Exploring Legal Aspects Related to Emerging Technologies in Tanzanian Distance Education

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ABSTRACT

The emergence of new technologies in the ICT sector and their integration into Tanzanian distance education presents both opportunities and challenges for the educational field. Innovations like Artificial Intelligence, robotics, Mobile learning, e-learning, cloud computing, video-assisted learning, and Digital Content Platforms play a crucial role in improving the teaching and learning process. These technologies have not only transformed various aspects of universities, such as teaching methods, assessment procedures, administration, examination management, financial records, and timetable scheduling but have also expanded educational access, enhanced quality, and reduced costs. This abstract provides an overview of a comprehensive research study focusing on the legal aspects related to the use of emerging technologies in Tanzanian distance education. As distance education becomes increasingly popular as a means to enhance access and quality of education in Tanzania, it is essential to consider the legal dimensions associated with this transformation. While technology brings significant improvements to the education sector, it also introduces legal, security, privacy, and safety challenges that require attention and resolution. From a legal perspective, the technology involved in electronic learning (e-learning) presents specific challenges because many existing legal and policy standards in education are primarily designed for traditional brick-and-mortar classrooms and face-to-face interactions. This research aims to identify and analyze the legal issues surrounding the implementation of emerging technologies in distance education. The study utilizes doctrinal and comparative research methods to examine international legal instruments, policies, and laws from other jurisdictions. The findings indicate that the current policies and legal instruments governing emerging technologies in Tanzania do not adequately address the existing legal gaps.

Keywords: Distance education, emerging technologies, e-learning, ICT, legal aspects

INTRODUCTION

The world's rapid adoption of new technologies has profoundly changed how education is provided. Information and Communication Technologies (ICTs), particularly emerging technologies like Educational Technology, Artificial Intelligence, Robotics, Big Data, cloud computing, video-assisted learning, Digital Content Platforms, Internet of Things (IoT), and more, continue to play a central role in enhancing the methods of teaching and learning. These educational transformations are most evident in the realm of distance education, where ICTs have been harnessed to bridge the gap between students and educational institutions.[1] ICT development has superseded traditional teaching methods, replacing face-to-face classroom interactions with online communication, traditional blackboards or whiteboards with interactive whiteboards, and printed resources with online materials. Universities, colleges, schools, and other educational institutions are harnessing these technologies to facilitate effective and interactive learning processes.

Their adoption is not only broadening access to education but also improving its quality and reducing costs, while simultaneously extending educational opportunities to remote areas through virtual, e-learning, online, and distance learning.[2] The application of technology in distance learning platforms makes students more proactive, as they gain awareness of what information they require, why they need it, and how to access it. With internet access in their environments, students become less reliant on instructors, enabling them to explore a wealth of online information, gather the data they need, and continue to seek further knowledge.[3] The significance of these emerging technologies was remarkably featured in both developed and developing countries during the COVID-19 pandemic. The pandemic reshaped the educational landscape, compelling universities to heavily rely on technology for virtual learning. Various e-learning platforms such as WhatsApp, Zoom, MOODLE, and Google Classroom were developed, and online assessments,

[1] Mbatha, B. (2015). A Paradigm Shift: Adoption of Disruptive Learning Innovations in an ODL Environment: The Case of The University of South Africa, International Review of Research in Open and Distributed Learning Volume 16, Number 3

[2] Suryani, A., ICT in education: its benefits, difficulties, and organizational development issues, jshJurnalSosial Humaniora, Vol 3 No.1, 2010, Pp. [106-123], at Pp106.

[3] Ibid

including Oral Examinations (OREX), were conducted.[4] While emerging technologies offer remarkable opportunities to enhance the teaching and learning process, they also bring forth a host of legal considerations that must be addressed to ensure the ethical and smooth operation of distance education programs. The e-learning environment has introduced moral challenges, such as access to inappropriate content, violations of personal privacy, and susceptibility to issues like sexual predation, pornography, harassment, stalking, scams, and the dissemination of harmful material. Additionally, students sometimes resort to excessive copying and pasting instead of genuine learning, giving rise to ethical concerns like plagiarism.[5] Moreover, from a legal standpoint, the technological landscape and scope associated with electronic learning (e-learning) present specific challenges because many legal and policy standards applied to education are rooted in the traditional brick-and-mortar classroom model and face-to-face interaction.[6] While many writers and government ministries have expressed optimism that AI will streamline teacher responsibilities, others have raised the prospect that AI may eventually render teachers redundant or necessitate a reconfiguration of their roles into classroom orchestrators or technology facilitators, primarily responsible for managing learner behavior and ensuring the proper functioning of technology.[7]

