Status Analysis of eLearning in African Universities

1. Introduction

This report highlights the eLearning needs assessment that was carried out by RUFORUM Secretariat to ascertain the current status of eLearning implementation across the RUFORUM network to guide on the required targeted interventions necessary for digital transformation in teaching and learning. This needs assessment has been carried out with inputs from various stakeholders from across Africa. Stakeholder's Online Meetings and workshops were held to solicit input, which has formed part of the content of this Assessment report.

The preliminary needs contained in this report have been derived from ICT capacity study (ICT gap analysis) and the principal research instrument used for the study was an online survey questionnaire, which was distributed to all member institutions. The initial survey received a low response (19 out of 105 institutions) but this was supplemented by a website scan across 129 institutions. RUFORUM Secretariat conducted this ICT capacity study in order to document status of ICT development within the RUFORUM member institutions and provide recommendations for knowledge sharing and targeted interventions. The study was designed to explore ICT capacity gaps and assess the needs of RUFORUM network. The report presents analysis of the results of the study and highlights the ICT gaps within the RUFORUM Network. It complements initiatives designed to guide the Secretariat and the institutions on effective planning for ICT investment and use.

Apart from the above mentioned ICT capacity study, other assessment methods employed by RUFORUM were direct observation of focus area, review of relevant studies already performed as well as published materials and expert opinions from RUFORUM webinar 11 titled "African Universities in post COVID-19: Assessing the Opportunities and Challenges of Online Learning" (Synthesis report).

2. Objectives

The main objective of this needs assessment is to establish ICT capacity gaps and assess the needs of the RUFORUM network to guide targeted interventions. Specific objectives of the assessment are:

1. Assess the enabling environment for eLearning including Policy, legal and regulatory framework.
2. Examine the state of ICT infrastructure of eLearning within the member universities
3. Determine the level of eLearning adoption in member universities
4. Establish the level of ICT use within the member universities
5. Identify Preliminaries needs for eLearning in member universities

3. Methodology

The initial survey was conducted from 105 institutions, whereby standard sets of questions were developed for three targeted respondents at each institution. These included ICT Directors, Dean of the School/Faculty or RUFORUM focal person, and Vice Chancellor/head of institution. A total of 19 institutions responded to the survey.

The gathering of responses was conducted through the purposive distribution of questionnaires via the online portal (survey monkey), email, elite and specialized online interviewing, and additional data was gathered through website scan of the official member university websites. Face to face interviews were not possible due to COVID-19 restrictions and the distribution of the universities across Africa. The assessment targeted 100-percent coverage of the RUFORUM member universities (129). However, 120 institutions (93%) were covered and information from the remaining 9 institutions was not available.

4. Findings
4.1 Summary of findings
The Number of Universities that participated in the website quick scan survey were 120 as in Table 1.

Table 1: Distribution of participating universities by region

Region	Number of universities
East Africa	41
Western Africa	25
Northern Africa	11
Southern Africa	34
Central Africa	9

4.2 Enabling environment for eLearning: Policy, legal and regulatory framework on eLearning
4.2.1   **A framework** for the integration of eLearning in Higher Education Institutions (HEIs) in developing countries was developed by Kituyi and Tusubira (2013)[1]. The framework outlines the capabilities of eLearning platforms, requirements and stakeholders for eLearning integration. Therefore, the framework can be adopted to guide HEIs management on which areas to concentrate in order to achieve the positive effects of eLearning in HEIs.

A number of African Universities have already taken a step to establish the policies on eLearning. As shown in Figure 1, 55% of the institutions have an e-learning policy in place whereas 45% have no e-learning policy in place.

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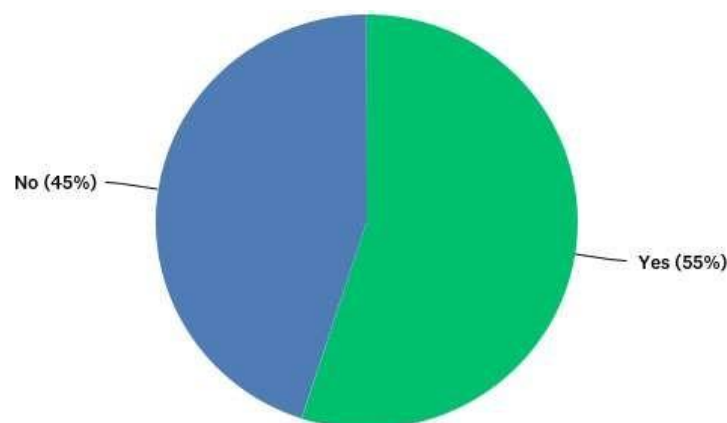
[1] Kituyi, G. and Tusubira, I., 2013. A framework for the integration of e-learning in higher education institutions in developing countries. *International Journal of Education and Development using ICT*, *9*(2).

