West African Journal of Open & Flexible Learning
Volume 14, Number 1A, 2025

Open Education, Open Universities, and The Future of Learning and Instruction

Olugbemiro Jegede
Emeritus Professor
National Open University of Nigeria
ojegede@noun.edu.ng

Abstract

*The main fulcrum of open education is to enhance access, ensuring that no one is left out. Open education has emerged as a transformative force, reshaping traditional paradigms and fostering a more inclusive and accessible learning environment. The trends in open education reflect a global movement towards democratising knowledge, breaking down barriers to entry, and embracing innovative pedagogical approaches. These trends include measurable skills and micro-credentials, Artificial Intelligence, block chain, **v**irtual and Augmented Reality, IoT, new LMS, and intelligent and smart use of social media and network. The effects of these will be multi-dimensional and transformative, hugely profound affecting every human on the globe. Further evolution of the brain will lead to more creativity and innovations. As has other earlier technologies and inventions, they will adversely affect individuals and society. In many cases it could lead to further isolation and the increasingly plastic nature of human relationships. Inevitably, this development would lead to traumas of different kinds and dimensions. In looking for solutions, society must look into an integration and interaction of the body, mind and soul entities of human nature. Learning and instruction will now become completely open, more open than we currently have. Institutions must brace themselves for the avalanche of what is to come as the education of the future, which is already upon us would be as fascinating, enjoyable as it is fraught with signposts of obstacles and difficulties in teaching and learning.*

Keywords: Open education, open learning, open universities, future of learning, instruction

Introduction

Background to, and the emergence of, modern formal education

The journey of using education as an instrument of individual, community and organisation development has been a long one beginning from the 19th century when modern schooling was virtually forced upon an entire population. Since the time of Plato's Republic, a unique curriculum decided by the state became the norm. This was first implemented at a national scale in the early 19th century military theocracy of Prussia. The defeat of the Prussian army by the French army of Napoleon Bonaparte at the battle of Jena in 1806 forced Prussia under Frederick William III (1770-1840) to a nation-wide project to rebuild its educational and training system to 'form an army of determined and docile workers, easily mouldable to the changing needs of the industry, the government and the army. The new education system, which was a means of indoctrination, gave citizens the opportunity to learn how to read, write and count. 30 years after Prussia took its revenge on the French army in 1815 at the Battle of Waterloo.

The victory was attributed to the Prussian new system of education. This was quickly and massively copied by world powers. A good number of industrialised countries including Japan, France, Germany and the United States of America adopted the Prussian education model. This model established compulsory education, specific training for teachers, standardised tests nationwide for all learners (used to classify children for vocational training) a national curriculum designed for each level, and mandatory kindergarten. There were two hidden agendas in the compulsory Prussian education: First, to train men for the army, the factories and the public administration. Second, to instil social obedience in its population through indoctrination. Each person had to be convinced that the leader of the nation is just, that his decisions were right, that obeying him was a matter of utmost importance, and to teach loyalty to the Crown. Beginning from this, modern formal education spread throughout the world and became an instrument for societal development.

In a globalised 21st century technology-dependent world, learners require a progressive education that lives on knowledge economy, and an academic community that would use national and continental

regulatory frameworks including professional ethics. These enable the development of multi-skilled and multi-tasked educated people who subscribe to advancing their careers through research, within the overall terrain of comprehensive transformation of open education. The only way to the future is to gaze into what open education would become in the near future to provide a road map for governments, the organised private sector, and willing individuals and organisations in partnerships to fashion instruction and learning to suit the future.

The world is changing at a rate most humans can keep pace with. Let me now bring my two areas of specialisation and passionate interest to bear upon how the future of open education could emerge. I trained as both a science education (biology) specialist and I have an expertise in Open, Flexible and Distance Learning (OFDL). It seems to me that the way and manner living things, especially human beings, interact with the world in relation to growth and development is becoming more phenomenal and getting more profound by the day. I see an interesting intersection that has never become so obvious, real and markedly proceeding between our living entity, our biological make up, and with the environment of teaching and learning which keeps changing with the emerging technology.

I studied *Evolutionary Biology* in my undergraduate days. The study of Darwin's evolutionary theory of natural selection was a must as it formed the centrepiece of Evolutionary *Biology* course. The theory of evolution is broken down to five basic steps of Variation, Inheritance, Selection, Time, and Adaptation (VISTA). Human beings are no more evolving physically, as had happened when, according to science, we evolved physically through four (4) stages over time. Humans started as *Australopithecus*, evolved into *Homo habilis*, then into *Homo erectus*, and later into *Homo Neanderthalensis*. Finally, *Homo Neanderthalensis* evolved into *Homo sapiens*, which we are now. As far as my scientific knowledge can carry me, we have stopped evolving physically. The silent evolution of the brain is adding copiously to knowledge and information.

The silent evolution of the brain will exert some effect on the body, mind, and spirit of individuals; and this impact must be given some

attention, especially as emerging technologies are taking the world of *homo sapiens* to a level never reached before and the consequences which no one can predict. The effect of these is manifesting in changes in global development.

From my own observation, four major changes are now shaping the world: space exploration, the future of jobs and human capital development, emergence of artificial intelligence, and use of education as disruptive force. All these will combine to produce global citizens whose network of physiological, neurological, psychological, and spiritual existence and daily exertion might create some concerns for the new normal of individualistic, private, non-physical communications, and hermit-like living our current generation is being driven into by emerging technologies.

The enormity of the trauma that would be created is better imagined. We may be getting into a plastic life in which the psycho-neuro-spiritual-techno trauma which might engulf the life of the next generation would demand serious attention. There are indications that the incremental and continuous emergence of mental health issues being witnessed on our campuses today is only the tip of the iceberg of technology induced or related complications of modern day living. This will gradually spread to the entire society with deleterious effects. Thinking ahead for a solution, the world might benefit from the development of a digital application for the detection and assessment of the well-being/dis(order) of the human brain while at rest or at work. The indication is that our brain is more at work 24/7 than at rest; a red flag that must be watched curiously and all the time. This, of course, would leave the door to education (a form of education of the future which is still a bit amorphous and difficult to fathom) completely open, unadulterated, undiluted, and unrestricted.