Overview of Emerging Technologies

There is no commonly agreed definition of Emerging Technology (ET). According to Halaweh (2013)[8] in his paper entitled Emerging Technology: What is it? ET is defined as science-based innovations with the potential to create a new industry or transform an existing one. It is a new technology, but it may also refer to the continuing development of existing technology. The term can have slightly different meanings when used in different areas, such

[4] Tauhidah, D et al. (2021). Utilization of e-learning platforms by lecturers during the COVID-19 pandemic in Indonesia, JPBI (Jurnal Pendelikon Biologi Indonesia) Vol. 7, No. 3, November 2021, pp. 198-207

[5]Suryani,op.cit

[6] Ibid

[7] Holmes, W et al. (2022). Artificial Intelligence and Education: A critical view through the lens of human rights, democracy, and the rule of law, Council of Europe

[8] Halaweh, M (2013). Emerging Technology: What is it?, Journal of Technology Management & Innovation, Technol. Manag. Innov. 2013,Volume 8, Issue 3

as media, business, science, or education. It normally refers to technologies that are currently developing, or that are expected to be available within the next five to ten years, and is usually reserved for technologies that are creating or are expected to create significant social or economic effects.[9] The Business Dictionary defines ET as new technologies that is currently developing or will be developed over the next five to ten years, and which will substantially alter the business and social environment. The question of when a technology can be labeled as an emerging technology and when it can be labeled as a traditional one has invited several discussions in the academic arena. For example, Radio Frequency Identification (RFID) is not considered emerging in developed countries, whereas it is described as an ET in other poor and developing countries in the world where the Internet and communication technology infrastructures are still poor.[10] Geographic information systems are considered established tools in the real estate and agriculture industries but they are still considered to be emerging in the teaching of geography. The Web was invented in 1990–1991 so it is not labeled as an ET.

However, various uses of the Web in different applications can make it an ET. This has been recently labeled Web 2.0 and Web 3.0, or the second and third generations of the Web. For example, Twitter, Facebook, and YouTube are ETs for journalists and the media. They have caused revolutions in Arabic countries, demonstrating how ET can change the social environment as defined by the Business Dictionary.[11] In this aspect, a technology can be a standard expectation in the commercial or business world, while still being considered as ET in the education sector. The Business Dictionary (2018) definition of ET specifies that technology is considered emerging for the first 5 to 10 years of its lifecycle, whereas Stahl (2011) states that technology is emerging for the first 10 to 15 years. Although the discussion might be very long in this area, currently emerging technologies include a variety of technologies such as educational technology, information technology, nanotechnology, biotechnology, robotics, artificial intelligence, Big data, cloud computing, Internet of Things (IoT), Blockchain, social networking-

[9]Montoro, M.A.etal (2019). Emerging technologies. Analysis and current perspectives Digital Education Review - Number 35.
[10]Halaweh,op.cit
[11] Ibid

books etc. When ET is defined in the context of education it characterizes the technologies that have the potential to change the current state of affairs in education.[12]

Emerging Technologies in Education

The utilization of digital technologies in education and training claims a rich and extensive history. An early instance of this can be traced back to the mid-1920s, when a teaching machine was first employed to automate repetitive drills and exercises.[13] The ongoing advancements in Information and Communication Technologies have greatly accelerated the integration of these technologies into the field of education. Schools, colleges, and universities are increasingly embracing novel forms of digital technology to enhance the teaching and learning processes. While the incorporation of digital technology was initially seen as imperative for Open and Distance Learning Institutions, the COVID-19 pandemic reshaped this perception. The education system swiftly transitioned to distance learning and harnessed emerging technologies to counteract the pandemic's disruptions.[14] Currently, Open and Distance Education within the realm of Electronic Learning (e-learning) encompasses a triad of instructional modes: synchronous, asynchronous, and hybrid learning environments.