Figure 1. State of eLearning Policy development in institutions

For example; the eLearning policies established to guide the usage of the eLearning resources in some institutions are as follow:

- Uganda Technology and Management University (UTAMU) established a policy on e-learning that is being implemented to guide the usage of the e learning resources such that students achieve the expected course outcomes. The University is committed to enhancing quality flexible learning, which has to be in consistent with its strategic priorities, such as increased use of information and communication technologies in teaching and learning, flexible modes of learning and cost-effectiveness of courses and leads the University towards the realization of its Vision and Mission.
- Makerere University has a policy on Open Distance and eLearning (ODeL). The policy aims to mainstream open distance and E-learning into academic programmes of the university to increase access to flexible and quality technology supported learning

4.2.2 **Management and accountability** at the respective universities investigated, showed that eLearning lies under the responsibility of the Faculties and colleges of Information Technology, for instance Information and Records Studies Departments; ICT departments; and, Open Distance and Learning (ODeL) Directorates respectively.

In other universities, management of eLearning is a stand-alone function coordinated by a designated centre within the university. This is the case for University of Mauritius with a Virtual Centre for Innovative Learning Technologies.

4.3 The state of ICT infrastructure of eLearning within the member universities

At universities level, provision of ICT infrastructure is required to facilitate dissemination and sharing of knowledge and skills through eLearning platforms. The infrastructure includes internet access, bandwidth, hardware and software provision. In regards to connectivity to the fibre backbone, 89% of the institutions have connectivity to the fibre backbone whereas 11% do not have connectivity to the fibre backbone as shown in the pie chart in Figure 2.
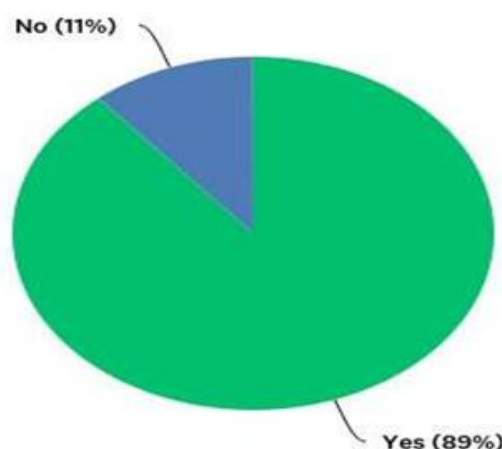

Figure 2. Connectivity to a fibre backbone

The total Internet bandwidth (Mbps) in the institution accelerate internet connectivity. Forty-seven percent (47%) of the institutions have a total bandwidth of at least 100Mbps, 37% of the institutions revealed to have a total bandwidth of between 10Mbps and 100Mbps, 16% have a total bandwidth between 1 and 10Mbps and none of the institutions reported a total bandwidth of less than 1Mbps as shown in Figure 3.
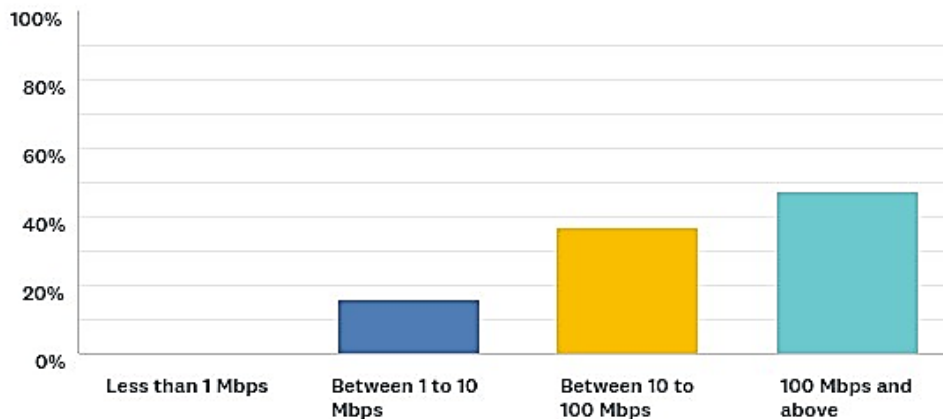

