



# The potential role of e-learning in expansion of higher education institutions in Tanzania

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## Abstract

Expansion and evolution of high education institutions (HEIs) in Tanzania is a general concern of many educational stakeholders such as the government, students, practitioners, and management. Rapid expansion to increase the enrollment of students into HEIs is often accompanied by the compromised quality of education and financial constraints. Based on evidence from an extensive literature review, this paper aims to highlight the potential role that online education (e-learning) plays in overcoming these challenges. E-learning expands learning spaces, ensures quality, and addresses financial limitations. Based on the numerous opportunities promised by Information Technology and Communication (ICT), these reflections are used to inform and recommend best practices for e-learning in the context of higher education in Tanzania. Particularly, the recommendations will touch on vision and strategy or e-learning, effective marketing, training, setting technical specifications, communication tools, and quality assurance. Conversely, attention is further given to potential pitfalls of e-learning for consideration when implementing e-learning. Essentially, this paper advocates for the adoption of E-learning as it would not only be beneficial for the entire sector but also an efficient enabler of realizing the country's vision for development by 2025. It is hoped that this paper will stimulate timely discussion on the importance of e-learning, in creating a conducive environment for effective expansion of high education institutions in Tanzania.

**Keywords** Capacity constraints · Higher education institutions · Education access · Education equity · Education quality · E-learning · Tanzania

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## Introduction

Over the past decade, higher education institutions (HEIs) in Tanzania have increasingly been called upon to expand and evolve, to meet various stakeholders' expectations. On the one hand, the government is tasking HEIs, as engines of capacity building, to close several skills gaps and increase the quantity and quality of ready-made experts for Tanzania's Development Vision 2025 (Domasa 2016). On the other hand, socioeconomic interests of a diversified student body, ranging from traditional to unconventional students (i.e., females and adults), are probing HEIs to become more flexible and responsive to the needs of diverse student groups such as those needing to balance family, work, and studies (Memba and Feng 2016; Czerniewicz and Brown 2009). Moreover, the public demand for higher education has soared, fuelled by growing upper secondary completion rates, social mobility expectations, as well as urbanization processes (OECD 2012). In Tanzania, free education at the primary school level has seen an increase in the participation of secondary education that has contributed to pressure on upper secondary graduates to seek opportunities to pursue higher education (UNESCO 2009). Currently, there are thirty-four (34) full-fledged Universities, fifteen (15) university colleges, and eleven (11) university campuses, centers, and institutes (The Tanzania Commission for Universities 2019). Between 2012/2013 and 2016/2017 academic years, the number of students admitted into various degree and non-degree programs in university institutions increased by about 36% (from 38,610 students admitted during the 2012/2013 academic year to 52,467 students admitted during the 2016/2017 academic year). HEIs are finding themselves in positions compelled to rapidly expand to accommodate more students and evolve with flexible programs, at the expense of existing overstretched resources.

Accordingly, literature abounds highlighting the various challenges associated with HEI rapid expansion, including effects on learning performance, quality of teaching, general standards, access, governance, human capital, and financial and public funding (i.e., Schendel and McCowan 2016; Perraton 2007; Saint et al. 2003; Daniel 1996; Green 1994). Regardless of the mounting obstacles, higher education institutions must inevitably expand and must do so equitably, at the uncompromised quality (Schendel and McCowan 2016). Therefore, the increase in the number of students entering high education, coupled with the unmatched ratio of qualified teachers, and the mounting demand for accountability (i.e., Adam 2003), is necessitating academic institutions to seek alternative strategies for sustainable expansion and evolution.

One efficient way to achieve HEI expansion is through the use of ICTs such as online education (e-learning). Online learning represents an area of the enormous potential for higher education struggling to meet the needs of growing and changing student demography (i.e., gender and age) (UNESCO 2009). E-learning effectively addresses capacity constraints by expanding classroom walls, overcoming faculty shortage, and tackling infrastructure limitations as well as financial difficulties. Learning can take place anywhere and anytime (i.e., Author 2013). Moreover, e-learning offers flexible provisions tailored to diversity needs, overcoming

traditional distinctions between full- and part-time study, and helps respond rapidly to changing social and economic needs. Online learning is a viable means to the attainment of the Tanzania vision 2025.

