



Hybrid Learning Models in Higher Education: Leveraging E-Learning to Enhance Access and Quality in East Africa

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ABSTRACT

In East Africa, the demand for higher education far exceeds the capacity of traditional institutions, leading to limited access and quality challenges. Hybrid learning models, which combine online and traditional classroom instruction, offer a potential solution. These models leverage Information and Communication Technologies (ICTs) to enhance educational opportunities, reduce costs, and support sustainable development across economic, social, and environmental dimensions. This paper explores the implementation of hybrid learning systems in East Africa, examining the potential benefits and challenges. It discusses the impact of technology on higher education, the advantages of online degrees, and the role of hybrid models in addressing current educational shortcomings. The findings suggest that hybrid learning can significantly improve access to higher education and support the region's development goals, provided that infrastructure, quality assurance, and support mechanisms are adequately addressed.

Keywords: Hybrid Learning, E-Learning, Higher Education, East Africa, Information and Communication Technologies (ICTs) and Access to Education

INTRODUCTION

In higher education, flexible e-learning systems can provide improved quality of instruction, increased student learning, reductions in cost, and increased educational opportunity [1]. A hybrid learning model aims to provide the quality of traditional modes of instruction through the simultaneous use of online and traditional classroom modes of delivery, designed to support sustainable development in economic, social, and environmental dimensions. To sustain these dimensions, it is important to provide the same opportunity for learning to students who are unable to attend universities in person [2-6]. Two types of higher education platforms have been created to provide this opportunity. Online platforms are based on courses that target students with traditional educational content and structure, while hybrid models use course materials and tools developed in-house [3]. There are individuals and universities that have already taken advantage of the affordances of online spaces to deliver instruction. For a couple of decades, such hybrid courses have been in use in developed countries, and a gradual increase of these initiatives with the support of Information and Communication Technologies can be observed. However, these advances are lacking in developing countries [7-12]. In developing countries like Kenya and other African nations with limited resources, such a hybrid learning system is a valid alternative, as there are growing internet users, growing electricity connectivity, and few traditional methods of higher education. Some educational scholars argue that time is an untapped resource for learning, and most institutions have not been successful because they focus on the delivery of programs and curriculum, rather than students' time [10]. Universities have traditionally had a custom-based pedagogy, where learning is solely based on professors and students sharing the same time and space [9]. Many learners are bound by time and space and are unable to attend full-time universities or classes due to rigid schedules. On the other hand, there are individuals and institutions that can afford these rigid schedules, and they have already taken advantage of the affordances of online spaces to deliver instruction [11]. These developments are signs that the broad university mission for education and research is not enough to sustain norms of professors, classes, libraries, departments, and colleges [13]. In the traditional university, identity is fragmented, classrooms are boxes, and disciplines are narrowly defined [14].

Background of Higher Education in East Africa

Since demand for traditional higher education institutions (HEIs) is high and the shortage of higher education qualified professionals in the region, other alternative models of education, based on the usage of information and communication technologies (ICTs), are becoming more predominant in order to decrease the gap of access to higher

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education. The first, the traditional distance education (DE) model, was developed at the beginning of the 19th century [15]. In this model, print-based materials are sent to the student's home, and regular assessments are made through examinations for qualifications [16]. Due to the implementation of new technologies, this model is evolving into online learning, in which web 2.0 tools such as multimedia resources, forums, and chats are used to enhance communication between the students and the staff members from the higher education institution (HEI) [17]. This model does not have virtual communication with other students, but it is still possible to maintain formal contacts with other students and tutors [18]. Introduction Access to a bachelor's degree in East Africa is an unattainable goal for the majority of secondary school graduates. Only 3 percent of people aged 18 enroll in a bachelor's degree program [19]. There is a 16 percent gross enrollment ratio, including all students in higher education, and 11 percent of technical and vocational education and training programs, much lower than the global average of 26 percent [20-24]. Furthermore, higher education in East Africa is unresponsive to the labor market in a region with the youngest population in the world. While 64 percent of secondary students will graduate in 2015, 33 percent of East African firms believe that the availability of skilled labor hinders their growth. Moreover, participation in internships is low, and the majority of East African firms do not have partnerships with educational institutions [25-28].

