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The influence of digital globalisation on an East African university

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ABSTRACT

This case study provides an in-depth analysis of the role of digital technologies in the process of globalisation in higher education in a developing nation in the Global South. We explore some of the triggers and enablers of digital technologies in an East African university that aspires to be a globally recognised research-intensive institution. The semi-structured interviews with senior administrators and academic staff revealed that the university recognised a digital dividend by establishing networks with private companies and other universities. Participants also talked about the opportunities afforded by MOOCs in supporting teacher access to learning materials developed by others, how their own MOOCs could enhance global recognition and how the concept could be utilised as a platform for the conservation of linguistic heritage. However, many concerns were raised to highlight the digital divide and the difficulties faced by a university in a developing nation. The university was globally disadvantaged as it had little choice in embracing digital technology while experiencing limited options for what this could achieve. Despite limitations, the findings showed that the university actively sought opportunities afforded by digital technologies to help claim its position as an emerging university in East Africa and develop a global presence.

Keywords: *Digital globalisation, OERs, MOOCs, Global South*

INTRODUCTION

In this article, we examine the effects of digital globalisation on an East African public university that was concerned about its global status and the need to model itself and compete with other universities on a global scale. Specifically, we were interested in the role of digital technologies and more broadly on the overall impact of these on higher education in the Global South. Globalisation is a phenomenon that can be defined in many ways but is typically thought of as a way of connecting and strengthening social and cultural relationships, and economic interdependence on a global scale (Steger 2017). The phenomenon is a process of interdependency between nation states and economic systems, and globalisation has embodied a rapid transformation in communication, knowledge creation, the flow of information, collaborative networks, and trading in goods and services. It involves the creation of deliberate social contracts between people, institutions and systems. However, as neoliberal ideology, globalisation is instituted mainly by a desire to compete and be successful in the global marketplace.

Advances in digital technology have rapidly transformed and strengthened the processes of globalisation, to the extent that the 21st-century form of globalisation is mostly defined by the earlier revolution in information and communications technology (ICT), now thought of as 'digital globalisation' (Manyika et al., 2016). More recently, this phenomenon has been concerned with the proliferation of mobile and ubiquitous technologies and how these 'anywhere, anytime' digital systems influence the global flow of data and networks, facilitating the free movement of ideas and knowledge. Castells (2009) noted that digital technologies have enabled and supported the creation of a connected world that can communicate regardless of distance and time differences, while blurring international borders and linking many nations in a global network. This connected world offers tremendous potential for education in developing countries, through facilitating access to research networks, efficient sharing of open educational resources (OER), universal opportunities

to access higher quality education in the form of Massive Open Online Courses (MOOCs), and to some extent, the development and sustenance of socio-linguistic heritage.

Digital technologies broadly refer to digital systems, related applications, resources and data generated through the internet. More specifically, these include social media, mobile applications, multimedia, productivity applications, cloud computing, interoperable systems and other software devices, IoT, AI and big data. Together, they create highly interactive information and data flows that connect systems and people across the globe. There are three stages in the process of how digital technologies relate to globalisation. First, the early development is focused on the proliferation and technical maturity of devices and infrastructures that foster connectivity with others who have access to these technologies (Boyer 2012). The second stage enables individuals and institutions to share content, resources and opportunities, such as journal articles, teaching materials, educational grants, and knowledge transfer (Hylén 2006) and the third stage is about the formation of social networks that have global outreach. The increasing availability of social networking tools and platforms enables academics to develop cooperative partnerships useful for enriching teaching, research, and knowledge networks.

Accordingly, the development of technologies has significantly redefined higher education, particularly regarding instant access to social and knowledge networks. Moreover, the number of knowledge networks such as technology labs and telemedicine, has exponentially increased, creating new interconnected environments that have triggered both collaboration and competition. Knowledge networks facilitate knowledge exchange, typically in the form of research findings, databases and teaching materials, as well as facilitating the internationalisation of student learning (Altbach 2013). They can also foster the formation of distributed communities of practice that can collaborate with governments, international networks and the private sector to integrate academic work with national, economic and political agendas, as well as developing new cultural understanding (Daniel, O'Brien, & Sarkar 2004).