The Open Ecosystem of the Future

With all the developments as outlined above, the world will become open so much so that there will be a ‘no-holds-barred’ approach in many things and in attitude towards life and endeavours. Global dealings would be only a tap on a button away. As emerging

technologies become ubiquitous and unimaginably versatile than ever before, ***the openness in the society would become more pervasive and unrestrictive than we currently experience***.

The future would be entirely and completely open, providing a broadly free interactions and accessibility to all that characterise interactions in instruction and learning with very limited restrictions. Life would move from a zero-shot human behaviour with segmentation to open society to reveal no exact pattern of behaviours and endeavours within a broad range of instructional and learning domains. Most human behaviours would be unconcealed, transparent, becoming flagrant. They would be variously termed as ingenious, innovative, creative, undisguised, and probably unprejudiced.

Wiley and Green (2012) suggest that openness is understood as:
freedom of access, availability for repurposing, and freedom from legal constraints, which are enabled by open licenses.

Other definitions of open learning include the following:
‘’Is about flexibility of and access to instruction in order to ensure broad availability of educational opportunities to a learner.’’

‘’Is an educational approach that focuses on flexibility, accessibility, and learner-centeredness.’’

‘’Open Learning:

- increases access to education,
- reaches a broader audience, breaks barriers to traditional education,
- improves learning outcomes,
- enhances learner engagement, motivation, and achievement
- fosters lifelong learning, and
- encourages learners to take ownership of their learning and develop skills for continuous learning.’’

The Emergence of Open Education in Higher Education

The Larger Society

The education sector of the totality of human behaviour is a microcosm of, and reflect all that go on in the larger ecosystem. Hence, the application of openness to the education system. Open education is related to the philosophy of content development, instruction, resource-sharing, collaboration, learner support services, etc. These are exemplified by the United Kingdom Open University (UKOU), which was established in 1969 as the first Open University in the world, as mentioned below.

Let us remind ourselves of the relatively long journey of education which led to the open education, as exemplified by the UKOU.

Once the issue of formal schooling was established, as mentioned above, attention was gradually drawn to adult workers who would wish to still study but had the barriers of distance to transcend.

Three fundamental issues, which act as the scaffoldings around which we define open and distance learning, underline its foundation, and act as raison d'etre. They are as follows:

1. The continuous and inevitable growth in human population, the need to acquire education while still working, and the concomitant dwindling opportunities to readily find employment;
2. Human movement and migration, which lead to the inevitable separation of the learner and the teacher, ensuring that teaching and learning do not necessarily require being present physically in the same classroom or location; and
3. Some form of medium to communicate ideas, discussions, and interactions between the learner and the teacher, being a sine qua non of instructional delivery at a distance.

The concept of ODL arose from an idea that *the* learners *and the* teachers do not necessarily have to be in the same class room and can, therefore, be separated by some circumstance. This circumstance, which creates the distance, can be geographical, economic, social, political, physical, etc., which form the barrier, obstacle, limitation, blockade, barricade, boundary, fence, or impediment to education. It is critical, therefore, to envisage that, in a way, providing an avenue for ODL to thrive is taking the distance out of the reach of education by a marginalised learner.

The literature has it that there are five (5) major mileposts to be noted in justifying the use of ODL. First, the field of ODL began with the need to accommodate different national "traditions" as well as the rapid change of technological and related pedagogical scenarios used.

Second, the emergence of ODL has contributed substantially to the establishment of a new "professional culture" for people involved, from different perspectives and various institutional levels, in the definition, implementation, and assessment of public initiatives, measures and policies oriented towards the development of ODL and its integration in mainstream education and training systems.

Third, ODL has given rise to a trend which has shifted the paradigm in educating learners from a prevalently teaching-based to a predominantly learning-based model. This trend has led to a re-engineering of the learning process in which learner needs, characteristics, and contexts are put at the centre of the design of learning systems.

Fourth, learning through ODL is essentially regarded as an emerging model of social action and interactions at all levels (learning society, learning organisation, lifelong learning for individuals). The emergence of the social media, escalated by modern technologies, could be used as an example (Bali, Cronin & Jhangiani, 2020).

Fifth, ODL complements and adds, rather than replaces or acts as a substitute, to formal face-to-face (f2f) mode of teaching and learning. What you see or what people regard as an emergence of "hybrid

models" integrating ODL segments, classroom-based, and work-based segments in the same learning path, and indeed the emerging trend of wholly or completely online or virtual models of teaching and learning, is an indication of how ODL will enrich pre-existing models of organising the learning process rather than replacing them.

The Beginning of Distance Education (DE)

Distance education, which began as correspondence study a little over 3 centuries ago, has grown tremendously. The first record of the emergence of Distance education was in 1728, when Caleb Philips, a teacher in Boston, Massachusetts, USA, advertised the first shorthand correspondence lessons ever to be offered by post (Bunker, 1987). This was followed in 1856 by Charles Toussaint and Gustav Langenscheidt, who attempted to teach language in Berlin, Germany. Distance education has many labels which include 'Correspondence', 'Telematic', 'Distributed', 'E-learning', 'hybrid-learning', 'Online Learning', and 'Virtual Learning'. It is an instruction by a mode other than the conventional face-to-face method, characterised by physical separation between the teacher and the learner; the instruction is delivered through a variety of media including print, and other information communication technologies to learners (Clark, 1906). DE is a cost-effective system of instruction independent of time, location, pace, and space, used for a variety of learning situations: primary, secondary, tertiary, vocational, and non-formal education; thrives on economy of scale; focused on quality assurance, well designed instructional packages, and a robust student support.

Access to distance learning is restricted, rigid, closed, insists on standard entry qualifications, it is time bound, comparatively expensive, and resource dependent. However, access to open learning is open, flexible, equitable, thrives on equality, and relatively cheap. Both distance and open learning models are based on extensive learner support, instructionally designed materials, learner focused, modular, and thematic. The packages are individualised and self-paced. The mode allows for different levels of independent programmes (certificate, diploma, bachelor, master, and doctorate).

