IOSR Journal of Research & Method in Education (IOSR-JRME)
e-ISSN: 2320–7388, p- ISSN: 2320-737x Volume 12, Issue 6 Ser. III (Nov. – Dec. 2022), 65-78
www.iosrjournals.org

De-Colonising Kenya's Teacher Preparation Programmes In Higher Education In The New Technological Age: Adoption Of The Blended Approach As An Emerging Global Trend In Africa

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Abstract.
Teacher education programmes in Africa have followed the same approaches adopted since the countries got their independence. Two models—consecutive/serial and concurrent—of teacher education have been adopted at the higher education level. Instruction has primarily been face-to-face interaction through either pre-service or in-service approaches. In Kenya, this is still the ongoing practice in the higher education sector which borrowed heavily from European and Canadian programmes. Generally, the programmes have been criticized as narrow, limited in scope, and rigid in nature, thus hampering creativity, innovation, and progress practice Yet the 21st century demands aligning manpower development to societal needs and use of soft skills by employing emotional intelligence in human endeavors. The world is at the threshold of the Fourth industrial Revolution, characterized by, among others, dominance of information and communication technology in virtually all facets of life. It is against this background that this paper calls for a paradigm shift on teacher education programmes in Kenya's higher education sector with a view to aligning them to the

21st century skills where digital/remote learning or aspects of it, run hand in hand with the face-to-face approach to learning. This paper seeks to achieve the following objectives: trace the historical evolution of teacher education in higher education in Kenya, extricate the status of teacher education in higher education in Kenya, establish the approaches/programmes in use in teacher preparation in higher education in Kenya, relate Kenya's teacher education programmes in higher education to the 21st century skills, evaluate the use of technology enhanced learning in the teacher education programmes in higher education in Kenya, and finally, recommend the way forward for teacher education programmes in higher education in Kenya in as blended/hybrid learning is concerned. The paper adopts a qualitative paradigm guided by a relativist ontological assumption and the interpretive-constructivist epistemology. Using document analysis, the paper evaluated selected primary and secondary sources, comprising research and conceptual literature to unearth the historical evolution and status of teacher education programmes in the higher education sector in Kenya. Thematic analysis was used to analyse the data which was collected from the documents through purposive and convenience sampling techniques. Consequently, we call for the adoption of blended/hybrid learning in Kenya's ~~s teacher education preparation pro~~grammes in the higher education sector. This is done in the hope of making the programmes relevant, enriched and in line with the demands of the 21st century.

Key Words: Teacher Education; Consecutive Model; Concurrent Model; Digital Learning; Blended/Hybrid Learning.

Date of Submission: 02-12-2022 Date of Acceptance: 14-12-2022

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1. Historical evolution of teacher education in Higher education: –

Teacher education programmes in higher education in Africa started in the dying days of the colonial period. They were developed to address the demand for teachers in primary and secondary schools during the inter-war period of

1919-1939. A handful of the local population were trained for positions in the emerging institutions of higher learning. This number added to the pool of the foreign manpower that provided services to the sector. The colonial authorities, like their successor, the independent governments, saw the higher education sector as playing a vital role in the socio-political and economic development of the countries. Higher education thus became a springboard for the development. It remains the same to date. The sector is a hotchpotch of the former colonial masters and American teacher education programmes.

The history of higher education in Kenya and by extension teacher education begins with Makerere University College's provision of degree programmes in the 1950's. Unfortunately, the colonial system of education was organized in a way to limit the number of entrants to higher education in virtually all the fields. Students were eliminated at the lower levels to reduce the number of candidates at the tertiary level. Nonetheless, towards the 1950's a large pool of Africans with higher education in the Kenyan colony emerged. However, the challenge of manpower still persisted.

Consequently, the colonial authorities came up with measures to address the challenge. They formed a committee to look into the education issues in the colony. The committee led to the Beecher Report of 1949 which called for expansion of teacher training (Sifuna & Otiende, 2006).The recommendations impacted positively on teacher education in higher education in the country.