While evidence points to the existence of some e-learning activities at the higher education level in Tanzania (i.e., The Open University of Tanzania), online education is experiencing a very slow uptake in the high education sector in general. This suggests the need for more research, strategic alignment outlining best e-learning practices tailored for the local Tanzanian environment. Therefore, the current research is an integrative review of empirical evidence, of the role of e-learning in HEI to overcome issues of access, quality, and financial constraints from an educational managerial point of view.

This article starts with familiarizing the reader with a brief overview of the challenges of HEI rapid expansion. The succeeding section discusses the ICT policy in Tanzania and how e-learning as an ICT can be used to overcome management challenges. The arguments lead to recommendations for best practice and future research. It is hoped that this paper will stimulate timely discussion of formulating strategies and policies conducive for effective expansion and capacity building in high education in Tanzania.

## Background and literature review

### The challenge of access and equity

Literature abounds highlighting different barriers that inhibit individuals from accessing education (i.e., McCowan 2016; Author 2014; Tanye 2008; Malhotra et al. 2002). Relevant to this study, Cross (1981) categorizes these barriers to include situational and institutional. Situational barriers refer to one's situation in life, which may include conflict between studies, job, and family, childcare difficulties, as well as financial constraints. Relatedly, today there is a rise in demand for high education by non-traditional students (i.e., females and mature) in pursuit of the studies after a period in the workforce, or attending school while working seeking to update skills for social mobility (Schuetze and Slowey 2002). Correspondingly, this new set of students by sheer demographic characteristics needs to balance study and life.

On the other hand, institutional barriers are practices and procedures of institutions, which exclude or discourage individuals from participating in educational activities. These may include inconvenient schedules or locations, inflexible school fees, inappropriate course offerings, or lack of resources, which pose as important institutional deterrents (Malhotra et al. 2002). Moreover, as learners seek to acquire particular knowledge or skills to satisfy labor market needs, more and more prefer to pick and choose courses from the most suitable providers, rather than studying a traditional clearly defined program at one institution (OECD 2008). Furthermore, at the heart of the problem is the fact that expansion has not always translated into increased opportunity for disadvantaged populations or those with special needs (i.e., the visually impaired). Accessibility, therefore, requires the removal of these

barriers, along with placing policies and interventions to increase enrollment and improve diversity (i.e., McCowan 2016).

### **The challenge of quality in education**

The term “quality” is relative, complex, and difficult to grasp the significance of when the criteria and standards for “monitoring” are ambiguous (Semali 2014). Over the years since Tanzanian independence in 1961, the Ministry of Education has not produced a clear definition of “quality education” (Semali 2014). It has been the general assumption in the literature that quality education, also labeled as “good” education would be afforded to all Tanzanians (Nkonongwa 2012). Therefore, scholars have suggested various metrics for measuring quality. Sanguinetta (1983), for instance, recommends determining the quality of an individual school by observing: facilities, characteristics of teaching qualifications, data of pupils’ achievements, access to reading materials or textbooks’ availability, class size, teacher/student ratios, size of the staff, or location of the school. Accordingly, the Tanzanian educational sector faces numerous challenges in achieving quality education including a lack of teaching resources, textbooks, classroom space, library, or accommodation for both students and teachers. Moreover, a persisting challenge that affects quality is recruiting teachers, particularly those trained in Science, Technology, Engineering, and Mathematics (STEM). Similarly, HEIs are under pressure to improve the quality of their teaching and research despite decreasing resources due to mounting funding constraints. However, the recruitment of teachers depends on the capacity of a country to attract and maintain competent and highly motivated teachers/lecturers (i.e., Semali 2014). All in all, attention to the quality of higher education is essential in ensuring that access is meaningful for students and that institutions can make a positive contribution to society beyond the issuing of diplomas (Schendel 2015; Schendel and McCowan 2016).

### **The challenge of funding and finances**

Another persisting challenge is rising costs. This is a direct consequence of the expansion of higher education systems and wider participation, which increases the financial burden on higher education (i.e., OECD 2012). The expenses required for capacity building, namely classrooms, labs, accommodation, trained teachers, and lectures is costly affair both in terms of time and money, especially from a developing country perspective. Given that governments in developing countries have been less capable of financing higher education expansion owing to increased competition for public goods (Memba and Feng 2016), the overall trend has been to shift the cost burden to students and away from public subsidies through greater contributions by students and their families. Conversely, the government of Tanzania has expanded its student financial support system through the Higher Education Students Loan Board (HESLB), which administers loans to eligible and needy Tanzanian students (Memba and Feng 2016). This followed a realization that it was increasingly becoming impossible for the government to freely provide higher education (Rugambuka