Tertiary Distance Education

It is recorded that in 1883, a Correspondence University headquartered at Cornell University, in the USA, never got off the ground (Gerrity, 1976). This would have been the first dual mode higher institution in the world. It is on record that the first distance learning degree course was run by the University of London in 1858 through their External Programme while the University of Wisconsin in the USA first used the term, 'distance education', in 1892. In Australia, the University of Queensland became a dual mode institution when it began its distance learning school in 1911. In Africa, the University of South Africa was the first to run its present mode of distance learning education in 1946. The first Open University in the world is the UK Open University at Milton Keynes, England. It started in 1969 and took its first 24,000 students in 1971. Its exceptional success led to the establishment of Open Universities all over the world, including Indira Gandhi National Open University, Open University of Japan, National Open University of Nigeria, Open University of Malaysia, and Open Universities in Indonesia, Turkey, Greece, Spain, Brazil, Costa Rica, Fiji, etc. The first online distance learning programme emerged in 1965, when the University of Alberta offered some of the first online courses using IBM 1500 computers. As at today, there are about 101 Open Universities world-wide, 14 of these are in Africa, while Nigeria currently has five (5) (see Figure 1b below).

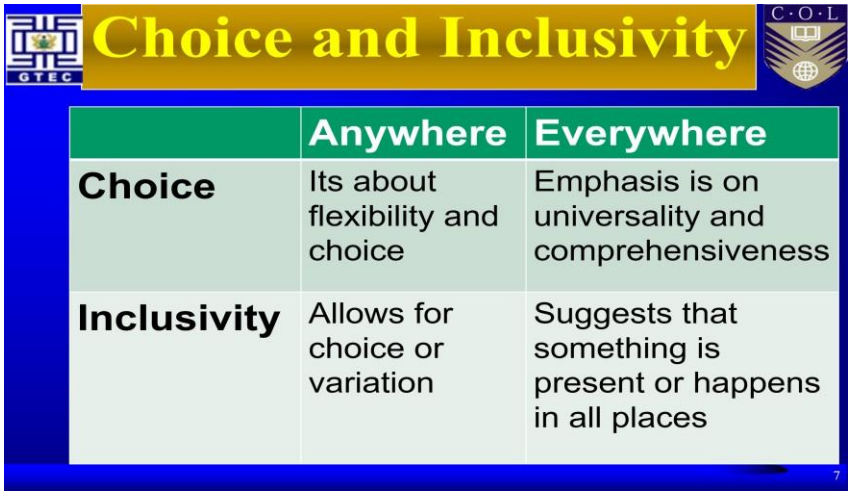

Figure 1a: Redefining Open Learning the 21st Century

Figure 1b: The Growing Number of Open Universities World-wide Source: The Author

Open education programmes offer the same opportunity to learn the same academic course materials but have no age limit or entrance requirement for acquiring the degree. It is an easier way for most adult learners to pursue education in comparison to attending a campus. Because many people who seek education through open programmes have other commitments (i.e. work and family), it is an easier way for them to further their education and improve their life. Open programmes often cost less than traditional campus education, so that means it is not only a cost-effective and affordable way for these adult learners to gather new skills and knowledge, but it still serves as an alternative to campus education for the traditional learners. This is a perfect example of how Maslow's theory of self-actualisation learning can apply. Open education programmes also offer worldwide global access to knowledge, teachers, and other learners. This, too, is another benefit of open education programmes; online course materials can be accessed at any time. This allows individuals to learn the material at their own comfort and pace. Online education can help those who may have disabilities or are not able to travel a distance to an educational facility.

The substantial progress in technology has led to many changes in society, the legal system, and economy, as well as in the field of education. One particular impacted area of education that will be discussed at great lengths in this essay is distance learning. With the increased use of computers and the internet, distance learning is growing rapidly. Despite this growth, there are, as with any new technology, benefits and drawbacks. One of the main issues with distance learning is that it is often done on an individual basis. There is often no face-to-face interaction, so there is a lack of collaboration and learning from others. However, the biggest benefit of distance learning and open education is that it breaks down many of the barriers to learning that are presented by the cost and location of an educational institution. This is appealing to students who want a higher education but are not able to afford the considerable cost it takes to attend a school. This is where open education can overlap with distance learning. Open education is a term referring to an education programme that uses technology to further education and give way to mass education in the global context where there are no barriers to learning, and a learning where people are empowered to change their lives.

In the 21st century learning environment, the profound manner in which emerging technologies affect and effect learning and instruction, it is now accepted and prevailing mantra on open learning is learning that takes place ***everywhere*** rather than anywhere. Using the two factors of choice and inclusivity, learning everywhere emphasises the universality and comprehensiveness as well as that the condition of learning is present in every location and it takes place or happens everywhere. Hence, these days, learning, as ubiquitous as it has become, can take place in the bedroom, kitchen, toilet, on the road in traffic, in the air, sea, and all places where humans and technologies can reach.

In the same vein as what lifelong learning depicts, everyone is a ‘learner’ and using the term ‘student’ has become unacceptable because learning is life-long, life-wide, and life encompassing. Similarly, open education includes, but not limited to, open access, open learning, open scholarship, and open pedagogy.

Importance of Open Education

Open education, is a generic term that refers to the implementation of the idea that the results of educational activities should be freely available to all and that everyone should have the right to use, reproduce, and modify such material. Open Educational Resources (OERs) can take the form of numerous digital tools and resources including text, audio, video, and software. Several authors have outlined the values of OERs and open education (Weller (2014). Mishra (2017) lists a set of characteristics which embody the values of open education. These include (amongst others), removing barriers to education, accessibility, sharing, and innovation. Open education has many potential advantages; McAndrew et al (2010) cite several studies which suggest that increased openness leads to improved learning (UNESCO, 2019). Kelly et al (2013) compared two versions of an online course, one in which all content was freely available, and another where content was pay-per-view. The study found that the course which was openly available saw greater learning activity and higher retention of students. Open education offers opportunities for informal learning and can act as a bridging tool between formal learning cases that are open to the public and those that are restricted. Openness offers greater flexibility in the creation and modification of courses and learning resources. Open education is an evolving field that is still gaining momentum and impacting traditional practices of education. The following section details the rising influence of open education and makes predictions on how it will shape future education in years to come.

Potential Trends of Future Open Education

The future of open education is exciting and rapidly evolving (Ramirez-Montoya, 2020a&b). Here are some potential trends and developments, garnered from the literature, that will shape the future of open education, making learning more accessible, effective, and inclusive.