Current Challenges in Higher Education

The review carried out by Tinto shows that, while universities persist in making endless tweaks to curriculum, course affordances, university teaching methods, and faculty development, what really matters in promoting students' achievements are social and intellectual services that are provided by students to one another. Such a conclusion invites a paradigm shift, which has already commenced while universities come under increasing pressure to improve the quality of their programs and to increase the success rates of students [28-31]. There are calls for universities to develop models of education that will work in a world in which barriers to success are identified, and education models will have greater educational experiences focused on the social and intellectual integration of students [19, 17]. These models will attend not only to students' academic needs, particularly during the first year, but also to their social and intellectual needs related to their personal growth. The benefits will not come solely in terms of higher student effectiveness but also in terms of greater social involvement, making more responsible and involved citizens who contribute to the future of East Africa [32-35].

i) Lack of quality assurance mechanisms: The rapid expansion in the number of higher-education institutions in the region has seriously strained the ability of East African universities to establish adequate quality assurance mechanisms. A large proportion of the private institutions in East Africa do not have the physical infrastructure and competent faculty-advantages of a classical university education system - that can provide a more satisfactory education than either public or private universities [32].

ii) Rapid expansion in the number of students: Due to this combination of financial resource constraints and an unprecedented rapid expansion in the number of students, access to university education is hardly affordable for many eligible citizens in East Africa [33]. Private universities in East Africa have withstood a marginal increase in student enrollment. The for-profit education systems have mainly been a phenomenon of countries other than East Africa. Any future demand leads to a decline in resources that are forced into further decline [36]. The growth of public universities encompasses an unequal apportionment of resources per faculty member and staff member.

iii) Limited financial resources: The combination of a rapid increase in the number of students and a decline in government funding has led to extreme financial hardship for many public universities in East Africa. Consequently, most public universities in the region are unable to recruit and retain faculty, invest in physical facilities, create a stimulating intellectual environment, and purchase library resources and equipment [37].

iv) Convolutioned governance systems: Public universities in this region operate in highly bureaucratic and centralized governance structures in which the autonomy to innovate is minimal. For example, in Kenya, the university governing council has little control over budget decisions. Most expenses, including employee salaries and raises, are determined by the national government. This leads to inefficiencies in the management of funds, rendering outputs per shilling at public universities in East Africa unimpressive [38].

It is widely accepted that higher education in East Africa faces serious challenges: most of the universities in the region suffer from a lack of funds. These public institutions have limited autonomy and are often poorly managed. The quality and relevance of the programs suffer as a result [38-43]. Some of the constraints that are specific to the East African region include the following:

Current Challenges in Higher Education

Limited Access to Higher Education

Where do troubled students go? The immense majority happen to continue education in underground foundations, carrier, and other institutions. In Kenya, about two-thirds of students aged 20-25 years proceed with non-administrative unaccredited organizations, many of whom obtain the probabilities, training in government-founded and strongly vulnerable colleges is a remarkable step from the private, and corporate non-hierarchical establishments and lower less corporate organizations in East Africa [44-47]. Yet, the size of increasingly

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determined legitimately regulated private superior education underscores that this is not the resolution for obtaining such widely desired policy goals in East Africa [48]. Obligatory educational levies in East Africa have expanded student flow into primary and secondary education at the early stages of education, and as a result, an increasing number of learners are equipped to enter higher education [49]. This is the reason why most countries still face the dynamic demand for college graduates. Nonetheless, the current entrance pronouncement is far from adequate to accommodate those attempting to access the available openings. These concerns are directly about the decreasing access to government-funded universities and thus, limited financing by the government for college education in higher institutions [50-55].

