide" between developed and developing countries but also within countries flies in face of the international legal obligations of States for the realization of the right to education and learning without discrimination or exclusion. In keeping with the international legal framework for the right to education, "Education in all its forms and at all levels" must exhibit some interrelated and essential features in terms of its availability and access in functioning educational institutions and programmes with facilities "such as a library, computer facilities and information technology" as well as access to education through a "distance learning" programme.[20] It is, thus, incumbent upon States to ensure that access to education and learning is not undermined, much less crippled in case of introduction of digital technologies in education.

The "digital divide" is also a crushing blow to the fundamental principle of equality of opportunity in education, enshrined in all international human rights conventions[21] and in the constitutions of

many countries. Under these conventions, it is the international legal obligation of the State to ensure that everyone has the right to universal access to education without discrimination or exclusion – an obligation which remains of abiding importance as regards digital-based education and learning.

To that end, a two pronged strategy is required – on the one hand, setting limits with a judicious approach to the digitalization in education and to unbridled spread of so-called 'edu-tech', and on the other hand, devising policies and programs founded upon the emerging concept of "digital commons", buttressed by enhanced budgetary allocations and national investment for education, thereby expanding opportunities for digital-based education and learning so that such education and learning is made accessible, free of costs as a right.

Setting Limits to the Digitalization in Education and Unbridled Spread of 'Edu-Tech'

As described above, digital technologies can be valuable for education as they offer advantages in terms of infrastructural facilities in educational establishments, their governance and as tools for teaching and learning modes and methods. However, under all circumstances, they must be treated as only supportive means and complementary tools and should not be allowed to supplant the education system. The usages of digital technologies in education must be allowed so long as the virtual does not become vicious. Public policies should ensure that digital devices as tools remain subservient to the humanistic mission of education.[22] Preserving the humanistic mission of education is of overriding importance as against its mere technical role, whatever be the mode and method of education and learning.

[18] "Tackling Inequality: A New Social Contract for a New Era", Nelson Mandela Annual Lecture 2020 by United Nations Secretary-General Antonio Guterres.
[19] UNESCO, *Reimagining Our Futures Together: Report from the International Commission on the Futures of Education*, p. 36.
[20] General Comment 13 on the right to education (Article 13 of the International Covenant on Economic, Social and Cultural Rights), adopted by the Committee on Economic, Social and Cultural Rights at its twenty-first session in 1999 (E/C. 12/1999/10, 8 December 1999, para. 6).
[21] UNESCO Convention against Discrimination in Education (1960), which is the precursor of the international human rights convention, specifically lays down the obligations of the States parties to the Convention to "undertake […] to formulate, develop and apply a national policy which, by methods appropriate to the circumstances and to national usage, will tend to promote equality of opportunity and of treatment in the matter of education." (Article 4 of the Convention).

[22] The Qingdao Declaration adopted in 2015 at the International Conference on Information and Communications Technologies and Post-2015 Education held in Qingdao (Republic of China) identifies the challenge of realizing the potential of digital technologies within a humanistic framework (para. 13). See http://unesdoc.unesco.org/images/0023/002333/233352E.pdf.

In this respect, it is important to bear in mind that the use of ICTs and digital devices in schools by themselves do not enhance quality of learning. An OECD study is insightful. It revealed a few years back that over the past 10 years, there has been no appreciable improvement in student achievement in reading, mathematics or science in countries that invested heavily in ICTs for education.[23] These findings must alert the policymakers and governments, especially in developing countries, who hope to find salvation in expensive technological purchases. Computers and tablets alone make no difference in improving learning if teachers and administrators of educational establishments have not been involved in planning and have not received adequate training to effectively use the technology in the classroom, and this while ensuring that they are used as a complementary tools, and not allowed to go too far in supplanting all the methods and modes of learning and education.

Setting limits to introduction of digital technologies in education is necessary both as regards the procurement of digital technologies for infrastructural purposes as well as the use of these technologies in teaching and learning. Limits should be set on digitalizing infrastructure in schools, especially as regards installation of machine learning and artificial intelligence devices etc.