LITERATURE REVIEW

While the international movement of academics, researchers, students and knowledge between universities has a long history, what digital technologies have done is speed up the ease of information and data transfer (Bedenlier & Zawacki-Richter 2015). Notable among these technologies in education is the growth of social media technologies (SMTs). SMTs encompass a wide variety of web-based applications, such as blogs, wikis, online social networking, and virtual worlds. Each has a unique character while sharing the same purposes of communication, collaboration, community, creativity, and convergence (Friedman & Friedman 2013). Although most of these applications started as amateur-driven community platforms, they have become sizeable global data corporations (for example, Google, Facebook and YouTube), and serve as an active knowledge hub facilitating the free flow of ideas on a global scale. More specifically, applications such as Facebook, YouTube, Twitter, and LinkedIn have transformed the way people communicate and relate to each other, play, access job opportunities and advance their careers (Greenhow & Gleason 2012). In education, social media applications and platforms have evolved to support various activities including peer-learning and sharing of learning resources. For instance, Facebook facilitates a sense of community in language classrooms (Blattner & Lomicka 2012) and can play a critical role in the development and maintenance of a language (Cunliffe, Morris, & Prys 2013).

On a grander scale, mobile and ubiquitous technologies have enabled the sharing of open educational resources (OER) to create free universal access to higher education. For example, Harvard, Stanford and Massachusetts Institute of Technology have initiated OER projects to respond to the issue of higher education outreach to the broader society (van Dijck & Poell 2015). Massive open online courses (MOOCs), as a key example of an OER, have been significant drivers of global learning and innovation in education (Morris 2014). MOOCs facilitate knowledge

distribution among a global network of learners and deliver quality teaching from prestigious universities to large numbers of students (Christensen & Raynor 2013). Similar to other OER provision, MOOCs offer students, particularly those from developing countries, with unprecedented access to high-quality higher education. They do not impose requirements on learners' competencies, and each course is free (or with minimal charges for those interested in acquiring a certificate of completion). MOOCs propagate accessibility to advanced knowledge beyond political, physical, socio-cultural and demographic barriers and in doing so, support new ways of learning (Laurillard 2014). In the context of Sub-Saharan Africa, OER, particularly MOOCs, have the potential to reduce costs, improve quality of information and increase access to education (Wright & Reju 2012). For example, because they are free, in some parts of sub-Saharan Africa MOOCs are used as resources for continuing education and offered to postgraduate students, teachers and educators to improve teaching skills and the curriculum.

Despite the many benefits of digitally driven globalisation, within the higher education sector, it has also created unfavourable conditions for institutions that lack a comparatively strong political or economic voice, especially those in the Global South like Rwanda, Afghanistan and Nepal (Muriisa & Rawbyoma, 2019; Rab, MacDonald, & Riaz, 2019). In this context, globalisation puts unsustainable pressure on institutions of higher education that wish to stay relevant to a nation-state agenda while facing demands to act differently, or that feel compelled to compete more widely on the global stage. Globalisation also threatens to homogenise social structures through the imposition of language and culture as western moral codes seem to dominate in most global transactions (Mittelman 2000).

One particular issue with digital globalisation has been the provision of a sustainable infrastructure in places where there is no universal and affordable Internet access or infrastructure. Manyika et al., (2016) stated that at the end of 2015, 57% of the world's population (estimated 4 billion) were offline, and only 15 per cent had access to broadband. Data shows a widening digital divide (UNESCO 2016b) with many countries, including those in East Africa, trailing behind what is typically regarded in the West as modern technological infrastructure, and as a result, many of the advantages of digital globalisation are yet to be fully realised (Harle 2010). In addition, the developing nations tend to have little disposable income to spend on digital technologies (Harle 2013; Zlotnikova & van der Weide 2011) and data scarcity has resulted in some institutions charging students for the usage of the Internet on campus computers (Moodie 2010). There may also be a lack of the necessary digital literacy and skills, and without these, academics and students cannot fully leverage available information nor contribute significantly to digital content. As digital technologies turn into the new medium for interacting with students, pedagogical changes are also required (Jordan 2014). For universities on the wrong side of the digital divide, academics may have little knowledge of using digital technologies or understand the appropriate methods for teaching with them.