2008). Essentially, HESLB provides loans on a cost-sharing basis and requires loan beneficiaries to repay after they have graduated. Students enrolled in degree offering private and public higher learning institutions and who have been verified by the board receive loans to cover their fees and stipend on a cost-sharing basis. Moreover, preference is given to students enrolled in science, education, and technology programs which are considered by the government as being of priority. Mgaiwa & Poncian (2016) argue that this could explain why many private universities and university colleges offer bachelor degrees in education programs and enroll a large number of students into such degrees, presumably to get access to public funds through HESLB. All in all, the growing youth population fuelled by improvement in secondary completion rates in the country places huge funding demands on the system. Although the government is the sole financier of higher education (Memba and Feng 2016), it is high time financing of higher education is recontextualized to broaden the scope and allow for more students to have access to and sustain the funding of higher education.

### ICT policy in Tanzania

The importance of ICT in Tanzania has been emphasized by the Government's steps of developing an ICT policy to guide the integration of ICT in Education, where it is expected to improve access, equity, quality, and relevance in all levels of basic education (ICT4E 2007). At a macro-level, the ICT policy of 2016 aims at accelerating socioeconomic development with the potentials to transform Tanzania into ICT-driven middle-income economy and society (URT 2016a). It is formulated within the context of national vision statements guided by the Tanzania Development Vision 2025, which recognizes ICT as an enabling tool for competitive and economic transformation and the driving force towards improving the quality of science-based education and creating a knowledge-based society in general (URT 2016b). However, while the policy envisions that ICT can help improve teaching and learning in institutions, it hasn't clearly articulated the role of ICTs in expanding classroom space to accommodate the increased number of students pouring into universities. Nor has it thoughtfully considered the uprising of a socially diverse body of students springing from the market in search of education for social mobility.

### E-learning

Conversely, many HEIs and programs around the world have successfully adapted and used a succession of technological advances in recent decades, including technology-assisted open universities, non-classroom-based modes of instructional delivery, computer modeling, and simulation as instructional tools. "Blended" instruction in which classroom time is integrated through internet-based student-faculty interaction or student-to-student networking is now the norm in many HEIs and programs (Tremblay et al. 2012). Although e-learning platforms vary between software to software, with different levels of complexity, some basic and common features of e-learning platforms include: learning content management—for creation,

storage, and access to resources; curriculum mapping and planning for lesson planning, personalized learning experience, and assessment; learner engagement and management for learner information, progress tracking; and tools and services for forums, messaging system, blogs, and group discussions (Ghirardini 2011). A typical e-learning platform consists of a set of interactive online services that provide learners with access to information, tools, and resources to support educational delivery and management through the Internet. Essentially, while combining both content (curriculum) and instruction (pedagogy) (Olson urt deMaagd et al. 2011), e-learning is made possible with the advancement of wireless, pervasive, and ubiquitous computing that potentially enables ‘anyone, any time, anywhere learning’ (Sharples 2000). Generally, ICTs can deliver instruction in a more efficient, less expensive, or more accessible way (Clark 1983).

### **E-learning benefits: access and equity**

One of the key benefits of e-learning is the expansion of modes of education delivery. It has improved access to a wider range of student populations and contributed to meeting increasingly diverse demand (OECD 2005). Much of the appeal of online education is attributed to its ability to accommodate the needs of a wide variety of learners (students located far from educational centers, employed adults, men, and women of all ages) (i.e., Schendel and McCowan 2016; Author 2013). In this approach, ‘flexibility’ is accepted as a crucial component of the changing dynamics of higher education, where students no longer have fixed patterns of engagement with their university, and can juggle part-time work, family commitments with their university work. Subsequently, scholars have found that such students preferred late afternoon or evening classes (i.e., Author 2013). Generally, e-learning, therefore, helps overcome physical barriers as well as socioeconomic limitations, including age, the gender gap in education, wealth, health status, physical mobility, and cultural practices (Nasseem 2010). Therefore, e-learning can potentially increase student enrollment into higher education in Tanzania. Moreover, could help reduce the gender gap in HEI with student enrollment and further facilitate in creating a more inclusive learning environment that could accommodate people living with disabilities.