The use of digital devices in education at various levels can be restricted bearing in mind the necessity or importance of so doing in a contextual perspective - a generalized use of these devices as may be expedient for the purposes of educational governance and administration; a minimalist approach at basic education level; a cautiously permissible approach at higher education level; and utilizing ICTs and digital devices with an enabling policy environment as regards the stream of vocational education and skills development.

Restricting the use of digital devices at the stage of basic education is of critical importance. School administration as well as families should avoid situations in which children and adults remain confined to the screen and computers for long hours in schools but even at home since this has psychosocial repercussions making them apathetic and *asocial*. From early stage in life, they thus become divested of joys of live human interactions. This seriously impacts their behavior patterns. Protecting children from the potentially harmful effects of various sites on the Internet and the risks it carries is a policy imperative. It is incumbent upon public authorities to save children and adults from the harmful effects of use of digital devices, as already been mentioned. Bearing in mind the 'best interest' of the child, the use of digital technologies at the stage of basic education should be kept within minimal limits. As Audrey Azoulay, the Director-General of UNESCO, has observed, the teacher can never be replaced by the screen.

Children should also be encouraged and nurtured to learn using their brains rather than digital instruments in simple matters like counting and calculating. The digital technologies should not be imposed on children in a compelling manner as they are detrimental to the joy of live human interactions, of recreation and of play, crucial for their physical and mental growth and well-being. Use of AI devices like machine learning and robotics etc. for teaching in schools should be strictly banned. Besides, consideration should be given to the serious repercussions of the use of digital technologies for the teaching profession as they jeopardize 'academic freedom' of teachers who are obliged to use technology-based education models and various apps and algorithms at the insistence of their employers and do not have a choice in the adaptation of material and application of teaching methods. In the face of the rise of online and web-based learning, it is important to recognize the limits of the pedagogical value of technology-based and distance education.

At higher education level, opportunities provided by digital technologies for new forms of sharing knowledge and information and the potential for

[23] OECD, *Students, Computers and Learning: Making the Connection* (Paris, OECD Publishing, 2015). Available from https://www.oecd-ilibrary.org/education/students-computers-and-learning_9789264239555-en.

collaboration they offer are valuable. Academic work, research and writings, books and articles which can be sourced via Internet are indeed immensely beneficial for the pursuits in higher education. Massive open online courses (MOOCs) can be used at national level for sharing nation-wide what is excellent in a given discipline. Similarly, facilities of the Internet and Google in the university liberties are highly serviceable.

Digital technologies are all pervasive in studies in many areas of technical higher education like management, financing and trade, marketing, engineering, architecture etc. and harnessing digital technologies for studies in such areas is becoming indispensable. Similarly, skills development through technical and vocational education can also meaningfully benefit from digital technologies as the enterprises need more and more skilled workers for performing new skills-based tasks in operating digital technologies.

However, unbridled use of digital technologies in higher education must be restricted when their usage is detrimental to the development of intellectual faculty of students. The use of AI devices, for instance, is a matter of particular concern. As ChatGPT and GPT4 launched recently by OpenAI revealed, these can be instrumental for indulging in fraudulent practices as students and researchers can use the content produced by AI platforms as if it was their own work. The ban on use of ChatGPT and GPT4 in education in several Western countries[24] shows the way educational establishments can prohibit AI devices when their usages make it possible for students and researchers to produce a work for their assessment which in fact is not their original work. Controlling AI devices stringently would become even more critical, especially for education when one visualizes that these devices could become susceptible to hacking and manipulation of thoughts by way of implants and

wearables that wire computers to brains. Voice mimicry and mind control that AI could make possible are indeed frightening. Considering that neural sensors will become part of our everyday technology and a part of how we interact with that technology, the need for 'a new human right to cognitive liberty' has been proposed in order to protect our private thoughts from technology.[25]

The expanding horizons of digital technologies in the form of emerging AI devices also involve questions of law, of philosophy and ethics, so relevant to the vocation of education. In this respect, the UNESCO Declaration on ethics of artificial intelligence, adopted in November 2021 is a landmark development as it raises ethical concerns having relevance to the introduction of AI devices in education and learning. The Declaration underlines the "need to ensure the transparency and intelligibility of the functioning of algorithms and the data from which they have been trained," because these can influence "human rights and fundamental freedoms, gender equality and democracy", whose defense is an avowed objective of education.