Asynchronous distance learning involves interactions between educators and learners occurring at distinct times, encompassing activities like following written instructions, listening to recorded lectures, or viewing pre-recorded visual tutorials. Conversely, synchronous learning necessitates real-time interactions, such as attending live online lectures. The choice of these methods in teaching is contingent on the specific knowledge objectives of the learner.[15]In contemporary education, a blend of synchronous and asynchronous teaching approaches has gained prominence. Online classes are conducted, affording students direct communication with their instructors

[12]Cukurova,M& Luckin,R (2018)Measuring the Impact of Emerging Technologies in Education:A Pragmatic Approach

[13]Cukurova,M& Luckin,R (2018)Measuring the Impact of Emerging Technologies in Education:A Pragmatic Approach

[14] Riina, V et.al.;(2020). Emerging Technologies and the teaching profession Ethical and pedagogical considerations based on near-future scenarios

[15] Ibid

through communication tools. However, learners also receive supplementary instructional materials to facilitate homework assignments or to further their understanding during their leisure time. These supplementary resources encompass various formats; including text documents, digital books, presentations, videos, or tasks to be completed using specialized software.[16]Synchronous mode instills a sense of community through collaborative learning. It resembles the traditional classroom, except that all participants access it remotely via the Internet. It provides real-time interaction, which can be collaborative incorporating e-tivities such as an instructor's lecture with a facility of questions-answer session. However, a synchronous session requires simultaneous student-teacher presence. Lessons can be recorded and added to an e-library. Using the archived e-library, students can access and replay the teacher's lectures as many times as necessary to master the material. Direct interaction with teachers and students in real-time is very much like a traditional face-to-face classroom, rather better, as the distance is no more a barrier, and by connectivity via the Internet no time is wasted in traveling.[17]

Some of the challenges of synchronous education can be the need for the availability of students at a given time and the necessary availability of a good bandwidth Internet. Participants can feel frustrated and thwarted due to technical problems. In addition, a carefully devised instructional design is required as pedagogy is more important than technologically facilitated media. For example, Murphy et al. (2011) consider synchronous mode more teacher-oriented. Special e-tivities need to be created to broaden the scope of synchronous communication from a lecture or teacher-student discussion only.[18] An asynchronous mode of learning/teaching has been the most prevalent form of online teaching so far because of its flexible mode of operation. Asynchronous environments provide students with readily available material in the form of audio/video lectures, handouts, articles and power point presentations. The materials are accessible anytime anywhere via Learning Management System (LMS) or other channels of the sort. LMS is a

[16] Ibid
[17] Perveen, A., Synchronous and Asynchronous E-Language Learning: A Case Study of Virtual University of Pakistan, Open Praxis, vol. 8 issue 1, pp. 21–39 (ISSN 2304-070X), 2016, at Pp.22.
[18] Ibid

set of tools that houses course content and provides a framework for communication between students and teachers like a classroom. Other terms sometimes used instead of LMS are Course Management System (CMS) and Virtual Learning Environment (VLE).[19] Asynchronous E-learning makes it possible for learners to log on to an E-learning environment at any time and download documents or send messages to tutors or peers. Students may spend more time refining their contributions, which are generally considered more thoughtful compared to synchronous communication. On the other hand, asynchronous environments are not time bound and students can work on e-tivities on their own pace.[20] These technologies have brought about drastic changes in the facilitation of education and revolutionized the way teaching and learning are conducted.[21]

ICTs enable open-source learning, as opposed to traditional manual learning methods, thereby fostering a culture of exploration and idea acquisition among students.[22] These innovative tools also facilitate active learning and promote collaborative, creative, integrative, and evaluative elements within the education sector. However, as internet access becomes ubiquitous and ingrained in daily life, users often overlook crucial aspects of security, ethics, and legal compliance.[23]This paper seeks to investigate the current legal framework governing the intersection of education and technology in Tanzania. It aims to assess its compatibility with the rapidly evolving landscape of distance education technologies. Furthermore, it intends to pinpoint potential legal challenges and gaps within the regulatory framework that may impede the smooth integration of these technologies. In addition, the paper endeavors to explore international best practices and legal models from analogous jurisdictions. This comparative analysis aims to provide Tanzanian policymakers and stakeholders with valuable insights. The ultimate goal is to

[19] Ibid
[20] Perveen, op.cit.
[21] Mbatha, B (2015). A Paradigm Shift: Adoption of Disruptive Learning Innovations in an ODL Environment: The of the University of South Africa, International Review of Research in Open and Distributed Learning Volume 16, Number 3.
[22] Ibid
[23] Kiliçkaya, F & krajka, J. (2015). Ethical Issues of ICT Use by Teacher Trainers: Use of E-books in Academic Settings, Ankara University, Journal of Faculty of Educational Sciences, Vol: 48, No: 2, 83-102

formulate recommendations and policy considerations that address legal concerns and promote the responsible and sustainable utilization of emerging technologies in Tanzanian distance education.