Global digital heritage is dominated by the English language, while local digital heritage refers to the development of content to preserve a society's ideas, values and knowledge for future generations (Kurin 2004; Rahaman & Tan 2010; UNESCO 2016a). However, the dominance of the Western elite universities overshadows the potential for curating and preserving other cultures, languages and institutional practices (Marginson 2010). Culture becomes endangered when an emphasis is placed on acquiring and utilising an international language (mainly English) at the expense of regional and local languages. A language reflects the culture and traditions of a people and so represents ways of thinking, knowing, values and identity. A loss becomes a critical issue.

On the other hand, it can be argued that in the higher education sector, OER can contain *subject* digital content that is equivalent to a digital heritage. As such, and for a true global benefit, all countries in the Global South need to participate in reclaiming and reshaping this content through digital repositories. To do this requires selecting culturally relevant writing materials, dealing with

intellectual property issues, and collecting various historical and contemporary documents (Ekwelem, Okafor, & Ukwoma 2011). With a digital database, universities can claim ownership of their educational practices and strengthen their cultural identity (Wanjema 2012). Only a small number of developing universities are connected to the Internet super-highway or have suitable computing infrastructures to do this job (Trifonas 2017).

To achieve equity and a digital dividend, which is an economic benefit derived from engaging with digital technologies (Daniel & West 2006), universities in the Global South need to collaborate with and receive support from governments, international networks, and the private sector. Private technology corporations (for example, Microsoft, Google) provide financial resources for top universities (such as, Stanford, MIT, Harvard) to develop MOOCs (van Dijck & Poell 2015), but this is not available in the same way to universities in the Global South, particularly Africa. Wright and Reju (2012) have argued that successful development, distribution and use of OER in sub-Saharan Africa would require government and education leaders to tackle some key challenges. Mentioned already are improving technology infrastructure, reducing the cost of Internet access and providing professional development opportunities for institutional leaders, teachers and students.

In this paper, we have examined a university in East Africa to explore how digital globalisation has impacted the institution. In particular, we were interested in the influences of digital technologies on management decisions and teaching and learning. We found that there were immediate and obvious benefits to digital technology, but these also served to highlight the differences between an emerging university and what technologies have so far offered the well-established universities outside of East Africa.

METHODS

This case study focuses on a public research university in Tanzania, East Africa. We have used the pseudonym 'Mokono' University and pseudonyms for participants to provide anonymity. Mokono is primarily supported by the government, student fees and international donors. Its medium of instruction is first English and then Swahili, while its core function is to conduct research and teaching that contributes to Tanzania's socio-economic development. With a mission to be one of the best international research universities in the region and a globally recognised research-intensive institution, it has an active internationalisation programme. For example, Mokono has designed a Swahili course that has global recognition and attracts international students.

For capacity development, the institution acquires sponsors for academic staff to gain postgraduate qualifications and to collaborate with well-established institutions to strengthen its research and teaching. Mokono is ambitious in its desire to brand itself internationally, despite its resource limitations, because such a reputation was seen to leverage more benefits. However, it was recognised at the outset that although globalisation had provided Mokono with opportunities and resources, the institution has had little freedom in how these resources are used.

In-depth semi-structured interviews were carried out with senior administrators (n=6) and academic staff members (n=6). The questions centred on the advantages and disadvantages of digital globalisation. The administrators provided insight into management and leadership while the academic staff commented more on issues related to teaching and research. A critical theory perspective was adopted during data analysis and in particular the advocacy of higher education for the public good (Giroux 2002; Pasque & Carducci 2015). The primary criterion of data analysis was how digital technologies enabled or harmed the university. Data were reduced through constant comparison and the emergence of relevant themes. In the results and discussion section we will first discuss the development of OER as part of a digital strategy and then the barriers to digital globalisation.