The Royal Technical university college, established in 1961 as a constituent college of the University of London, Kagumo and Siriba teacher training colleges, which were founded following the recommendations of the conference convened by the Christian Council of Kenya in 1956, supplied the teaching manpower needs of the country in the late 1950's. Later, the University of Nairobi was established in 1970 . It was to be a major source of manpower in the teaching sector (Sifuna & Otiende, 2006).

Some external factors were to provide a fillip to the development of higher education in Kenya in the early 1960's, which had a positive effect on teacher education. A major one was the international conference sponsored by UNESCO and the United Nations Economic Commission for Africa in 1961 at Addis Ababa. Apart from these conferences, another positive impetus came from Nigeria whose post–school certificate and Higher Education commission (Ashby commission) report of 1960 proposed the introduction of undergraduate degree in education to address the shortfall of graduate teachers in the country (Karugu,

2007). The commission led to the establishment of Bachelor of Arts in Education in the country's universities. Other African countries, especially the Anglophone ones, took a cue from the Nigerian experience. Kenya's undergraduate degree programmes were greatly influenced by the University College, Dar-es-salaams' which had been borrowed from the Nigerian approach. It began in the 1966/67 academic year.

Finance and time were factored in coming up with what was actually a crash programme to meet the country's teacher needs. Beginning that year, the government policy was that 50% of students enrolled in the Bachelor of Arts and

33% of those in science would add education to the courses in the academic subjects they took and thus end up with an academic degree with qualifications in teaching (Karugu, 2007). This was a modicum of the concurrent model hence cheaper financially, convenient and less time consuming. In this arrangement, a student would drop education and still proceed with the general degree. Moreover, even those failing education courses would still pass their general degree courses. It was thus a win-win situation for both the government and students. This was thus a very flexible but quite a challenging programme to the government in terms of manpower development in teaching. Consequently, with time, the government introduced the Bachelor of Education degree programme at the university of Nairobi and Kenyatta University College in 1972 to address the shortcomings of the programme. Students, from the onset, enrolled for the education course. One had to take education and any other two teaching subjects. There was also a mandatory teaching practice component.

The increasing demand for teachers at the secondary and post-secondary levels led to the creation of teacher education courses at the higher education level. These took the form of both consecutive and concurrent models at the degree level. There was a corresponding increase in the financing of the education sector in higher education to meet the increased enrolment in institutions of higher learning in the country**.** Sifuna and Otiende (2006) notes:

In line with the policy of concentrating on the production of high-level manpower, there was also a major investment in university and tertiary education. The total undergraduate enrolment from 1964 to 1968 nearly trebled, from 602 to 1,173. By 1974,the Development expenditure for the university was second only to that for secondary education: Kenya pounds, 3,700,000 out of 16,576,000. (p 242).

Between 1970 and 1974 there were three higher institutions which offered courses in teacher education. These were: University of Nairobi which trained graduate teachers with Bachelor of Arts and Science degrees (education option) from 1966 before changing to Bachelor of education in 1970; Kenyatta University College; and Kenya Science Teachers' College.

The establishment of Kenyatta university college marked a turning point in not only higher education, but the entire teacher education sector in the country. It mainly specialized in teacher education programmes. The courses that were being offered at the Faculty of Education in Nairobi University now were domiciled at the college. Later, the Seventh Day Adventist college at Baraton in Nandi county was founded. It offered courses in education as part of its curriculum. Through assistance from the Canadian International Development Agency (CIDA), the country established the Kenya Technical Teachers college in 1977. This institution was to concentrate in the training of teachers in technical subjects at the secondary school level and other aspects of industry. Egerton College of Agriculture, which had been in existence in the colonial period to offer instruction to European youth in agricultural skills, equally saw massive support from the USA government. It offered courses on teacher education in agricultural related areas at the diploma level. All these interventions greatly expanded the country's higher education sector and by extension teacher preparation programmes.