Online Degrees in East Africa

The potential for online-only degrees in East Africa is not justified given the growing demand for higher education and the need for high-quality postgraduate education. In higher education, the coming challenge is for new high-quality low-cost internal degrees that are truly the same as the face-to-face degree [55-59]. "Mainstreaming" is the current euphemism for a drop in global tuition fee revenues from online-only degrees of 80-90%. In an era of free content, why should anyone pay over \$200,000 for a Harvard degree? Higher education is at a competitive crossroads with new models of global education [60-61]. The funding model for universities in East Africa is based on ten or 20-year-old revenue and cost assumptions while the competition for student fees is very intense. Universities in this region will need to reassess strategy, product, and price often very soon with the entry of new models of enterprise universities such as education [62]. The current regulatory constraints in most East African countries do not allow for online-only degree programs. Ministries of higher education are very protective of local content and are also aware of several quack institutions offering fake degrees, many claiming validation by some Western universities [63]. In some instances, the consultant was told of a university vice chancellor that the Ministry refused to grant approval to a collaborative program between the university and an overseas university for a joint MBA. Students prefer full-time faculty members to part-time faculty. In the digital age, faculty mobility, single market for university staff, and graduate education in East Africa will be turned upside down in the foreseeable future [64]. New models of linkages (NGUVU) will soon replace the current status quo of placement bureaus in all universities [65].

Advantages of Online Degrees

All potential students, regardless of gender, race, location, and financial constraints, have already adopted ICTs. The advantages of this technology cannot be underestimated for the net generation, born after 1975 [64]. The extremely wealthy and genetically modified students may opt for residential programs [65]. After all these years of needing three to four years off work of a set period far away in time instead of being able to either rush through the degrees or stay longer, students now have the capacity to actually choose when it is convenient to take the standard on-campus 36 months [66]. There is, however, no assurance that the traditional schools are up to speed with such student needs, and over enrollment levels and competition to favor the right applicants may prevent satisfactory accommodations [67-70].

Advantages of Online Degrees

As demonstrated by the massive response to recent calls for online PhD applications under the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), this is the most accessible level of training [64]. This essay, however, focuses on the BA/BSc degrees that are essential in the labor markets. The flexibility of schedules, substantial cost-savings on both tuition and living expenses, and not needing to quit work, stand out as the strongest advantages [60]. It is quite unsettling that online degrees do not appear anywhere in recent strategic planning documents and debates. The need in the private sector for new hires does, however, keep increasing, and the number of international students in this mode of study is rising exponentially [71]. Finding the middle ground between quality delivery, modest selection biases, network and mentoring variables in favor of residential programs, and cost constraints, will be the challenge for public universities in the coming decade [72].

Online Degrees

Hybrid Learning Models

New residential models may include periods away from campus during which both faculty and students engage with their educational institutions in non-residential ways [73-76]. These gaps may be longer after a shorter but dense period of residential study, reading, discussion, and other forms of learning. How widely the new model develops depends upon the convenience and affordability of travel to distant institutions or activities and the value-added of traditional campus living experiences [77-79]. For both developed and developing countries in East Africa, the contributions of the traditions of campus life offer enhanced academic and employment opportunities [80]. Competency-based learning and complete online learning models are often at odds with the traditions of higher education. Where future students will dine, study, and how they will receive graduation certification matters. In higher education, these are as important as the curriculum [81]. For this reason, fully residential institutions will not disappear, but hybrid learning models will become increasingly common as more youth enter the formal

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education system [82]. The main reason is not necessarily about having flexible faculty, but creating a more flexible residential capacity footprint [83-85].

Combining Online and In-Person Learning

Current online certificate and diploma programs are often geared toward giving all the content online, in part because of the high price of textbooks, tuition, or transport [86-88]. In East Africa, textbooks for exam class curriculum can be either a huge part of the school fees or a barrier for students not able to afford to learn; certificate and diploma programs are more appealing in large part because the textbooks they need are provided for free [89]. However, given the ability to pay less for lower bandwidth and the lower price of online hardware (considering the declining price of the Raspberry Pi and generous free and low-cost plans offered by a variety of educational software companies), combining very low-cost online resources with a mix of local workshops, project weeks, and vocational trainings could create a whole new kind of toolkit for students and employers alike [90]. Creating programs that take advantage of the strengths of both in-person and online learning is still fairly new, but can be immensely powerful. Employers in East Africa were nearly unanimous that they preferred graduates who had a mix of hands-on technical skills and softer skills like problem-solving, time management, communication, and teamwork [91-95]. A blended learning approach allows students to carefully choose what they are best suited to learn online and what would be better learned in-person, whether through supplementary video calling and instant messaging, multi-day in-person workshops that could act like retreats for students in an online cohort, or through visitations from students [96-98].