Regulatory Framework for Distance Education in Tanzania

Despite many benefits gained from emerging technologies in the education sector, there are also issues and challenges when aiming to make the teaching-learning process successful. To effectively absorb emerging technologies in the education sector, it is crucial to have a comprehensive legal framework in place. Tanzania's Universities Act, 2005 under section 4(1) establishes the Tanzania Commission for Universities (TCU) as the regulatory body responsible for both public and private universities. The TCU is a legal entity with perpetual succession and a common seal and has been vested with all powers that a corporate body may lawfully do.[24]

Although the TCU is a regulatory body for Universities in Tanzania it does not specifically address the unique challenges and opportunities posed by emerging technologies in distance education. To regulate the growth of emerging Technologies in the education industry, TCU issued the Guidelines for Online and Blended Delivery Modes of Courses for University Institutions in Tanzania in the year 2022. The guidelines aimed to support teaching and learning through online and blended modes in university institutions in the country.[25] The guidelines are aiming to assist universities to broaden their scope for providing quality education in situations where students cannot visit the campuses for face-to-face learning. Nevertheless, the guidelines are not comprehensive enough to tackle specific challenges that have been brought by digital technologies. Proper preparation and implementation of E-learning services need to be accompanied with clear policies and legal instruments to harmonize the platform. Relevant laws and best practice that should be adhered to should be documented to protect both trainers and users. Therefore, there is a need for the development of specific regulations and guidelines that can govern online education, ethical issues, copyright issues and Jurisdictional challenges.

Data Protection and Privacy

[24] Section 4(2)
[25] TCU 2022

The growing reliance on digital platforms and online tools for educational purposes has raised significant concerns regarding the privacy and security of student data. Educational institutions, particularly universities, are tasked with the responsibility of collecting and safeguarding personal information from students, faculty, and staff to ensure data security. Security in the realm of online learning encompasses the protection of resources against both malicious and unintentional misuse.[26] Similar to other web-based systems, e-learning platforms are vulnerable to a range of computer security threats. The inherent insecurity of the internet, which serves as the foundation for these e systems, poses serious security risks. These risks include software attacks such as worms, viruses, macros, and denial of service attacks, as well as espionage, theft, hardware failures, and breaches of intellectual property rights such as copyright infringement and piracy.[27]

The advent of online education has resulted in a substantial uptick in cyber-attacks. In 2020, the education sector experienced significant financial losses amounting to $3.90 million due to data breaches, as reported by IBM and the Ponemon Institute, a renowned institution specializing in cyber security research.[28]The e-learning platform deals with the collection, processing and storage of personal information which are shared between teachers and teachers and teachers and students. In the cause of this interaction, an intruder can change the authentic learning content, question papers, mark sheets, certificates, and results which are communicated between the parties. Therefore, addressing privacy and security issues is necessary and all necessary steps should be taken to make sure the security of the information of e-learning systems is secured.[29] Security is crucial in this platform because knowledge is important and has become a key to personal success.[30] Amongst security issues in e-learning are protection against manipulations (i.e. from

[26] Smart Learning Institute of Beijing Normal University (SLIBNU) (2020). Personal Data and Privacy Protection in Online Learning: Guidance for Students, Teachers and Parents

[27] Sakiba, N. (2017). Security challenges for e-learning ecosystems, Master in Information systems, Norwegian University of Science and Technology

[28] Arina, A (2021). Network security threats to higher education institutions, Conference Paper in Central and Eastern European eDem and eGov.

[29] Ibid

[30] Adetoba, B.T et al. (2016). E-learning security issues and challenges: A review, Journal of Scientific Research and Studies Vol. 3(5), pp. 96-100

either student or insider), user authentication, and confidentiality. However, as e-learning functionality is expanding, information must be actively protected to avoid the loss of confidentiality, availability, and integrity. The safeguarding of information is of utmost importance. Therefore, it is imperative that sensitive data be limited to specific, well-defined groups. Examples of such restricted access include educational materials for specific groups, e-results for designated individuals, and the protection of intellectual property through copyright measures.[31] Malicious hackers have the potential to victimize individuals by employing harmful code to pilfer, manipulate, or eradicate data.[32] These attackers can embed concealed code within advertisements and distribute them on online social networks. Notably, in June 2020, Microsoft Security Intelligence revealed that 61% of the 7.7 million malware attacks recorded in the preceding 30 days were linked to the education sector, surpassing all other industry sectors in terms of frequency.[33] The Cybercrime Act of 2015 established Tanzania's legal framework, which aims to address security issues by criminalizing a variety of activities.