With the expansion came the issues of quality of the products. Concerns on quality of the Bachelor of Education degree programme made the University of Nairobi's deans to come up with a committee to look into the programme in 1978. It found that the products of the programme, lacked content knowledge on the subjects they were expected to teach at the secondary school level. It attributed this to poor content coverage in the programme. The committee also found out that there was a weak linkage between the subject methods courses and the content at the secondary school level (University of Nairobi, 1979 cited in Karugu, 2007). It came up with a raft of suggestions to address the problems. The key ones were: review of the programme; linking of the programme to the secondary school curriculum; incorporation of the secondary school content in the programme; and finally, increasing the duration of the B.Ed programme to allow for adequate time to cover content and pedagogical knowledge. Some of these suggestions were implemented.

The 1980s witnessed expansion of higher education in the country. Teacher education equally expanded. Moi University, established in 1984 thus becoming the second public university in Kenya, admitted the first cohort of Bachelor of education students in Arts from 1987. Egerton, which had become a fully- fledged university in 1986, expanded its teacher education degree programmes to the Arts and Sciences as it continued the programmes in the agricultural education areas. Kenyatta University College became a fully-fledged university in 1985 while Maseno University (also with a large undergraduate student population enrolled in education) got a charter in 1999 (Sifuna, Chege & Oanda, 2006).

The expansion in teacher education programmes was meant to address the high demand of teachers at the secondary school level. This demand was to be a feature of the country's manpower needs to the 2000's. By 2006, all the public and private universities had an enrolment of 58,000. A large number of these were taking education. The introduction of module two programmes in the public universities further flung the gates of higher education wide open to many students. These programmes took the model of both full-time and part- time. Many teachers were enrolled in the latter. They took the in-service course during the school holidays. High enrolment was registered in both under- graduate and graduate courses in teacher education hence bringing a phenomenal growth in teacher education at the higher education level. Currently, there are over 70 higher education institutions. Many of these have teacher education courses in their curriculum **(Lumalas & Kimengi, 2010).**

In most universities in Kenya, the duration of teacher education programmes in Higher Education has been majorly dictated by the system of education in place. Since independence, the country has had three systems. The first one, which was a product of the Ominde education commission of 1964 (the 7-4-2-3 system) saw undergraduate courses in teacher education take three years. This system was changed in 1985 to the 8-4-4 where the duration of the under-graduate course now took four years. From 2022, in the competence-based curriculum, teacher education in higher education will take at least three years. Throughout the independence period, Masters, and Doctor of philosophy degree courses have taken a minimum of two and three years respectively. At all levels in higher education, teacher education has covered both Arts and Science based disciplines.

The curriculum in most universities offering teacher education have tended to be somewhat similar due to many of the products being prepared to teach in secondary schools and other tertiary institutions in the country. Some universities such as Maseno University have since added an Information and Communication (ICT) component to all their under-graduate teacher education programmes. Others such as Moi University, have introduced a course in Information technology in their curricula as a core course to all student-teachers in the first year of study. The student-teachers also take many content courses in their two teaching subjects in the four-year period. Each university, to say the least, has enriched its programme in one way or the other, to keep afloat in the competitive market the country has become. Unfortunately, all these have met with

many challenges. The main one being limited infrastructure for ICT which has been made worse by high enrolment e.g in the 2009/10 academic year, enrolment in both public and private universities stood at 196,931 (Republic of Kenya, 2012).

Today, higher education and by extension teacher education, is plagued by many challenges. Republic of Kenya (2012) enumerates the following: access, equity, quality, relevance, financing, gender and regional disparities, faculty quality, and inadequate human resource. Specifically, these include lack of capacity to cater for the growing demand of access to university education; mismatch between skills acquired by university graduates and the demands of industry; an imbalance between the number of students studying science-and arts-based courses; rigid admission criteria which restricts credit transfers between universities, and graduates from other post-secondary institutions; and gender and regional disparities.