Digital devices connect people virtually but they disconnect them as regards the joy of live, face-to-face interactions. Online and web-based learning entail deprivation of live human interactions in education. Preserving face-to-face live interactions and modes of teaching and learning *in praesentia* should always remain a predominant consideration while integrating digital technologies into traditional classroom activities. Virtual ways of teaching and learning, deprived of the live human interactions, run counter to the key vocation of education for fostering 'learning to live together' and 'learning to be' propounded by the report to UNESCO of the International Commission on Education for the Twenty-First Century, Learning: the Treasure within .[26]

[24] ChatGPT was banned in New York's public schools due to concerns over its "negative impact on student learning" and potential for plagiarism. The University of Sydney's latest academic integrity policy now specifically mentions "generating content using artificial intelligence" as a form of cheating. The use of ChatGPT in higher education has also been banned in France.

[25] Nita Farahany, *The Battle for Your Brain: Defending the right to think freely in the age of neurotechnology* (Macmillan, Publishers, 2023).
[26] *Learning: the Treasure within, Report to UNESCO of the International Commission on Education for the Twenty-First Century* (1996).

In this connection, consideration should be given to a new mode of education which has come into being – the "blended learning". This is a mixed mode instrument in which students learn via electronic and online media as well as by way of traditional face-to-face education. There may be situations which warrant "blended learning" which combines face-to-face classroom practices with computer mediated content and delivery. For instance, "blended learning" can bring together formal and non-formal ways of learning using digital devices. However, consideration needs to be given to the fact that "blended learning" breeds disparities in access to education as only those students who can afford computers and learning tools can avail of this mode of learning.

(i) Expanding Opportunities for Digitally Supported Education and Learning

Expanding opportunities through wider access to digitalized devices and material for learning and education can mitigate inequalities in access to education. This can be instrumental in bridging the 'digital divide'. Some initiatives launched by the international community in this respect are ground-breaking. The Paris Declaration on Open Educational Resources (2012), adopted under the auspices of UNESCO opened new legal avenues for accessing educational material and knowledge including in digitalized form with a normative framework on Open Educational Resources (OER).[27] Underpinned by the idea that knowledge is a public good, which should be freely shared by all, and not restricted for private profit, the OER has the objective of safeguarding knowledge from being an unaffordable or abusive priced commodity. It has been supported by the Creative Commons – a non-profit organization, encouraging copyright owners to license the use of their material through open content licenses so that efforts and complexity in

copyright licensing are minimized, and copyright authors can ensure that their work can be rapidly and easily used.[28]

A global initiative on Gateways to Public Digital Learning launched by UNESCO and the United Nations Children's Fund (UNICEF) at the Transforming Education Summit (held in September 2022) is another landmark development with a view to universalizing access to digitalized material for learning and education. Reflecting the emerging concept of "digital commons", it is a global, multi-partner initiative to support countries in securing equitable access to digital learning resources. It aims at bringing into being an international movement with technical support to ensure that every learner, teacher, and family can easily access, find, and use high-quality and curriculum-aligned digital education content to advance their learning.[29] In that spirit, it aims at extending help to countries to create and strengthen national platforms; identify and share best practices; and establish international norms and standards to guide the development of these platforms.[30] Overseen, sustained, and improved with public resources, these platforms should be free for all users and complement and support teaching and learning that happen in school. They should also open avenues for self-education and lifelong learning. Thus, the Gateways initiative is expected to expand and foster access to curriculum-aligned digital education resources, ensuring that they are free, open and accessible for all and respect the diversity of languages and learning approaches with full safety for the privacy and data security of users.