Figure 3. Total Internet bandwidth (Mbps) in the institution

4.4 Determine the level of eLearning adoption in member universities

4.4.1 Digital culture and capabilities of the African universities

It is observed in the previous studies that some universities are far ahead in implementing the eLearning compared with others. Lack of availability of appropriate hardware and other infrastructure for learning are some of the barriers hindering the adoption of eLearning in most of the universities. Furthermore, some universities are faced with challenges such as resistance from the academic and support staff, working environment (ICT policies, formal and informal platforms, willingness to adopt to digital education), there is difficulty and expensive development of eLearning courses and lack of time to follow the courses, and also training the trainers.

4.4.2 Openness to embracing risk associated with this transformation

Some universities had taken up the transformation from the traditional classroom training to eLearning and the risk analysis was done to compare with the benefits of implementing e-learning process. The COVID-19 pandemic has given most universities an opportunity to perform an eLearning gap analysis with the aim of transforming totally from classroom training.

1. Risk analysis/ assessment of transforming to eLearning
2. Perform an eLearning gap analysis before the transformation (Digital is an opportunity to change the learning land scape but we take the risk)
3. A mechanisms to weigh the risks and benefits in the implementation of online learning

4.4.3 Commitment to changing siloed mindsets

To enable a successful digital transformation in the selected universities, the following factors need to be considered to change the soloed mindsets of the people at the universities.

1. To clearly outline the advantages of a successful eLearning university (sharing good practices of online learning) e.g. Virtual University of Tunisia
2. Need ensure the availability of online services such as internet, servers,
3. Ensuring the availability of tools to access the services easily such computers, installation of wireless access points and hotspots, reduced cost on mobile (cellular) data

4.5 Establish the level of ICT use within the member universities

4.5.1 eLearning status

i) Despite the outbreak of the Covid-19 pandemic, African institutions are still in preparation for eLearning. As shown in figure 1, below, 69% of the institutions revealed the existence of an eLearning platform but still 31% had no eLearning platform.
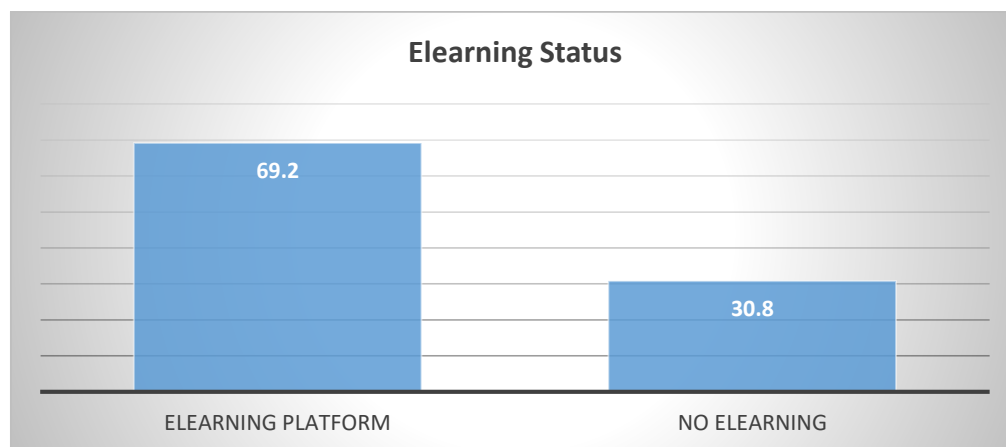

Elearning Status

- ELEARNING PLATFORM: 69.2
- NO ELEARNING: 30.8

Figure 4. eLearning Status

ii) A majority of institutions have developed their respective proprietary eLearning platforms as shown in figure 5, where 56.6% of the institutions developed their own eLearning platforms whereas 43.4% customized and deployed a moodle based eLearning platform.