1) Increased Accessibility, Inclusivity, Sustainability: Open education will continue to break down barriers, making high-quality education available to all, regardless of geographical, financial or other barriers, removing the distance between the learner and the education to be reached. Open education will

prioritise accessibility, ensuring equal learning opportunities for all. It will also prioritise inclusivity, accessibility, and environmental sustainability, ensuring education for all.

2) Open Universities and Institutions: Traditional institutions will evolve, incorporating open education principles and innovative pedagogies. Indeed, there are signs that the dividing line between traditional face-to-face institutions and open universities will disappear. Employers and others will only be concerned about the content, quality, and skills learnt. Learning and instruction will now be done everywhere, rather than anywhere (Weiyuan & Wei, 2019).
3) Open education has now branched into open access, open learning, open scholarship, and open pedagogy (see section 11 below). The trend will be for many other new branches, taking care of other new and emerging aspects such as open pedagogy (Benlamri, Klett, Wang, 2016).
4) Policy and Funding: While funding may no more be a serious issue, governments and organised private sector will collaborate much more and widely, as they together recognise the value of open education to the society, providing support and resources for its growth. It will continue to be increasingly impossible for governments or communities to keep establishing brick and mortar institutions when the funds expended on such infrastructure should be put into learning and teaching environment.
5) Lifelong Learning: Open education will support the development of essential skills for the 21st century, enabling learners to adapt and thrive. As life-long learning becomes the norm, those used to be tagged as students will now be called learners because we all will now learn for life.
6) Increased Adoption of Open Educational Resources (OER): More educators and institutions will adopt OER, reducing costs and increasing accessibility for learners. It is expected that high-quality, openly licenced materials will become the norm, reducing costs and increasing access. Quality, validation, standards, and recognition for open educational resources and credentials will emerge, ensuring quality and trust. Under the broad umbrella of OER, open textbooks will emerge under

open licence and made available online to be freely used by learners, teachers, and members of the public. Open textbooks will be distributed in e-book, or audio formats that may be downloaded or purchased at little or no cost, proving solutions to the thorny issues of access and affordability concerns.

7) Global Collaboration and Community Engagement: Open education will facilitate cross-cultural exchange, enabling learners to work together to address pressing global challenges. Open education will foster a culture of sharing, collaboration, and mutual support among learners, educators, and institutions.
8) Business and Job Opportunities: The future of open education will also create new business and job opportunities in sectors related to online education. This includes the development of educational platforms, content creation, and teaching opportunities for professionals.
9) Personalised Learning: Technology will enable more tailored learning experiences, allowing students to learn at their own pace and style. Technology and AI will enable tailored learning experiences, catering to individual needs and abilities.
10) Artificial Intelligence and Adaptive Learning: AI will enhance personalised learning experiences, making education more efficient and effective. AI and other immersive technologies such as block chain, **v**irtual and Augmented Reality, IoT, new LMS, and intelligent and smart use of social media and networks will dominate the scene and revolutionise learning. AI-driven assessments will provide more accurate and immediate feedback, enhancing the learning process.
11) Open Pedagogy: Instructors will adopt open and collaborative approaches, fostering a culture of sharing and community engagement. Open pedagogy is the practice of engaging with learners as creators of information, rather than simply consumers of it. It is a form of experiential learning in which learners demonstrate understanding through the act of creation. The products of open pedagogy are learner-created and openly licenced so that they may live outside of the classroom in a way that has an impact on the greater community. Open pedagogy is a high-impact practice that empowers learners by providing them an opportunity to engage in information creation through

the use of renewable assignments. Open pedagogy allows for collaboration as well as allowing the differences in privilege and progress that affect learners balance the benefits of sharing and a need for privacy.

12) Micro-credentialing and Competency-based Education: Focus will shift from traditional degrees to skill-based certifications and competency demonstration. New forms of recognition and certification will emerge, acknowledging diverse skills and competencies.
13) Open Badges and Digital Credentialing: Visual representations of skills and achievements will become more prevalent, enabling learners to showcase their expertise and gain stackable e-credentials (Jegede 2024 d&e).
14) MOOCs (Massive Open Online Courses) Evolution: MOOCs will incorporate more interactive and immersive elements, leading to higher completion rates and better learning outcomes (Czerniewicz, Deacon, Glover. & Walji, 2017).
15) More Collaborative and Connected Learning Environments: Open education will foster global connections, enabling learners to interact and learn from each other.
16) The impact of the intersection of the body, mind, and soul in the provision of open education will become an important element to be studied because many of the new applications and new sources of knowledge may create serious trauma in the learner that there will be a lot of stress created in the ecosystem.
17) The future of open education will increasingly see a global movement towards academic credit accumulation, recognition of prior learning, and credit transfer in the educational system. Any institution of higher learning that disregards credit transfer does so at its own peril. A learner will be able to take courses from several institutions, have them transferred to one of the institutions, and have his/her degree or certification awarded by another, depending on where most credits have been accumulated.

Challenges in Open Education

The future of education, especially open education will be as exciting as can be unpredictable, bringing with it several challenges. While

open education offers immense potential, there are also challenges to be addressed (Gaskell and Mills, 2014). These include ensuring the quality and credibility of educational resources, creating inclusive learning environments, and narrowing the digital divide to ensure equal access to technology.

The challenges of open education for the future, as reported in literature, include:

i.) Sustainability: Ensuring the long-term viability and financial sustainability of open education initiatives and resources.

ii.) Quality: Maintaining and ensuring the quality of open educational resources and courses, particularly with the increasing demand for online learning.

iii.) Accessibility: Addressing the digital divide and ensuring that all learners, especially at remote or marginalised locations with limited infrastructure of network and other communications, have access to the necessary technology and internet connectivity to participate in open education.

iv.) Inclusivity: Ensuring that open education is inclusive and accessible for all, including learners with disabilities and those from marginalised diverse cultural backgrounds.

v.) Credibility: Establishing and ensuring the credibility and recognition of open education credentials and certifications.

vi.) Pedagogical innovation: Developing and integrating innovative pedagogies and instructional methods that take advantage of open education resources and technologies.

vii.) Research and evaluation: Conducting research and evaluation to understand the impact and effectiveness of open education and identify areas for improvement.

viii.) Leadership and strategy: Developing leadership and strategy to support and sustain open education initiatives and integrate them into institutional and national policies.

ix.) Technology and infrastructure: Ensuring the necessary technology and infrastructure to support open education, including learning management systems, repositories, and digital platforms.

x.) Intellectual property and licensing: Addressing issues related to intellectual property, licensing, and copyright in open

education, particularly with regards to open educational resources.