Part II of this Act specifically prohibits actions such as unauthorized access to computer systems, unauthorized interception within computer systems, unlawful presence within computer systems, unauthorized data interference in computer systems, data espionage, unauthorized system interference, illegal devices, forgery related to computers, and computer-related fraud. In addition to the Cybercrime Act, the Personal Data Protection Act (Act No.11 of 2022) has been enacted to bridge existing gaps in data protection. This legislation sets out principles for safeguarding personal data and sets minimum standards for the collection and processing of such data. It also establishes the Personal Data Protection Commission, tasked with enhancing the protection of personal data processed by both public and private entities. While these principal laws have been enacted to provide protection, it is essential for universities to establish internal procedures and policies to foster a culture of information and communication technology (ICT) security within their organizations. It is worth noting that neither the TCU Guidelines for

[31] Ibid
[32] Ibid
[33] Arina, A (2021). Network security threats to higher education institutions, Conference Paper in Central and Eastern European eDem and eGov.

Online and Blended Delivery Modes of Courses for University Institutions in Tanzania (2022) nor the Open University of Tanzania ICT Policy (2019) currently incorporate provisions for data protection and access control procedures. Given the increasing shift of universities towards online platforms, it is imperative that policies and regulations addressing access control procedures are put in place to ensure the security and integrity of data. Access control, in this context, refers to restricting entry into information systems solely to authorized individuals, thereby safeguarding the confidentiality, integrity, and availability of these systems.[34]Access to University information assets must be authorized and managed securely in compliance with appropriate industry practice and with applicable legal and regulatory requirements. Access controls are designed to minimize potential exposure to the University resulting from unauthorized use of resources and to preserve and protect the confidentiality, integrity and availability of the University networks, systems and applications.

Ethical Policies

The technological development has made it possible for university students to do assignments, send files, and access necessary academic information and other services. Despite the benefits of using technology for students, it has also increased the chances of falling into unethical behaviours. As the famous scientist, Stephen Hawking pointed out weighing these risks is vital for the future of humanity.[35]he e-learning environment has intensified the problems of cheating, plagiarism, computer abuses, computer crimes, theft of data, equipment malfunctions, destruction from viruses, and helping another person obtain an unfair academic advantage..[36] An academic community flourishes when its members are committed to academic integrity, when students and faculty seek knowledge honestly, fairly, with mutual respect and trust, and accept responsibility for their actions and the consequences of those

[34]Oguk, C.O etal.; (2020). Information Systems Security: A Survey Of Access Control Measures In Universities In Kenya, International Journal of Creative Research Thoughts (IJCRT), Volume 8, Issue 9

[35] Almseidein, T.A & Mahasneh, O.M.K (2020). Awareness of Ethical Issues when using an e-Learning System, (IJACSA) International Journal of Advanced Computer Science and Applications,Vol. 11, No. 1,

[36] Akgun, S &Greenhow,C (2022). Artificial intelligence in education: Addressing ethical challenges in K-12 settings, AI and Ethics (2022) 2:431–440

actions. Without academic integrity, there can be no trust or reliance on the effectiveness, accuracy, or value of a university's teaching, learning, research, or public service activities.[37] In 2022, the Tanzania Commission for Universities (TCU) released guidelines for the implementation of online and blended course delivery modes for university institutions in Tanzania. Within these guidelines, Section 6 outlines specific requirements for universities offering online courses. It stipulated that online assessments must meet high-quality standards. Furthermore, the guidelines mandated the use of proctoring software during summative evaluations to ensure the integrity of examinations. Whether universities have successfully implemented these measures or not, these directives have also introduced potential challenges related to online formative assessments.

Academic dishonesty is a growing concern amongst students for better grades. Universities are obliged to put in place strong policies that will regulate online assessment procedures in both formative and summative evaluation. Dehn, in his paper, Is Technology Contributing to Academic Dishonesty? Has explained that as we are increasingly using more sophisticated technologies as an integral part of our teaching activities, and as students become more competent in using them, opportunities for academic dishonesty are also increasing. Maintaining academic, integrity is important for any educational process, whether face-to-face or online.[38] Compared with traditional face-to-face education, online learning presents some special challenges. Since staff cannot directly observe the students, there is a perception that it is easier to cheat in an online course, by consulting extra information online, sharing documents or discussing assessments with other students.[39] The Open University of Tanzania, the oldest open and distance learning institution in the country, has made efforts to tackle this issue through its 2019 Information and Communication Technology Policy. As part of this initiative, the university has acquired plagiarism detection software to scrutinize student assignments. Nevertheless, the policy