iii) Almost all institutions restricted access of the eLearning platform to their own students

iv) Institutions did not indicate the mechanisms put in place to cater for disadvantaged students except UNISA who established Digital Access centers for the needy and disadvantage hence a need for lesson sharing.
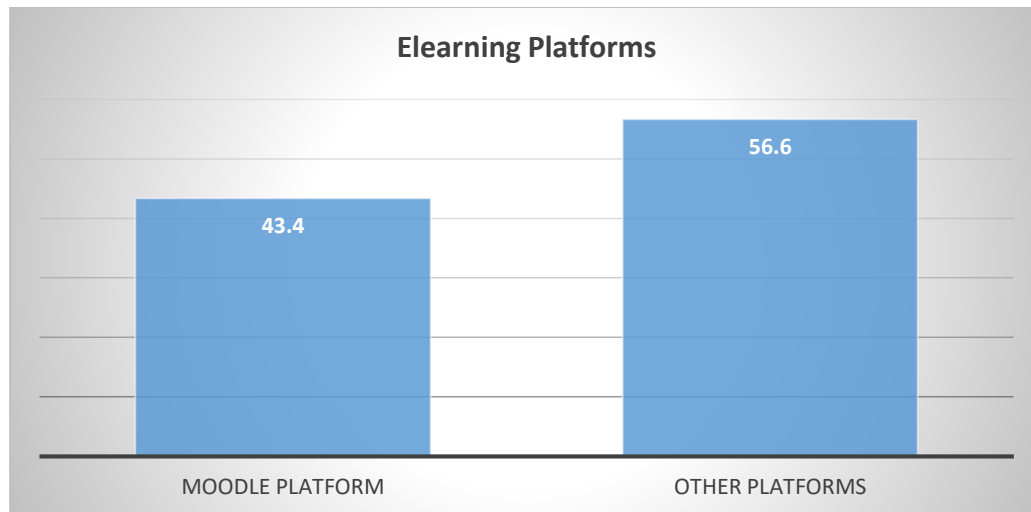
Figure 5. eLearning platforms

4.5.2 Focus on the end-users

To enable a successful digital organization, the end users need to be accounted for since they are beneficiary of the eLearning these include the learners, trainers and management staffs, and the factors to consider are to:

1. Ensure the availability of online services such as internet, servers,
2. Ensure the availability of tools to access the services easily
3. Need to have feedback mechanisms from end-users to how the eLearning platform is working

4.5   Preliminary Needs Identified

4.5.1 Need for Improved Network Access to the Internet

Although a remarkable improvement in the overall ICT Sector has been recorded in Africa in the last few years, (especially with regard to its teledensity, which by estimates is doubling annually), dial up access is still very expensive and slow. Serious practical and focused effort still needs to be made especially on the improvement and provision of internet access across the universities in Africa. There is need for concerted and constant upgrade of equipment by the institutions. There is great need for institutions to establish more Points of Presence (PoPs) in a multiplicity of areas in the respective countries and digitize their remaining analogue networks.

4.5.2 Need for ICT Access and Availability at Universities

Universities need to have access to ICT tools such as computers, telephones as well quality Internet access. The indigenous PC manufacturers can achieve better awareness of their products through strategic partnership with various educational institutions across Africa. This partnership should include donation of equipment, intake of industrial attachment trainees, allowing factory visits/excursions as well as other

socially responsible and motivational contributions. This will greatly improve the quality of ICT graduates from these institutions and help in opening up the new knowledge area to students.

4.5.3 Need for a Network Society

Efforts need to be made to increase ICT awareness across all sectors and geographical areas of the African Continent. Concerted, relentless campaigns should be embarked upon by the continental/regional network bodies like RUFORUM (in partnership with governments and civil society) and sustained to create awareness and knowledge of the great impacts of ICT in developments and transformation of communities, corporate bodies, government and public sectors. There is also a need to solicit for support from institutional leaders and the populace, for the full integration of technology in all spheres of endeavour throughout the African society, in order to facilitate and hasten the full transition of the continent to the global digital economy.

4.5.4 Need for Regulatory Framework:

Our findings reveal that majority of the institutions lack a clear regulatory framework on online learning. Online learning adoption is not well regulated and hence impacting on the quality of the content uploaded online for students and this later can have a wider impact on the countries.