Impact of Technology on Higher Education in East Africa

The use of technology in HE is attractive to university leaders and Ministries of Education who are aiming to increase university graduate numbers [84]. For an individual university, overheads can be reduced by offering online degrees, and universities can form partnerships with cloud computing companies and support services, with students purchasing their learning from the university but accessing the software from the partner. With research not being a high priority in many universities, these institutions can be turned into large teaching institutions, thus earning the title of both university and provider [66]. This can earn the university and its Ministry of Education export income. As the Commonwealth of Learning argues, technology can help the poorest students in the poorest countries by removing a number of social obstacles. Furthermore, there are a growing number of private universities in the region who require a new business model [99]. The use of technology in higher education (HE) has the potential to increase access and reach large numbers of students. In the case of East Africa, increased student numbers can be partly satisfied through the use of e-learning and online degrees. This has led to the development of hybrid learning models and the promotion of e-campuses [100]. But technology has also led to the development of MOOCs, which allow universities to engage with larger numbers in both formal and informal education and training [87]. At the same time, technology has led to an increased focus on student employability, with universities requiring their students to learn how to use the latest software and to work on industry projects [101].

Technological Innovations in Education

Increased Institutional Affiliation eLearning's description by third-level institutions defines it as an emergent category [88]. Users studying MOOCs (online courses provided by higher-education institutions via website open-access) set a high bar for successful completion. Only 10% of students complete courses with harder content - but MOOCs forums also provide communities with common interests [64]. Business models for providing services by subject-service agents are beginning to be considered by higher education institutions and would provide welcome individual attention to students. Students' peer group is defined by the other students who commenced at the same time, and the workplace is a long rung down the student's chain of personal development [87, 65, 98]. A set of medium-term, finite tasks shared between components of each module, and structured through a secure provider, allows academic awards from different higher-education institutions to be combined, credit by credit, to create a total qualified personal skill and knowledge package. Any combination of durable online courses benefits the institute's reputation [102].

Local-Language Support "Many children across Africa speak first only their local or tribal language [99]. They arrive at school at age 6 speaking only Kikuyu or Luo in Kenya, Igbo, Yoruba, or Foulfouldé in Nigeria, Wolof in Senegal, or Binyarwanda in Rwanda - yet classes are taught in English or French, or another foreign language. With a high teacher-pupil ratio, scant learning resources, and zero teaching of digital literacy, much potential is wasted - and children are initiated into a system perceived as alien. The poorest are excluded [103]. While regional institutions such as the University of Nairobi require all 1st Year students to study French, this is a reactive adoption of colonial heritage culture, not a necessary support [79]. On-line, free software supplemented with optional podcasts can initiate children into prose, poetry, and mathematics and increase the use of English or French in Primary." The Demand from Mass Secondary Education Despite spending a resonant fact Euro 12.1bn on primary education since 2000, the Digital Education Across Africa (DEAA) Report from iHub's edTech evaluation and demography reports that the percentage of students continuing to secondary education in Africa is only 71% - among the lowest in the world. Africans who do not yet have access to Further Education do not benefit from the new app-

economy and find themselves locked out of the new knowledge-based technologies. The most significant change in the recent history of higher education has been the growth of virtual learning, or eLearning, as an integral component of many university programmes. African institutions, once they have overcome bottlenecks in power supply, web access, and ICT infrastructure, can offer superior online teaching output globally. The following are considered the drivers of future change [104].

CONCLUSION

Hybrid learning models offer a viable solution to the significant challenges facing higher education in East Africa. By combining the strengths of online and traditional classroom instruction, these models can enhance educational access, improve quality, and support sustainable development. However, successful implementation requires addressing infrastructural limitations, ensuring quality assurance, and providing necessary support services. The potential benefits of hybrid learning are substantial, including cost savings, increased flexibility, and the ability to reach a broader student population. As East Africa continues to develop its educational systems, hybrid learning models can play a crucial role in meeting the growing demand for higher education and fostering regional development.

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