RESULTS AND DISCUSSION

Before the advent of digital technologies, Mokono University did not see the necessity of responding to globalisation. Hamidi (a senior administrator) recounted that the past administration:

> *"… had managed (the University) within the local boundary and was not so active to see what links can be forged or aware of what development or changes are taking place in (global) universities."*

Hamidi saw the benefits brought about by technology and said: '*now we have to open the boundary'* as the university had no choice in embracing change. Both the senior administration group and teachers saw digital technologies as central to the process of globalisation, although each had different perspectives. The administrators were particularly concerned about the university's global branding, primarily through the export of online education. Teachers were more concerned with downloading teaching material from online sources and developing their professional skills. An example of the global branding of great importance to the university was the development of a MOOC dedicated to the teaching of the Swahili language. This initiative was a collaborative project with another university. The Kiswahili MOOC (*K*MOOC) was not only about preserving cultural and sociolinguistic identity through language teaching (Rahaman & Tan 2010) but also about creating a niche market and competitive global advantage for Mokono. As Kito (an academic staff) said:

> *"We want to globalise Swahili because our vision is to be a centre of excellence for teaching Swahili."*

However, at the same time, the university competed with other institutions in the region that were working on establishing their own Swahili language MOOCs. The university wanted to ensure it had the ownership of the global branding of this language and as part of a strategy to increase global visibility, it actively sought to attract international students to study language at the university (Yuan & Powell 2013). However, it feared that better technologically equipped institutions would overshadow these global intentions. Mune (a senior administrator) said:

> *"We need to be a pioneer (of the KMOOC). Mokono must emphasise Tanzania is the place of birth of Swahili. We can offer an introductory course on MOOC, at least to attract people in the beginning and learn the language."*

He explained that the aim was to use the *K*MOOC for expanding both local and international access to language. However, MOOCs may give the impression of access to university-equivalent knowledge, but they provide something entirely different. They are not typically used for qualifications, partly due to the resilience required to complete them and partly because people dip in and out. Quality remains an issue and also assessment as few complete assessments (Joksimović et al., 2018). The issue of assessment being linked to learning motivation is very important in learning a language where regular assessments are the norm.

When making learning materials available online Mokono was creating digital heritage in the service of preserving the Swahili historical, social and cultural traditions in this virtual world (UNESCO 2016a). All participants said that the University not only wanted to preserve the language but encourage the wider use of it. Kito (an academic staff) noted:

> *"We think that Swahili can be the language of Africa and recognised in the United Nations."*

It was also said that the *K*MOOC would enable Mokono to focus on using Swahili as its primary medium of instruction instead of English, which was a language barrier to local students. In other

words, the *K*MOOC could help the university emphasise the importance of its national language, maintain its use and expand it on a global scale. This initiative aligned with the national aim to develop local content (Komba 2009). How realistic such broad aims are must be open to question, and such changes are complex. For example, English language skills are highly desirable in a global world and students that have English as an additional language can be advantaged in employment and mobility (Hicks 2014). Teaching in English also promotes disciplinary learning and language learning at the same time, and most MOOCs available tend to use English (Laurillard & Kennedy 2017). However, English as the *lingua franca* in Africa could also be seen as detrimental to the principles of linguistic diversity or even as a form of linguistic imperialism (Coleman 2006). Regarding controlling knowledge, MOOCs themselves have been seen as neo-colonial, and it is interesting that Mokono University is both colonised and coloniser at the same time; colonisation being enabled through digital technologies.