How to Deal with the Challenges Facing the Future of Open Education

As noted above, while there are excitements in the reconfiguration of open education to make it more accessible, widely open and transformative, the challenges that would be created must be addressed, for the open education movement to move the educational system forward.

With the creation of transformative areas using various new technologies and applications, the need to devise other means to address the challenges that would be created, would, as alluded to by Albert Einstein, certainly require a higher level of thinking than was used to create the new ways of learning and instruction (see Figure 2).

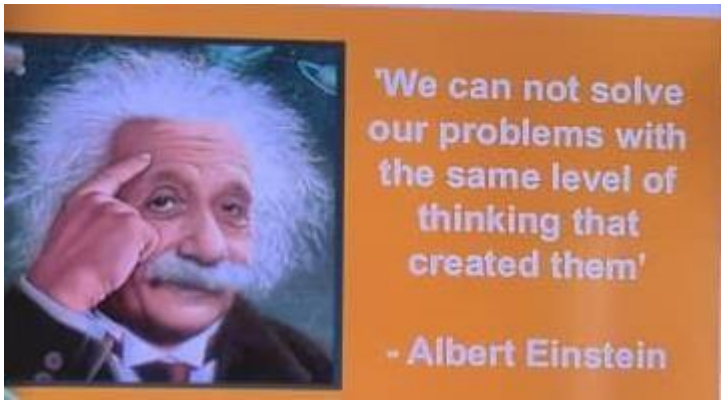

Figure 2: Thinking of solutions to the challenges of Open Education

Source: The Author

It becomes compelling that certain types of thinking which are at variance with modern ways must be addressed. These impediments or obstacles are many, but I will only address six of them as follows:

Obstacle 1: The Traditional Thinking About Education, and the Definition of 'Open Vs 'Openness'

There is the traditional thinking that educational innovation exists within formal educational institutions (e.g., schools, institutes, universities) and not in other formal or informal environments. Moving beyond this thinking presents a niche of opportunity to generate lines of progressive thinking related to the processes of formal and informal learning within networks, considering multiple relationships with educational institutions and other sectors. In order words, developments in open education of the future must be seamless and should flow unhindered among the various sectors and levels within the society.

A sub-set of this obstacle is how ''open'' and ''openness'' are defined, used, and managed. The current thinking about what 'open' means in open education is mainly restricted to teaching and learning (access, OER, MOOCs, social media).

Openness involves a seamless interaction with industry and covers areas such as transparency, integrity, access, participation, democracy, learner and instructors' experiences, type and levels of participation.

The degree of openness should be enlarged to cover the capacity to bring together diverse sectors including educational, social, enterprise, cultural, industry, for collaboration and dissemination. In this landscape, the field of open education is fertile, both for training in educational innovation Stracke (2019) and for promoting innovations within the framework of the open educational movement, with practices of production, use, dissemination, and mobilisation. Here, the open education movement is visualised as a dynamic phenomenon, in constant evolution, that starts from the simplest idea of taking advantage of resources to share a common good, namely, knowledge. However, open education can also mean something more complex: developing educational practices that contribute to the necessary improvements in education, management, and research required by external changes. Open education processes should challenge educators to change their practices fundamentally, to incorporate creativity and innovation. Studies in open education have become

references for the continuous building of bridges for the democratisation of knowledge. The work of the global academic community in open education has led to an awareness of this type of education. Consequently, global recommendations adopted by UNESCO have been issued to encourage capacity building, policy development, inclusive and equitable access, sustainability models, and the promotion of international cooperation (UNESCO, 2019).

The Future of Open Education requires the integration of all that are involved in open education and what openness entails, as mentioned above. There should be s strategic mix of the two with emerging technologies as appropriate.

Obstacle 2: Who Determines Our Future?

Given the free interactions within the new ecosystem, the competition for the various sectors within education and industry, and the laissez-faire manner that things will operation, the question now is who determines the future of open education. Will leadership come from within education or the industry or the emerging technologies?

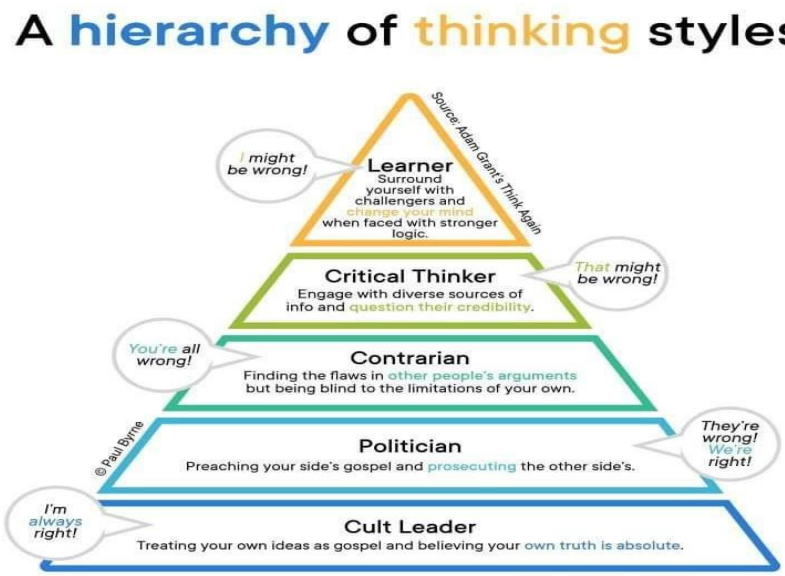

Figure 3: An Indication of the challenges Open Future.
Source: The Author

The seeming confusion will be who dominates - will it be the cult leaders who would normally form the base of the hierarchy of the thinking styles (see Figure 3), or the critical thinkers who are normally seen as the most favoured to lead the education trail? What could emerge is the control of the environment by learners, relegating others to lower levels of the thinking strata. While it would seem acceptable for learners to now take the bull by the horns in their learning situation, what might come clear is that the instructors will no more dominate; they are pushed to the side, just to facilitate learning and not to dictate what is learnt. The new cohort of learners will now decide what, when, and how to learn, because technologies would have made it possible for them to have unfettered access to knowledge as they emerge 'hot-off-the-press', so to say.