### **E-learning benefits: quality**

Certainly, with increased student numbers, staff time becomes increasingly difficult to manage, especially when there is a need to conform to the requirements of quality assurance. Conversely, the concerns related to quality in online learning settings have to do with course content design, instructor–learner interaction, performance monitoring, and evaluation, as well as the technical aspects of the learning platform. Indeed, the principal goal of quality assurance processes is to ensure that minimum standards are met and to improve the quality of higher education outcomes. New technologies bring about changes in not only approaches to teaching but also quality with standardized courses, allowing for different use of classroom time with smaller seminars and interactive discussions as well as greater time spent with students

on their projects. ICT can enhance the quality of education by supporting student understanding as well as helping them to develop skills needed to create knowledge (Kozma 2005). Hence rather than being told about a certain theory, students get to experience theory through an all-encompassing e-learning experience, which enhances their learning and enables them to retain the concepts for longer. In this context, the impact is the gauge by which to measure the quality, effectiveness, and success of the systems put in place. Conversely, far into the future, students would be able to customize their menu of programs by combining courses offered by local, regional, and international public and private providers. This would be achieved through face-to-face, distance learning, and a combination of the two—all of which will be accredited by different agencies with a final qualification being offered by a local or international provider.

### **E-learning benefits: financial constraints**

E-learning is seen as a more cost-effective alternative to traditional modes of delivery (Salmi 2000). Relatedly, one of the leading universities in the field of online education, The Open University (London, England) has stated that the cost of online courses is about 45% of that of face-to-face courses (Agostino and Vittirio 2004). Several reasons support this view. E-learning can affect 'economies of scale,' rather than outright cost savings. However, if the infrastructures are not in place yet, the total cost can be very high in the first year. But universities should regard it as a long-term cost-saving investment. While the costs for the production of e-learning modules, materials, and infrastructure may be substantial, such costs are reduced on a per-student basis when programs are provided to large and repeated classes of learners. Moreover, the relatively lower online tuition fees are also offset by the largeness of online learners accessing reusable course material. Further, e-learning provides several options such as simulations and learning management course materials, which provide students with unlimited access to materials at no additional cost to them. Additionally, e-learning can allow students to be located in different geographical locations, hence saving on transportation, accommodation, and daily expenses.

### **Challenges of e-learning**

Despite the many benefits of e-learning, several issues exist that potentially need a workaround to successfully implement e-learning.

### **Infrastructure**

The degree to which e-learning can facilitate the delivery of higher education in developing countries such as Tanzania is challenged by several limited infrastructural and technical components such as poor power supply, lack of internet connectivity, mobile phone services in some areas, and the subsequent overall costs ICTs,

i.e., software and hardware. For example, most of the local area networks (LANs) in higher education institutions (HEIs) are fixed and most e-learning takes place in computer laboratories, lecture halls, and libraries. Most institutions are running short of such facilities. Laboratory space for e-learning is so limited that many classes either do away with e-learning as components of their mode of instruction or just leave it to the individual students or participants to cover on their own outside the normal class hours (Masanja 2010). Moreover, in terms of Internet costs, though ICT prices are declining as undersea's cables reach coastal cities in Africa such as Dar-es-salaam in Tanzania, the cost of Internet is much higher in Africa than elsewhere. Challenges exist in accommodating the costs of technology into existing mechanisms for financing higher education and taking full advantage of the educational opportunities these technologies provide to expand student access and improve their success in higher education.

### **Lack of skills**

Where technology is available, literacy to use of ICT equipment such as computers and mobile phones to access information may be a hindering block to implementing e-learning in developing countries (Sife et al. 2007). Lack of faculty sufficiently skilled in the use of ICT poses a challenge to e-learning adoption, where new and unfamiliar teaching roles may cause reluctance by teachers to put their courses online (MacDonald et al. 2005). Relevantly, the ICT competence framework for teachers (URT 2015) stresses that teachers should possess the technical skills and knowledge of web resources necessary to acquire subject knowledge to prepare teaching material and pedagogical knowledge to support their professional development. However, according to Kayombo and Mlyakado's (2016) findings, a disparity exists between teachers' training in ICT skills and the requirement of the ICT policy objectives. Therefore, close attention needs to be paid to enforcing ICT training and skills development for teacher trainees as well as in-service teacher training to effectively facilitate e-learning adoption.