The idea behind the Gateways initiative as a multi-partner initiative, reaffirming digital education as a public good, is laudable. Its spirit as a multi-partner initiative is analogous to the Roadmap for Digital Cooperation, launched at the United Nations on 11

---

[27] Open Education Resources is defined as "teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work." UNESCO, Paris Declaration on Open Educational Resources (2012). Available from https://en.unesco.org/oer/paris-declaration. See also OECD, *Open Educational Resources: A Catalyst for Innovation* (Paris, OECD Publishing, 2015).

[28] Berkman Center for Internet and Society, Harvard Law School, "The digital learning challenge: obstacles to educational uses of copyrighted material in the digital age". Available from http://cyber.law.harvard.edu/media/files/copyrightandeducation.html.
[29] United Nations, "Gateways to Public Digital Learning", Transforming Education Summit. Available from https ://www.un.org/en/transforming-education-summit/gateways-public-digital-learning.
[30] United Nations, "Gateways to Public Digital Learning".

June 2020, which recognized that all stakeholders play a role in advancing a safer, more equitable digital world, one which will lead to a brighter and more prosperous future for all.[31] Similarly, a multi-partner initiative is deemed to be a leverage in revitalizing national and global efforts to achieve Sustainable Development Goal (SDG)-4 and "renew our collective commitment to education and lifelong learning as a pre-eminent public good"[32] as one of the key objectives of the 'Transforming Education Summit' convened by the United Nations Secretary-General during the 77th United Nations General Assembly in September 2022. It is, therefore, propitious for developing countries to take policy measures in the wake of the Gateways initiative for the establishment of national digital learning platforms embodying the concept of "digital commons" so that digitalized sources of education and learning become free, open and accessible for all children, youth, and adults.

However, one must be wary of the pitfalls of multi-stakeholders' involvement in sincerely engaging for fostering digital education as a public good without any lucrative consideration. The euphoria for multi-stakeholders and public-private partnerships has led Governments especially in developing countries to seek to reach out to stakeholders and partners, along with private public-partnership as a conduit of introduction of digital devices in education even in public education system. Such partnerships carry potential risks for education to be unduly shaped by corporate interests and are difficult to be divested from market forces unless they are propelled by genuine philanthropic spirit. As such, it is incumbent upon governments to carefully scrutinize multi-stakeholders and public-private partnerships in education, especially as regards their engagement with the cause of education as a public good as against their lucrative interests and pursuits.

Moreover, the Gateways initiative is propelled by the idea that, "The time has come for countries as well as the international community to treat digital technology and virtual environments as core to the educational enterprise."[33] Public authorities must not embrace this idea without reservation. They can be guided by the view taken by the International Commission on 'Reimagining Our Futures Together' that, "Currently, algorithmic pathways, platform imperialism, and patterns of governance of digital infrastructures, present acute challenges to sustaining education as a common good."[34] The fact is that educational transformation and emerging models continue to be dominated if not shaped by private forces that run counter to education as a public good and its humanistic mission. It is important to bear in mind that involvement of multi-stakeholders and public-private partnership arrangements for putting education system on a digital track does not change the nature of the right to education or the State obligations for devoting maximum possible resources to education and learning.

(ii) Enhancing Investment and Increasing National Budget for Education and Learning

Introducing digital technologies in education and expanding opportunities for learning and education necessarily require more resources. However, the fact is that many governments in developing countries are decreasing budget for education, while at the same time, opting for introducing digital devices in education. As a result, the public education system, especially in developing countries, is shrinking. Students or their parents have to bear the burden of the heavy cost of introducing ICTs and digital devices in education – a situation which militates against the provision of education as a public good. Public policy responses especially in developing countries have, therefore, to grapple with resource constraints as governments are abdicating their *core responsibility*

[31] The United Nations has also launched 'Giga', an ambitious project to get every school in the world online. See "Tackling Inequality: A New Social Contract for a New Era", Nelson Mandela Annual Lecture 2020 by United Nations Secretary-General Antonio Guterres.
[32] United Nations, Transforming Education Summit, New York, 16,17, 18 & 19 September 2022. Available from https://www.un.org/en/transforming-education-summit.