[37] Benson, L, etal. Developing a university-wide academic integrity E-learning tutorial: a Canadian case, International Journal for Education Integrity, 2019.
[38] Dehn, R.W, (2003). Technology Contributing to Academic Dishonesty? Journal of Physician Assistant Education, 2003
[39] Ibid

acknowledges that this software is primarily available to a designated group, notably postgraduate students. This existing gap leaves room for dishonest students to engage in plagiarism and exploit the work of their peers. Another form of potential academic misconduct in the realm of online learning is identity misrepresentation. This misconduct may involve a student hiring someone else to complete academic tasks on their behalf to gain academic credit.[40] The spectrum of identity misrepresentation can encompass anything from contracting someone to write a paper or take an exam to engaging another person to complete an entire academic degree program. Instances of this form of academic dishonesty can manifest in various ways, including sharing another individual's work, procuring term papers or exam questions in advance, or remunerating someone else to perform academic tasks in their stead. As universities expand their reach and incorporate online assessments into both formative and summative evaluations, it is imperative that they confront these technological challenges by implementing robust and comprehensive policies.[41]

Inclusive Policies

To ensure that emerging technologies in distance education benefit all Tanzanians, it is essential to adopt inclusive policies in education. Inclusive education is an approach which transforms the education system, including its structure, policies, practices and human resources, to accommodate all learners in the mainstream education by addressing and responding to learners' diverse needs.[42] It involves addressing issues of accessibility for individuals with disabilities and encouraging digital literacy among underserved populations. To achieve this, legal provisions should be in place to enforce these policies and ensure equal access to educational resources and opportunities. In education this diversity should be used as a constructive force in building societies. Therefore, education policies must be sufficiently diversified and so designed as not to become another cause of social exclusion. The essence of Inclusive Education centres on the fundamental human right to access education, as articulated in the Universal Declaration of Human Rights from 1949, which acknowledges the intrinsic diversity

[40] Dehn op cit
[41] Ibid
[42] The National Strategy for Inclusive Education 2018-2021,pp.12

within humanity. Although Tanzania has established a National Strategy for Inclusive Education for the years 2018-2021, it primarily emphasizes traditional education rather than e-learning and predominantly targets Primary and secondary education. Emerging technologies have proven highly valuable in advancing educational delivery within higher learning institutions, with many universities and schools utilizing the internet to provide students with learning opportunities from the comfort of their homes or remote locations.

While technology in education brings significant advantages, it also encroaches upon the right to education. Despite the effectiveness of e-learning platforms in enhancing and streamlining the educational process, they have also exacerbated the digital divide. The digital divide has generally been defined as the gap in access to technology by socioeconomic status, race, and/or gender. The digital divide refers to the gap between people who have adequate access to ICT and those who have 'zero' or poor access to ICT.[43] Digital divide, when related to e-learning and education, can be categorized with students financially unable to afford technology and broadband access, others lacking the skills to engage with learning technology, being culturally less able to benefit from technological enrichment, and even have gender and generational differences.[44]While technology can bring advantages in the form of access to a computer or electronic device, when students lack the financial means to obtain access, they fall behind. According to the Tanzania Communication Regulatory Authority (TCRA) report of December 2019, Tanzania had 25.7 million internet users. The average cost of internet use is still high, the cost of 75 MBs which could hardly be enough per child per day, was Tsh.1, 000 which is Tsh.30, 000 per month. This cost can be afforded by very few families in the country. Although the Tanzanian government has recognized the significance of ICT in the contribution and achievement of national development goals and in transforming Tanzania into a knowledge-based society, the policy and legal instruments have not been comprehensive enough to tackle the problem. The Government of Tanzania has made some

[43] Soomro, K.A et al (2020). Digital divide among higher education faculty, International Journal of Educational Technology in Higher Education, pp.17:21

[44] Abu-Shanab, E (2012). The Digital Divide and Its Influence on Public Education Diffusion, International Journal of Technology Diffusion, 3(4), PP.36-47

efforts to ensure that communication as a universal right is accessible to its entire population. The Universal Communications Service Access Fund (UCSAF) was established under the Universal Communications Service Access Act; Cap 422 which was assented to by the President of the United Republic of Tanzania in January 2007. Although the fund is aimed at reducing the digital divide, its achievement is not well recognized. The discrepancies in the availability of educational internet services constitute a breach of the fundamental right to education. The right to education is acknowledged in various international agreements. For instance, Article 26 of the Universal Declaration of Human Rights, Article 13 of the International Covenant on Economic, Social and Cultural Rights (ICESCR), and Article 28 of the Convention on the Rights of the Child (CRC) enshrine similar educational rights. Moreover, the Convention against Discrimination in Education, established in 1960, instructs governments to establish and implement national policies aimed at promoting educational equality. In acknowledgment and safeguarding of Internet Rights, Article 1 of the African declaration affirms that:

> *The fundamental rights of every individual enshrined in the Universal Declaration of Human Rights of the United Nations, the Charter of Fundamental Rights of the European Union, national constitutions, and other relevant international declarations shall be protected on the Internet.*

The Tanzanian laws, including the supreme legislation, have recognized the right to education as a fundamental goal and guiding principle of the government's policy. Article 11(2) of the constitution of the United Republic of Tanzania guarantees this right to all citizens up to the highest level according to their merits and ability.The weakness of this provision is that it is not a basic right. Being just a constitutional right falling outside the provisions of fundamental rights jeopardizes its enforceability under the basic rights and duties enforcement Act (Act no. 33 of 1994). In many legal systems, including Tanzania, there is a distinction between fundamental rights and other constitutional rights. Fundamental rights are typically considered more enforceable and justiciable, meaning that individuals can directly approach the courts for their protection and enforcement. On the other hand, constitutional rights that do not fall under the category of fundamental

rights may not have the same level of enforceability. The fact that the right to education is not categorized as a fundamental right in the Tanzanian Constitution means that it may not be as easily enforceable through the same mechanisms as fundamental rights.

Intellectual Property Issue

Utilising digital resources, encompassing online course materials and multimedia content, brings forth significant intellectual property considerations. Within the realm of remote education, educators frequently generate unique content, and educational institutions make substantial investments in crafting online courses. It is imperative to establish precise definitions of legal ownership and safeguards for these intellectual assets.[45] Therefore, Tanzania ought to strategize the establishment of comprehensive guidelines pertaining to intellectual property rights in the realm of e-learning. These guidelines should clarify the rights and obligations of educators, institutions, and students, addressing crucial matters such as copyright, fair use, and the licensing of educational materials. Copyright relates to literary and artistic creations, such as books, music, paintings and sculptures, films and technology-based works (such as computer programs and electronic databases). In certain languages, copyright is referred to as authors' rights.[46] The Copyright and Neighboring Rights Act is a principal legislation that guarantees copyright protection in Tanzania. It protects copyright and neighboring rights in literary, artistic works, and folklore. Section 4 of The Copyright and Neighboring Rights Act (CNRA), 1999, defines the term copyright as the sole legal right to print, publish, perform, film or record a literary or artistic or musical work. Copyright protects two types of rights. Economic rights which allow right owners to derive financial reward from the use of their works by others and moral rights that allow authors and creators to take certain actions to preserve and protect their link with their work.[47] It is an exclusive right that is afforded by law to an author who can be a writer, composer, or designer, to print, publish and sell copies of her original work for a certain term of years. The right of copyright owners to prevent others from making copies of their works without permission is the

[45]Renner, J (2015). Intellectual Property Rights in E-learning, Article in eLearn, East Tennessee State University

[46] WIPO, (2016). Understanding Copyright and Related Rights

[47] Ibid

most basic right protected by copyright legislation. The right to control the act of reproduction be it the reproduction of books by a publisher or the manufacture by a record producer of compact discs containing recorded performances of musical works is the legal basis for many forms of exploitation of protected works.[48] Although the law has tried to offer such protection, the emergence of internet and the increased use of this technology has intensified the possibilities of copyright infringement.

As a growing number of digitized and eLearning courses increase and are offered on a global scale, eLearning practitioners have expressed legitimate discussions and concerns about the legal implications of their work and products. For E-learning practitioners for example, the legal lines of what is private content material and what is public content that can be transferrable from one organization or institution to another have become blurry and sometimes misunderstood.[49]The copyright owner's rights can be exploited by other people without their permission. Generally, copyright infringement over the internet has posed a threat to creative works all over the world. Through the internet, the work of authors can be displayed in different jurisdictions and it is very difficult to detect. In Tanzania specifically, the law governing copyright protection seems to be unable to protect the unauthorized distribution and use over the internet due to the fact that it contains provisions with much focus on copyright protection on conventional world.[50]Another serious challenge that is under the attention of this article is copyright ownership of e-learning and teaching materials. In the area of academics, as universities are now investing in technology-enabled learning, existing laws on copyright are now considered outdated or inadequate to address existing challenges. For academics working in Higher Education Institutions, there is an equally pressing consideration, namely, who owns the rights to any e-learning materials that they produce? This is particularly pertinent to the development of the global Open Educational Resources (OER) movement and Massive Open Online Course (MOOC) platforms which increase the