### **Digital divide**

The digital divide issue is another concern commonly expressed in online learning today. The digital divide may be defined as the gap in access to access computer technology among various populations (Williams 2001). Although the expansion of HEI through e-learning in developing countries can reduce inequality by providing access to learning where blockages may have existed, e-learning is a double-edged sword that can potentially also threaten to widen the existing digital divide. Accordingly, Gorard and Selwyn (2000) found that virtual universities face numerous obstacles when registering populations particularly when a majority of those people do not have computers or access to the Internet. Similarly, ample research shows that a gap in access to ICT exists between developed and developing countries, and an even larger gap exists within countries between urban and rural areas, men and women, the rich and poor, or disabled scholars (i.e., Olakulehin 2008). Nonetheless,



introducing ICT skills into schools at a very early age can help address this issue, where knowledge of computer technology will certainly place future learners in a stronger position in their learning as well as work endeavors.

### **Lack of face-to-face interaction**

Another concern of online education is the lack of face-to-face contact and responsiveness, which may contribute to a diminished student–faculty relationship, problems with understanding an assignment, and lack of motivation to carry on with the program (Author 2013). In other cases, teachers may feel hesitant to adopt technology in their teaching and learning activities. Moreover, different from the traditional universities, where the student population normally is concentrated in one place, students in higher open and distance learning are scattered in many places, and managing them from different locations can be challenging. However, location does not have to be a problem if infrastructures, including communication, physical buildings equipped with Internet connectivity, ICT equipment, relevant software, and training opportunities, are in place.

### **Recommendations for good practice**

Collectively, literature extensively concludes that both the positive and negative aspects of distance learning exist, but strong evidence points out that the positives ultimately outweigh the negatives (i.e., Author 2013). The following are recommendations for consideration when implementing e-learning programs successfully.

#### **Clear vision and strategy**

Abundant e-learning literature highlights the importance of having a solid vision and framework in implementing e-learning, lack of otherwise would lead to failure of e-learning projects (Kizito and Bijan 2006). As such, the Tanzania Commission for Universities (TCU) has published a set of guidelines under the *Handbook for Standards and Guidelines for University Education in Tanzania*, in which institutions offering open and distance learning in Tanzania are expected to adhere to in a bid to ensure that the vision, strategy, and quality of open, distance, and e-learning (ODeL) programs are standardized. Despite sound policies, further delving into is required specifically in championing and endorsing e-learning as a reputable alternative high education delivery mode. For this, perhaps incentivizing HEIs who provide online education with monetary or other attractive benefits such as HEI ranking accelerate the awareness and adoption of e-learning by management, teachers, and students.

## Effective marketing

For successful adoption of e-learning programs at high education, prospective e-learners must see the value of online education. Merely having a good program is not enough. There is a need to ensure that the value proposition of e-learning is effectively articulated and communicated through various marketing channels. For example, marketing the benefits of studying online bachelor or diploma programs “non-traditional” student niche, i.e., full-time employees, women juggling family and studies, or even people living with disabilities of various forms will give online programs a fair chance to a chance to succeed. Ultimately, the marketing campaigns should aim to educate and offset any apprehensive perception of e-learning that may have resulted perhaps due to lack of understanding, prior miscommunication online learning, and any anxiety that is a result of resistance to change.

## Training

Like any use of technology, e-learning requires some degree of skills, for successful adoption. If learners cannot use adaptive tools, they may feel repelled and this may influence perception and intention to use. When learners feel disconnected and embarrassed, it is because they are sent in an environment in which they are not entirely delighted. The feeling will influence their study situation, as well as the whole learning process, and this results in a negative experience, which may reduce concentration and motivation (Östlund 2005). The better equipped the learner is, the more he or she can opt for e-learning. Moreover, teacher training is also important. The challenge for many if not most teachers is changing their practice of teaching in ways that accommodate the use of technology. Therefore, periodic teacher and student compulsory capacity-building seminars on ICT skills and tutorials should be conducted on how to interact with the e-learning platform before use.

## Technical specifications: proprietary vs. open-source software

Learning platforms exist as proprietary software or open-source. HEIs can opt for open source as opposed to proprietary LMSs which involve licensing under exclusive legal rights, restricted from modification, further distribution, reverse engineering, and other uses. They are closed-source with license costs per user. Instead with open-source, LMSs work under the terms of the GNU General Public License. Open-source software packages involve the following: free distribution and licensing to unlimited users, where modification and derived works are allowed. Moreover, users worldwide are engaged in their development (i.e., community participation). Examples of the free-of-charge open-source learning platforms include Moodle, Sakai, ATutor, and Forma LMS. Of all these LMSs, Moodle can be recommended as a popular favorite among many institutions as it hosts many features such as graphical themes, authentication and enrollment methods, games and activities, and resources. Moreover, Moodle developers are quick to respond to customer issues and frequently release updates to solve emerging software bugs. However, there are

a few drawbacks worth noting with open-source packages being free license is that they require a dedicated IT team with advanced technical and programming skills to handle set up, installation, and customization (e.g., installation of database and operating system). Otherwise, once that is in place, the implementation is fairly smooth and straightforward.