Academics saw themselves accessing professional knowledge networks through OER. The ability to access free content from distinguished universities was a significant contribution to their academic development. Although it was not clear what content was downloaded or what impact the transfer had on practice, access to higher education resources was seen as critical to the development of world-class knowledge and teaching skills. Mzuzi (an academic staff) said:

> *"From the internet, I could look at other universities as case studies to prepare my lesson and get ideas from online lectures."*

Tia (a senior administrator) took OER on research, particularly from well-known universities, for benchmarking standards for Mokono's research policy. More broadly, participants saw various forms of digital technology providing opportunities to compare the quality of education at Mokono with the rest of the world, and provide goals for alignment with international standards. Tia mentioned that digital globalisation had provided access to a world of ideas that could be 'localised' and adopted for East African needs. There was a clear consensus among participants that OER enabled the university to keep abreast of developments in higher education and Duma (an academic staff) added that the Internet helped him keep up with his research field. Accessing knowledge networks was largely one directional. Networks have knowledge creation, transfer and adoption (Phelps, Heidl, & Wadhwa 2012) but in Mokono's case, the networks were more about appropriating knowledge from OER and adopting ideas for practice, except for the *K*MOOC. Such a position seems perfectly reasonable for an under-resourced developing university, and such knowledge acquisition and use were not only rational, but in the spirit of open access.

Staff and students had limited access to quality research journals because these needed to be purchased by the institution and money was not available. Although the Internet can facilitate the distribution of research articles, there are global issues about equal access. The vital web-based journals are segregated by free or fee-based publishers, of which the private companies tend to have the monopoly on the quality research journals with the most important articles. Yet many institutions cannot access these (Beverungen, Böhm, & Land 2012). Kito, who was one of the academic staff undertaking a PhD, was grateful that she could "ask colleagues learning at abroad" who had access to these journals and could assist by sending her articles. Mokono wanted to develop its most inexperienced research staff, but this is very difficult when there is poor access to quality academic literature.

In contrast to university provision, mobile and ubiquitous technologies such as smartphones provided students at Mokono with the opportunity to access various forms of web-based resources. Although few owned computers, Tia (a senior administrator) said that many students had mobile phones and could access digital information with new communication possibilities:

> *"We do not have many resources, like books and equipment, but with (the internet-enabled) mobile phones, students can get a lot of knowledge and information. So, (now) they do not necessarily need books to know things."*

Less reliance on books has to be seen as attractive when an institution cannot afford them and using mobile, and ubiquitous technologies enabled students to experience anywhere-anytime learning. Students could tap into new knowledge networks, and these technologies foster better communication with the broader community and the global market. However, relying only on information from the Internet is also problematic as there is very little control over the quality of information available online and the skill of evaluating knowledge and the quality of evidence in different fields needs to be learned as a higher-order skill. Interestingly, the use of mobile technology by academic staff was not mentioned, and it appears that teachers and researchers mainly relied on traditional digital infrastructure.

With regards to teaching, Mokono had few skilled professionals with the expertise to establish digital learning materials. Safiri (an academic staff) said Mokono needed to work with an international partner to lead the institution's MOOC project, and an international academic with experience was currently providing training to improve digital skills and work on digital content delivery. Nevertheless, help was limited in what it could achieve and Mokono still had few digitally skilled staff and no resources to hire or train more. In addition, an inadequate digital technology infrastructure and unstable electricity supply were seen to exemplify the digital divide (Trifonas 2017). Power failures interrupted all operations and every electrical appliance from air-conditioners to computers. These problems seemed to be even more relevant in technology courses and more acute when they were concerned with the education of digitally literate graduates. Badru (an academic staff) said:

> *"I am teaching (technology related courses) and sometimes we have practical sessions. We do not have adequate classes to accommodate all students, and we do not have adequate internet access. Most of the time I felt that I failed to teach because we do not have the (internet) connection or so weak that you cannot do anything. This poor infrastructure is a big challenge."*

Staff were well aware of the benefits that an improved infrastructure could provide, for example, the university had two campuses that could be digitally connected. Badru thought that more time was spent on teaching than necessary because some courses were taught on each campus:

> *"If we have good infrastructure, maybe we can connect between campuses instead of teaching the same lecture here and there. We can have one session that connects two campuses to run the same lecture simultaneously."*

Another example of potential benefit was on-line programmes and OER as Safiri noted:

> *"The poor internet connectivity that we have, they were like a setback. If we have better internet connectivity here, we could even work with other universities, do online education. I think it would be a very good idea if our university collaborates with other universities and start some online courses together. "*

Safiri felt Mokono had been left out of both the development of online knowledge and digital exposure for the institution. The way to resolve this was to collaborate with technologically acquainted international universities (Chikuni, Cox, & Czerniewicz 2019). These collaborations were seen as essential to reap the benefits of digital globalisation, and a digital dividend could only be acquired when there were relationships with well-known universities and industry. Hamidi (a senior administrator) gave an example of how Mokono collaborated with a prestigious institution

and a local company around telecommunications. The company was prepared to sponsor students because of the university collaboration. Sponsorship included scholarships and job placements. Both partners also wanted to reach into Mokono to meet the demand for technically skilled graduates with qualifications of an international-standard, and this industry saw its sponsorship as an investment in the university and future employees. Participants thought that the partnership gave successful students a better edge when competing with international graduates in the global market. The initiative also enhanced the branding of the university, the reputation of individual academics and the status of particular disciplines. Both local and international students were attracted to enrol because of the training and career opportunities collaboration provided.

CONCLUSIONS

In this paper, we have taken a position that modern globalisation is greatly driven and enabled by digital technology. It has a significant impact on how Mokono is managed, which in turn has ultimately shaped the structure and the nature of teaching and learning and the aspirations of the institution to take its place on the global stage. However, globalisation also put demanding and unsustainable pressure on Mokono to stay relevant to the nation-state agenda while at the same time competing globally within a hegemonic and elite higher education sector. There were residual effects of globalisation marked by comprehensive universal reforms of East African higher education, leading to neoliberal processes of marketisation, massification and digitisation of learning. The institution and teaching had moved to more business-like values and operations.

Owen Hicks (2014) argued that the pressure to compete with the 'world's best model' is unrealistic for most universities but Mokono had plans to become a research-intensive institution with global recognition. The university was still lagging behind twenty-first-century digital globalisation which is characterised by rapid technological changes that significantly disrupt the higher education sector. For instance, there was limited availability of broadband communication networks to students and academics at Mokono, as well as a reliable power supply. Although OER such as MOOCs are mostly free, without the Internet students and academic staff cannot fully leverage the opportunities afforded by these online resources and knowledge networks.

The proliferation of digital learning platforms, software as a service (SaaS); platform as a service (PaaS), new psychometric and online assessments tools, learning analytics, adaptive learning technologies and gamification, as examples, were not yet available to Mokono. Both Mokono and the elite university sector understand that such technologies can be leveraged to create more flexible and personalised learning and that the deployment of predictive models can help institutions manage many of the challenges they face (such as, staff and student recruitment). All digital technologies require skilled people with a range of expertise in both digital technology and digital globalisation strategies, and these were not yet sufficiently available to Mokono.

Though many MOOC-platforms such as Coursera and EDx are permeating African higher education through forging partnerships with leading universities, such as the University of Cape Town and the University of the Witwatersrand, there are issues with digital heritage and content curation. Most MOOCs are created and produced in Western countries (knowledge producers) while used extensively by developing countries (consumers of knowledge), a situation which perpetuates a new form of cultural imperialism. For instance, the content of many OER is not written in the African languages and does not reflect any African worldview or cultural values. It suggests that without parity in equal participation in content curation, aspiring institutions such as Mokono and many others in the Global South remain marginalised by digital globalisation (Kigotho 2018); as shown in this paper, they tend to operate in unrepresented languages, such as Kiswahili.

Finally, it is likely that because of the negative perceptions that MOOCs are an undesirable model of learning, coupled with strong beliefs in the superiority of face-to-face and on-campus pedagogy,

some institutions are likely to resist developing institutional strategies and support for MOOCs. Without such support, the sustainability and scalability of MOOCs that might benefit many higher education institutions in East Africa are not attainable. Future research will focus on exploring the rare case of Mokono's *K*MOOC and how its development is used to reclaim the region's linguistic and cultural heritage on the global scene.

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