4.5.5 Need for ICT Policy

Our findings reveal that although most institutions (70%) have ICT policies in place, a quick scan through their websites showed that, most of these policies need to be updated and timescales set for the attainment of the policy goals. Some policies were formulated in 2005 and have never been updated. With the aggressive upsurge in ICT worldwide, there is great need to update these policies which were originally drawn up with a focus on limited capability of ICT by then. The policies need to recognize the latest dynamics in the evolution of ICTs while reflecting on the recent developments and set goals for future development and growth with timescales set for their attainment.
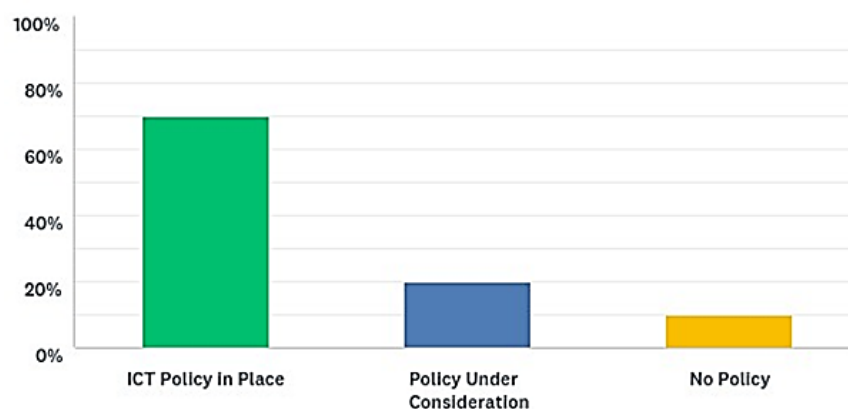

Figure 6. State of ICT Policy development in institutions

4.5.6 Need for Capacity Building

There is need to target senior university staff in upskilling for specific ICT training relevant to their needs such as computer literacy/appreciation courses, basic skills for Internet Use and other ICT trainings to equip them with skills and tools for more effective administration and improved service delivery to the other staff and students.

5 Recommendations

From our findings, the following recommendations can be drawn:

5.1 ICT readiness

Universities should do more in terms of ICT readiness by putting in place appropriate environment in terms of policies and infrastructure especially for teaching and learning. Our assessment shows that although efforts have been put in place to enable ICT adoption, more still needs to be done in terms of e-learning as only 55% of universities indicated that they have eLearning policy. Effective teaching and learning cannot happen without having a well thought policy.

5.2 ICT capability

Universities are strongly encouraged to provide adequate training especially to non-ICT staff. Other studies reveal that low level of skills among staff affect adoption of ICT in an institution. With more institutions (55%) having less than 50% of the basic ICT skills, there is a course to worry and a deliberate effort should be immediately undertaken. There is also need to increase the number of computers accessible to both staff and students. To achieve this more ICT funding is called for.

5.3 ICT use

Institutions need to integrate use of ICT in all their activities including teaching, learning, research, community engagement, and administration. The fuller the institutions integrate ICT, the better their services and the more efficient they become. To achieve this, there should be functional email, eLearning, financial, academic and other platforms to support service delivery.

5.4 Support for AfriDAP

There is urgent need for Governments and Development Partners to support the implementation of African Digital Agriculture Programme (AfriDAP) as one of the five (5) continental initiatives that were endorsed by African Ministers of Education, Agriculture, Science, Technology and Innovation in Cape Coast, Ghana in December 2019. AfriDAP has three pillars: **Pillar 1** is Digital learning and sharing technologies, aimed at supporting effective teaching, learning and experience sharing ubiquitously within agricultural scope; **Pillar 2** is Data science development, which comprises of data science research, big data management and capacity building in data science in higher agricultural education institutions and related institutions; and **Pillar 3** is Incubation and innovation for digital agriculture, which is to produce sustainable entrepreneurship and start-ups to support both the first and second pillars of AfriDAP in a low-cost manner.

5.4.1 There is now an urgent need to support the domestication and roll-out of the AfriDAP initiative

5.4.2 Immediate attention should be paid to the first pillar of the AfriDAP initiative that aims to promote digital learning and sharing of technologies. This pillar emphasizes support to effective teaching and learning experience.

5.5 Collaboration and Fund raising

5.5.1 RUFORUM Secretariat should facilitate collaboration initiatives to enable lesson sharing and develop possible mechanisms for resource sharing

5.5.2 RUFORUM Secretariat should reach out to development partners to mobilise funding to promote use of ICTs within its network member universities

RUFORUM Secretariat, September 2020