## Communication and interaction

Students can learn and communicate among themselves and/or with a tutor through different synchronous and/or asynchronous communication tools (chat, e-mail, forum). For example, chatting and instant messaging may also be used in e-learning as a backchannel for questions and feedback for several events such as study-group sessions, role-playing simulations, or online presentations. Audio and videoconferences are prevalent in e-learning and are well suited for face-to-face or real-time training topics where speaking and listening are important such as language learning. Audio recordings can also be made available via podcasts. Online forums can also be used in online education—where users and instructors can read and comment on one or more discussion topics on schoolwork or research collaboration. Moreover, they can use computers, mobile phones, CDs or DVDs, or audio recordings for the delivery of learning materials. Besides, participants can use blogs as a place of reflecting gathering ideas, and having smaller conversations among themselves.

Access to communication technologies is thus critical for e-learning and related educational and economic success. Faced with technical constraints, such as very limited or no online access and unreliable electricity supply, institutions need to evaluate solutions that will allow users to work with a lack of connectivity and limited ICT infrastructure. Certainly, Africa has leapfrogged in the area of communications technologies faster than any other continent attributing this trend to the “African renaissance” and recent rise in economic growth rates (Olson and deMaagd et al. 2011). Accordingly, the rapid rate of adoption of mobile phones among even rural and poor regions, for example, has been phenomenal. Also, HEI can invest in WIFI hotspots, where students can access e-learning materials from designated areas across campuses either from their mobile phones, tablets, or laptops. For example, at Strathmore University in Kenya, wireless LANs installed across the campus enabled students to learn anywhere and anytime where students could access e-learning in every lecture hall, in the cafeteria, at the recreational areas, in their hideouts, and wherever they spend their time on campus (Masanja 2010). However, in areas with connectivity challenges, users can take courses without having access to the Internet by using offline technologies and accessing materials stored in CDs, DVDs, and audiotapes or simply download course content and use offline. Therefore, in cases with limited or no connectivity, a potential solution is to run an online learning platform on a local area network (LAN) in a client–server architecture. In this model, a server provides resources or services, while client PCs request and retrieve content from the server.

## Quality assurance

Distance education is a recognized means of coping with the rising demand for higher education while ensuring good quality and standards. However, when it comes to evaluating e-learners through tests administered online, it can be quite difficult to prevent cheating. Ndume et al. (2008) therefore advise using virtual laboratories for online assessment or examination centers for online programs. Regardless, stringent security measures guided by policies will need to be supported by robust infrastructure. This entails having enough computers in the lab where learners can log in with unique identification and where system administrators can monitor system security versus student activity. Though what is to be assessed may be debatable; assessing knowledge through online assessment may be easier than assessing skills (Ndume et al. 2008). Furthermore, end of course quizzes, case studies, and application questions may also be factored into the assessment matrix. All in all, future research can look into the latest methods of online assessment and conduct vigorous testing to address the challenge of cheating in an online learning environment.

## Conclusion

HEIs are designated organs responsible for equipping individuals with the required skills for national building. Hence Tanzania's HEIs are being called upon to generate new ideas, produce skilled manpower, and incubate new technologies to realize its Vision 2025 for industrialization. As such, HEIs are required to expand and evolve to meet various stakeholder expectations, amidst quality challenges and financial constraints. Undoubtedly, the education sector can borrow a leaf or two and learn from the retail industry's move from brick-and-mortar to click-and-mortar. Like buyers and sellers transacting through e-commerce, students and teachers can interact online through e-learning, anywhere and anytime. This would mean expansion through increased delivery channels yet maintaining fewer resources. Moreover, against the backdrop of affirmative action advocating for minority empowerment, e-learning can easily tune in and cater to various student minority groups such as women, adults, those with special needs, lifelong learners, and perhaps even international students.

It is hoped therefore that this paper stimulates timely discussion on the importance of e-learning and urges high education policymakers and educational stakeholders to consider taking this direction for effective expansion. E-learning would not only be beneficial for the entire sector but would also an important and efficient enabler of realizing the country's vision for the development by 2025 and to keep up with the rapid demands of the 4th Industrial Revolution. This article provides a springing board for future research and practice.

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