Obstacle 3: How to Deal with the Unwanted Aspects of Artificial Intelligence

Artificial intelligence would make life and learning a lot easier, and free, just like the World Wide Web, WhatsApp, Instagram, or Telegram is right now. Every institution and corporate bodies and industry would have developed their own AI culture to be used freely in their daily operations. Educational institutions would use it for all aspects of instruction, learning, and administrative purposes. But the draw-back is what is emerging now, as deep fake technology will become quite pervasive as to make people question its use. The emergence of Deepfake technology in AI is exciting, but has concerns to its applications and implications.

Deepfake technology utilises sophisticated machine learning algorithms to generate highly realistic and convincing audio, images, or videos that appear authentic but manipulated.

It can be used to impersonate, spread misinformation, fabricate evidence, manipulate elections, public figures' reputation, and seriously affect national security.

Imagine its use in future open education environment to generate admissions, examinations results, Tutor-Marked Assignments (TMA),

graduation certificates, fake payment vouchers sent to the bank, promotion letters, meetings that never held, reports of Senate meeting approving examination results, or fake minutes of Governing Council meeting approving financial matters of the university, etc. What is rearing its ugly head is the highest level of unacceptable and uncontrollable chaos, to say the least. Open Education must tackle the problem of deep fake technology before it wreaks havoc in the system.

Obstacle 4: Building Capacity and Hiring of Staff

The traditional way of recruitment in universities is to advertise, interview, give employment, and staff stay till they retire or move elsewhere. In the future open education that is emerging, the current forms of hiring and retaining staff require re-examination. What will be the advantages in the new dispensation for institutions to have an extensive outlay of maintaining hundreds of staff for years, pay gratuity and retirement benefits, when in fact they may not be very useful or expedient. Why not hire staff on contract to do the job for the few months needed, rather than keep staff for years, when they may only be needed for a fraction of that period?

What could emerge is for educational institutions to hire staff for requisite periods, just as we now do with Uber or Air BnB. Educational institutions may no longer have permanent staff, but relate with similar organisations which retain competent academic staff who are ready to be deployed to work for a limited period to get to set up an academic programme or course taught, without bothering with human resources issues, housing, transportation, etc. The emerging issue of remote working is instructive, as made popular by COVID-19.

Obstacle 5: Mind, Body and Spirit Nexus: Technology and Mental health

The issue of mental health at our university campuses is assuming a monumental proportion, if what the prevailing literature tells us is anything to go by. University campuses are fertile grounds promoting individuality and socialising. However, the open education of the future will make things worse, thereby contributing to mental health disorders, low self-esteem, bullying, and suicide. Undergraduates of

the future will have to grapple with the privacy or seclusion which open learning, and especially the use of some of the emerging technologies, cultivate in learners. The difficult balance of interaction using the social media, but yet keeping one's distance and space, can cause a lot of self-doubt and stress. Trying to figure out where they fit while managing academics and sifting their way through peer pressure can bring a lot of doubt and insecurities, leading to depression and anxiety among undergraduates. One university in Hong Kong school system has concerns about the high levels of stress placed on learners, the lack of creativity and critical thinking in the curriculum, and the unequal access to education (see The Chinese University of Hong Kong (CUHK)'s Faculty of Medicine (CU Medicine) announcement on two surveys commissioned by the former Food and Health Bureau of the Hong Kong government (report released on 23 November 2023).

The issues might not be unconnected with the nexus amongst body, mind, and spirit and how they relate with technologies in the modern world.

The open ecosystem of the future will affect education and the 'no-holds barred' approach to life; body, mind, and spirit of individuals; and emerging technologies are taking the world of *homo sapiens*. I see an interesting intersection between our living entities, our biological make up, with the environment of teaching and learning, which keeps changing with the emerging technology. New global citizens might arise, whose network of physiological, neurological, psychological, spiritual existence, and daily exertion might create some enormous trauma (Ehusani, 2024); a plastic life in which the psycho-neuro-spiritual-techno trauma might engulf the life of the next generation. Continuous emergence of mental health issues being witnessed on our campuses today is only the tip of the iceberg of technology-induced or related complications of modern day living.

Obstacle 6: How to Deal with a Malfunctioning AI in a Massive Irreversible Operation.

On Wednesday, 26th June 2024, a city council in South Korea reported that their first administrative officer robot was defunct after throwing itself down some stairs, with local media mourning the country's first robot suicide (see Figure 4). Under a headline that says, *Tragedy strikes as South Korea's pioneer robot officer commits suicide***,** South Korea's Gumi City Council announced the robot was found unresponsive after having apparently fallen down a two-meter (six-and-a-half foot) staircase last week.

It would not be a surprise if many more of such have occurred but gone unreported, if we imagine, for a minute, that AI is being used at a surgical operation in a teaching hospital or in an automated situation like driverless vehicle conveying learners from one campus to another. Suppose it is being used in a MOOC's environment where some irreversible and massive information are being churned out for learners to copiously apply? How can the system avoid or prevent such disasters, more preferably before they happen? Yet, this is conceivable in the emerging climate of future open education that will be almost totally dominated by AI controlled machines.

Tragedy strikes as South Korea's pioneer robot officer commits suicide

Figure 4: An Indication of the breakdown of the future ecosystem

A city council in South Korea said Wednesday (26th June 2024) their first administrative officer robot was defunct after throwing itself down some stairs, with local media mourning the country's first robot suicide.

South Korea's Gumi City Council announced the robot was found unresponsive after having apparently fallen down a two-meter (six-and-a-half foot) staircase last week.

Witnesses saw the robot officer "circling in one spot as if something was there" before the accident occurred, but the exact cause of the fall is still being investigated, a city council official told AFP.

"Pieces have been collected and will be analysed by the company," the official said, adding that the robot had "helped with daily document deliveries, city promotion, and delivered information" to local residents.

"It was officially a part of the city hall, one of us," another official said. "It worked diligently."

South Korea is one of the most enthusiastic users of robots globally.