[48] WIPO, (2016). Understanding Copyright and Related Rights,pp.11

[49] Renner, J (2015). Intellectual Property Rights in E-learning, Article in eLearn, East Tennessee State University

[50] Nolasco, G. (2016). The Challenges of ICT Development with Regards to Copyright Protection in Tanzania, International Journal of Engineering Research & Technology (IJERT), Vol. 5 Issue 06,PP.

capacity for maximum re-use of e-learning materials whilst at the same time providing income-generating potential for the rights-holder(s).[51]In considering the question of ownership of online educational materials, faculty and their hiring institutions sometimes have different perspectives on who should own intellectual property rights over faculty created materials.

Although some instructors individually put considerable time and effort in the creation of instructional or educational materials, because they are supported by their employers with significant amounts of resources in producing and maintaining these materials and paid to teach a course using anything they need to create, an institution may feel that they should possess ownership over resources created by their employees.[52] Different models exist regarding faculty creation of on-line course materials, and the appropriate resolution of the authorship and ownership issues can differ depending on which model is at issue. For example, when a faculty member prepares an on-line course completely independently, and then places it on the university server, there is far less of a legitimate ownership claim by the university than if the university asks the faculty member to create the course.[53] The Open University of Tanzania is among Tanzania's distance learning institutions and established the Intellectual Property Rights Policy in 2018. However, it is noteworthy that this policy does not extend to cover course materials. Consequently, the question of ownership regarding e-learning materials remains unresolved.

Conclusions

This paper has addressed legal issues associated with the integration of emerging technologies in Tanzanian distance education. The integration of emerging technologies into Tanzanian distance education presents a transformative potential that extends beyond enhancing access and quality of education. The innovative technologies discussed in this article, such as Artificial Intelligence, robotics, Mobile Learning, e-learning, cloud

[51] Gadd, E &Weedon, R. (2017). Copyright ownership of e-learning and teaching materials: Policy approaches taken by UK universities, duc Inf Technol (2017) 22: 2 –3 03 31

[52] De Gagne, J (2010). Ethical and Legal Issues in Online Education, Journal of eLearning and Online Teaching, Volume: 1 • Issue: 7

[53]Kwall, R (2002). Copyright Issues in Online Courses: Ownership, Authorship and Conflict, 18 Santa Clara High Tech. L.J. 1 (2001). Available at: http:// digital commons.law.scu.edu/chtlj/vol18/iss1/1

computing, video-assisted learning, and Digital Content Platforms, have already demonstrated their capacity to revolutionise various facets of the educational landscape. However, as the popularity of distance education grows, it becomes imperative to scrutinize and address the legal dimensions associated with this technological transformation. While these technologies bring about substantial improvements, they also introduce a host of legal challenges pertaining to security, privacy, and safety. Notably, the existing legal and policy standards in education, formulated predominantly for traditional classrooms, fall short in effectively regulating the dynamic landscape of electronic learning.

The findings of this study highlight the inadequacy of current policies and legal instruments in Tanzania to address the legal gaps posed by emerging technologies in distance education. It has been revealed that Students have various methods at their disposal to engage in dishonest practices, both in synchronous and asynchronous online environments. Universities are thus tasked with the responsibility of implementing robust measures to curb such academically dishonest behaviour. Neglecting security aspects in e-learning poses a critical challenge, as it jeopardises the privacy of both students and staff, as well as the overall credibility of online learning. Security components such as availability, integrity, and confidentiality should be accorded greater attention to preempt security breaches before they escalate. Consequently, universities are urged to establish comprehensive regulatory frameworks, offer clear guidance on intellectual property, enforce data protection measures, and adopt inclusive policies. These actions are essential to ensure that distance education in Tanzania fully harnesses the advantages of technology while adhering to ethical and legal standards. The issue of copyright ownership for teaching materials, whether internal or related to e-learning, remains intricate and contentious. However, given the growing prominence of e-learning, it is imperative that these matters are resolved and clarified through universities' copyright policies. As the educational landscape in Tanzania continues to expand, collaboration among policymakers, educational institutions, and stakeholders is vital to navigating the intricate legal terrain presented by emerging technologies in distance education.

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