[33] United Nations, "Gateways to Public Digital Learning".
[34] UNESCO, *Reimagining Our Futures Together: Report from the International Commission on the Futures of Education*, p. 35.

for the provision of education and its financing as a fundamental human right. Enhancing investment and increasing national budget for education and learning, necessary for financially supporting the introduction of digital technologies in education is indispensable.

Partnerships with multi-stakeholders are one of possible ways being advocated for raising resources for introducing digital technologies in education. However, the interests of multi-stakeholders are often aligned with those of the "educational enterprises", and as already mentioned, reliance on multi-stakeholder partnerships for financing education carry potential risks for education to be unduly shaped by corporate interests and pave way for its commercialization. Public policy must ensure that multi-stakeholders and all public-private partnerships are grounded in "strong public institutions" and a "sound regulatory framework"[35], as recommended by the OECD. The need and importance of preserving education as a public good and public interest in education should be kept in forefront. It is also incumbent upon Governments to establish a clear policy and normative framework for regulating the operations of the private sector and stakeholders in the provision of necessary 'edu-tech' products and services.

A more plausible approach would be primacy on mobilizing financial resources domestically. Reckoning with the constraints on governments for meeting the costs involved in the introduction of digital technologies in education, raising public resources by way of innovative mechanisms of financing digital technologies for education would be propitious. Such innovative mechanisms can alleviate the financial burden of governments. For instance, governments can make it obligatory for the digital firms operating in their country to pledge a certain percentage of their turnover as contribution towards

the cost of equipping the education system with ICTs and digital technologies. Similarly, it can be made mandatory for the tech enterprises in a country to earmark a certain percentage of their Corporate Social Responsibility as contribution to the national budget for digital technologies. A regulatory framework can be devised so as to ensure effective implementation of such innovative mechanisms with full credibility and transparency.

Conclusions

Digital technologies are transforming the landscape of education with a rapid pace. While advantages and benefits of introducing digital technologies in education are palpable and even enticing, the risks involved are huge. The "digital-divide" engendered by the introduction of digital technologies in education is a crushing blow to the fundamental principle of equality of opportunity in education, enshrined in all international human rights conventions. The baleful effects of digital technologies can even be dehumanizing. The introduction of digital technologies is aggravating "value-crisis", with potentially harmful and pernicious impact of various virtual sites on minds of children, adults and youth, on human values, on the education system and society of today and tomorrow. There is, therefore, need for a cautious and critical approach. Such an approach is all the more important in view of rapid developments in Artificial Intelligence which even according to its progenitors poses a threat to humanity.

In their quest for digital technologies for education and learning, developing countries need, therefore, to ponder over all the pros and cons and this in a long range perspective. With a judicious approach, public policies must address issues of critical importance, already highlighted, like "edu-business", making education a commodity – a trend fortified as a result of the introduction of digital technologies in education because of the predominate role of private players and service providers. It is incumbent upon governments to carefully scrutinize multi-stakeholders and public-private partnerships as regards introduction of digital technologies in education, and preserve education as a public good with a regulatory framework.

[35] OECD Recommendation of the Council on Principles for Public Governance of Public-Private Partnerships, May 2012.

A two-pronged strategy is required – on the one hand, setting limits to the digitalization in education and unbridled spread of so-called 'edu-tech' so as to ward off against the deleterious effect of digitalization in education; and on the other hand, expanding opportunities for digitally-supported education and learning as a public good. Devising policies and programs founded upon the emerging concept of "digital commons" is momentous for universalizing access to education and learning by way of national digital platforms, accessible, free of costs, buttressed by enhanced budgetary allocations and national investment for education. Harnessing digital technologies for education should be inspired by a human rights-based approach in line with the 2030 Agenda for Sustainable Development, recognizing the right to education as an overarching human right, essential for the exercise of all other human rights.

Author: Kishore Singh is former United Nations Special Rapporteur on the Right to Education.

SOUTHVIEWS is a service of the South Centre providing opinions and analysis of topical issues from a South perspective.

The views contained in this article are attributable to the author(s) and do not represent the institutional views of the South Centre or its Member States.

**For more information, please contact Anna Bernardo of the South Centre:
Email abernardo@southcentre.int, or telephone +41 22 791 8050.**