It has the highest robot density in the world, with one industrial robot for every 10 employees, according to the International Federation of Robotics.

Gumi City Council is currently not planning to adopt a second robot officer at this moment, it told AFP.

Source: https://punchng.com/south-koreas-first-robot-officer-commits-suicide/

The above example is the more reason why we must integrate soft skills acquisition and usage in the future of open education. Soft skills are

non-technical skills that are valuable in a workplace, learning environment, or personal relationships. They complement hard skills (technical skills) and are essential for success in most industries. Some examples of soft skills, as reported in the literature, include:

- Communication skills: Verbal and written communication, presentation, and public speaking.
- Teamwork and collaboration: Ability to work effectively with others, build strong relationships, and contribute to team goals.
- Time management and organisation: Prioritising tasks, managing time, and staying organised.
- Adaptability and flexibility: Ability to adjust to changes, challenges, and new situations.
- Problem-solving and critical thinking: Analysing problems, identifying solutions, and making informed decisions.
- Emotional intelligence and empathy: Understanding and managing one's emotions and those of others.
- Leadership and initiative: Ability to motivate others, take charge, and proactively seek opportunities.
- Interpersonal skills: Building rapport, resolving conflicts, and maintaining positive relationships.
- Continuous learning and self-improvement: Willingness to learn, adapt, and grow professionally and personally.
- Creativity and innovation: Thinking outside the box, generating new ideas, and finding innovative solutions.

Soft skills are essential for building strong relationships, achieving personal and professional growth, and succeeding in an ever-changing work environment.

Conclusion

Given the increasingly complex, fast-paced global learning environment increasingly being dominated by emerging technologies, it is quite difficult to accurately predict what the future will be. According to what is known about the half-life of the knowledge we now have, we are told that in fast-paced fields like technology, engineering, and science, the half-life of knowledge is around 2-5

years. In slower-paced fields like history and literature, the half-life of knowledge is around 10-20 years.

The concept of the "half-life of knowledge" refers to the idea that knowledge has a limited shelf life and becomes outdated or obsolete over time. This means that within these timeframes, a significant portion of what we currently know or retained in our brain will become outdated or replaced by new discoveries and advancements.

While this concept highlights the importance of long-life learning (continuous learning), staying up-to-date with the latest developments, and adapting to new information and technologies are extremely important for active and quality living.

In that kind of knowledge dominated global environment, what kind of educational institutions should we aim at as part of the Future of Open Education?

To have a fulfilled future of open education, our educational institutions, all learning environments which will eventually merge, must have at its central focus the transformation of the ecosystem. Such transformation must aim at self (individual, institutional, values, morals, attitudes), at practice (leadership, infrastructure), at society (vision, mission, people), and the environment (social, ecological, financial, networks).

Our open education of the future must:

- Prepare the learners for the C21st Way of Life;
- Produce effective C21st digitally literate teachers;
- Prepare C21st learners to learn smartly and efficiently;
- Orientate all towards wealth creation, and
- Prepare for a higher level of trauma in our campuses.

The future of open education that we envisage should support the continuation of training processes with more open educational resources so that, from home or everywhere, learners can continue learning on open platforms with programmes and courses taught by teachers/facilitators trained to provide good practices in distance

education and who organise academic networks to generate spaces for construction and containment (Seraphin, et al.2019). All facets of the open education of the future, including but not limited to open pedagogies, open textbook, open science, open scholarship, e-books, open publishing, research, co-creation, innovation, texts, tools, courses, access, data, science, technologies, and practices within the framework of open education require commitment and collaboration. This might not be a tall ask, if the global adaptive learning ecosystem is appropriately and adequately structured.

The open education of the future will profoundly lie in the establishment and networking of open universities that will network with one another and with industry and the larger society. It goes without saying that open universities as we know then today will be completely transformed to make learning and instruction more open and to embrace openness and learner-dictated processes and procedures. Needless to say, that capacity building of facilitators/teachers/learning guides should be at the forefront of the evolution within the emerging learning ecosystems.

Declaration

I declare that in the process of researching for this paper I consulted widely, extensively, and took advantage of the provision of and assistance from a number of AI sites including AI at Meta, NuvaBot.com, Nerd AI, ChatOn AI, and AI Newsletter of Time Higher Education. I gratefully acknowledge that some of the ideas developed in this document originate from there.

References

Bali, M.; Cronin, C.; Jhangiani, R.S. (2020). Framing open educational practices from a social justice perspective. *J. Interact. Media Educ, 10*.

Benlamri, R.; Klett, F.; Wang, M. (2016). Models, technologies, and approaches toward widening the open access to learning and education. *Knowl. Manag. E-Learn. Int. J. 8*, 1–9.

Bibliography/Sources (2009). ""History", University of London External Programme Website". www.londonexternal.ac.uk. Retrieved 27 April 2010.)

Brahim, H.B.; Khribi, M.K.; Jemni, M. (2017). Towards accessible open educational resources: Overview and challenges. In Proceedings of the 6th International Conference on Information and Communication Technology and Accessibility (ICTA), Muscat, Oman, 19–21 December 2017.

Bunker, E.L. (1987). "The History of Distance Education through the Eyes of the International Council for Distance Education," in Michael Grahame Moore, William G. Anderson, eds. Handbook of Distance Education pp 49-66

Clark, J.J. (1906). "The Correspondence School—Its Relation to Technical Education and Some of Its Results," Science, 24#611 pp 327-8, 332, 333.

Cronin, C. (2017). Openness and praxis: Exploring the use of open educational practices in higher education. *Int. Rev. Res. Open Distance Learn. 18*, 15–34.

Cuban, J. (1986). Teachers and Machines: The Classroom Use of Technology Since 1920, pp 11–18 10.

Czerniewicz, L.; Deacon, A.; Glover, M.; Walji, S. (2017). MOOC-making, and Open Educational Practices. *J. Comput. High. Educ*, *29*, 81–97.

Ehusani, G. (2024). Psycho-trauma awareness and the neurophysiology of trauma. Paper presented at the Basic Psycho-spiritual trauma healing skills course by the Pscho-

Spiritual Institute of the Lux Terra Leadership Foundation, Abuja, 24-29 June, 2024.

Ehusani, G. (2024). The place of spirituality in adversity, trauma resilience and trauma healing. Paper presented at the Basic Psycho-spiritual trauma healing skills course by the Pscho-Spiritual Institute of the Lux Terra Leadership Foundation, Abuja, 24-29 June, 2024.

Gaskell, A.; Mills, R. (2014). The quality and reputation of open, distance, and e-learning: What are the challenges? *Open Learn*, *29*, 190–205.

Govindarajan, R.; Dhanavandan, S (2020). Open Access Publishing Model: Preferences, Opportunities, and Challenges—An Opinion Survey Among Teaching Staff in Higher Education Institutions in Tamil Nadu. 2019. Available online: https://digitalcommons.unl.edu/libphilprac/2613 (acces sed on 15 March 2020).

Jegede, O. J. (2024). An Overview of Open and Distance, & e-Learning. Being a Lead Paper Presented at the Stakeholders Workshop on the Draft National Open, Distance & e-Learning Policy in Nigeria, held at the National Universities Commission (NUC) on Tuesday 11- Thursday 13, June, 2024.

Jegede, O. J. (2024). Can Research Catalyse Africa to Attain Agenda 2063 and the SDGs? Being an Invited Keynote Address Delivered at the Second International Conference of the International Research Consortium with the theme: Strengthening and Contextualising Research as Catalyst for Attaining African Union (AU) Agenda 2063 and the SDGs in Teaching and Learning, held on June 11-12, 2024.

Jegede, O. J. (2024). Fundamentals of Open and Distance Learning. An Invited Presentation at the Short Course on Induction to Open and Distance Learning conducted by the Regional Training and Research Institute for Distance and Open Learning (RETRIDOL), National Open University of Nigeria. March 18th-19th April, 2024.

Jegede, O. J. (2024). Overview of the draft National Strategic Plan (2024-2027) for Senior Secondary Education in Nigeria. Being an Invited Keynote Presentation as the Lead Resource Person at Validation and Critique Workshops on the Draft National Minimum Standards and Draft Strategic Plan for Senior Secondary Education in Nigeria held at Barcelona Hotel Limited, 23 Blantyre Crescent, Wuse II, Abuja from 22-25 February, 2024.

Jegede, O. J. (2024). Overview, and Development, of Open and Distance Learning Policy. Being an Invited Presentation at the Training Workshop on ODL Policy Development for Government Officials in West Africa by Regional Training and Research Institute for Distance and Open Learning (RETRIDOL)/Commonwealth of Learning at National Open University of Nigeria, 17 & 18 April 2024

Jegede, O. J. (2024). Research, Knowledge, and Scholarship: The 21st Paradigm Shift. Being an Invited Presentation at the 7th Seminar of the International Research Consortium based @ the Lagos State University held on Sunday, 26th May 2024.

Jegede, O. J. (2024). The Future is Open: How Should Educational Institutions Respond? Being an Invited Panel Presentation at the VIP Forum on "The Future of Open Education" at the International Conference on Open and Innovative Education (ICOIE 2024) held by the Hong Kong Metropolitan University, at Agile Sports Hall, 1/F, Jockey Club Campus, Hong Kong, 3-5 July 2024

Jegede, O.J. (2024). Inclusive Digital Learning Ecosystem in Open, Distance and e-Learning. An Invited Keynote Address at the 2nd Annual Conference of Open Distance and e-Learning Association of Nigeria (ODeLAN) Conference hosted by the Ahmadu Bello University Zaria Distance Learning Centre, from 21st to 24 April 2024,

Kaatrakoski, H.; Littlejohn, A.; Hood, N. (2017). Learning challenges in higher education: An analysis of contradictions within open educational practice. *High. Educ, 74*, 599–615.

LeCounte, J.F.; Johnson, D. (2015). The MOOCs: Characteristics, benefits, and challenges to both industry and higher education. In *Handbook of Research on Innovative Technology Integration in Higher Education*; IGI Global: Hershey, PA, USA, pp. 228–247

Mishra, S. (2017). Open educational resources: Removing barriers from within. *Distance Educ.*, *38*, 369–380.

Nunez, J.L.M.; Caro, E.T.; Gonzalez, J.R.H. (2017). From higher education to open education: Challenges in the transformation of an online traditional course. *IEEE Trans. Educ. 60*, 134–142.

Ramirez-Montoya, M. S. (2020). Challenges for Open Education with Educational Innovation: A Systematic Literature Review. *Sustainability* **2020**, *12*(17), 7053; Special Issue of Opportunities and Challenges for the Future of Open Education), https://doi.org/10.3390/su12177053

Ramírez-Montoya, M.S. (2020). Digital competences and open education in Latin America: Systematic Literature Review. *IEEE-RITA*, 6, 22-34.

Rodríguez, A.I.; González, Y.M. (2020). Scientific production in inclusive education: Progress and challenges [A produção científica na educação inclusiva: Avanços e desafios] [La producción científica en educación inclusiva: Avances y desafíos]. *Rev. Colomb de Educ. 1*, 383–418.

Seraphin, S.B.; Grizzell, J.A.; Kerr-German, A.; Perkins, M.A.; Grzanka, P.R.; Hardin, E.E. (2019). A conceptual framework for non-disposable assignments: Inspiring implementation, innovation, and research. *Psychol. Learn. Teach*, *18*, 84–97.

Stracke, C.M. (2019). Quality Frameworks and Learning Design for Open Education. *Int. Rev. Res. Open Distrib. Learn. 20*, 180–203.

Tlili, A.; Huang, R.; Chang, T.; Nascimbeni, F.; Burgos, D. (2019). Open educational resources and practices in China: A systematic literature review. *Sustainability*, *11*, 4867

UNESCO. (2019). Recommendation on Open Educational Resources (OER). *Legal Instruments*. Available online: http://portal.unesco.org/en/ev.php-URL_ID=49556&URL_DO=DO_TOPIC&URL_SECTION=201.html .

Weiyuan, Z.; Wei, L. (2019). Transformation from RTVUs to Open Universities in China: Current State and Challenges. *Int. Rev. Res. Open Distrib. Learn. 20*, 2–20.

Weller, M.; Jordan, K.; DeVries, I.; Rolfe, V. (2018). Mapping the open education landscape: Citation network analysis of historical open and distance education research. *Open Prax. 10*, 109–126.