These challenges can be divided into institutional based (within the university) and extra institutional based (outside the university). Nasimiyu (2017) observes that the challenges have impacted negatively on the preparation of teachers in Kenya's institutions of higher learning. She adds that they are real and demand urgent attention from the stakeholders. Generally, the challenges as pointed out by Bosire (1995) can further be categorized in nature into philosophical, financial, infrastructural, administrative, educational and logistical. These are what were established by Nasimiyu (2017) and enumerated as inadequacy of the duration of preparing teachers, understaffing, poor/inappropriate facilities and resources, inappropriate curriculum and mismanagement. Similar views have been echoed by Kafu (2017) who has extended the argument further by calling for teacher education to be conceptualized beyond teacher preparation and production as currently held in Africa. It's due to these misgivings that the status of teacher education in Africa has been aptly captured by Chang'ach (2016) thus:

African countries have not made serious effort to review teacher education program to give it the paradigm shift it needs. It has remained irrelevant to the changing times in Africa. This is a big catastrophe to this great continent. Consequently, the teacher education program has to a large extent under-developed Africa by producing incompetent school teachers who are incapable of inspiring and preparing the society for the desired development. This has impeded meaningful development that would make Africa not only a competitive but comparable region to others on the globe in this sphere. This fact combined with the failure to embrace modern technologies and globalization in teacher education has made the program irrelevant and ineffective in modern technological era.(p1)

Today, even though there is no explicit course on teacher education in Kenya, elements of teacher education have been ably captured in the teacher courses offered in higher education for varied curriculum levels. This has been the practice since the inception of teacher preparation and development programmes from the colonial period. The elements of teacher education are found in the early years, primary and secondary teacher education programmes. Special education needs and guidance and counseling, vocational and technical and tertiary (university) have equally been catered for. In all the programmes, teaching practicum which takes a whole school term for most universities in Kenya is compulsory. This paper conceptualizes teacher education as being an embodiment of both pedagogical and content knowledge in the preparation of teachers across curriculum levels and continuous professional development in the teaching career in both the formal and non-formal education sectors.

2.The status of teacher education in the Kenyan Higher Education sector: insider-outsider perspective

Some of Kenya's teacher education programmes are part and parcel of its Higher Education sector. This makes it be a party to the opportunities and challenges of the sector. Most of these are not peculiar to those found in other parts of Africa. Ndaloh (2020) enumerates the following: low morale of staff due to poor terms and conditions of service, corruption and mismanagement, poor research culture, poor student supervision and mentorship, dilapidated and obsolete infrastructure, inadequate finance, bloated workforce in the non-academic division and in-adequate instructional resources. Similar views have been expressed by other scholars. Ngome (2003, p359) captures the situation succinctly:

In Kenya, as in other African countries, higher education is in deep crisis. A review of pertinent data shows declining public expenditure on higher education, deteriorating teaching conditions, gross over employment in universities, decaying educational infrastructure and facilities, an increasing rate of unemployment among university graduates, a mass exodus of experienced and competent lecturers, shortage of adequate opportunities for thousands of young people seeking higher education, the absence of academic freedom and a decline in the quality of university graduates.

Studies that have been undertaken in the higher education sector have confirmed that indeed, the higher education sector is plagued by challenges of high magnitude proportions in virtually all dimensions as can be supported by the findings of the two scholars cited above and others. Such studies have included Odhiambo, 2013; Yakaboski & Nolan, 2011; Kagondu & Marwa, 2017
Okebiro & Gesora, un-dated; Otieno, 2009 & Oanda & Jowi, 2012.

These challenges are not peculiar to the Kenyan situation, (Yigezu, 2015; Ezenwagu, Nnorom & Nwankwo, 2020). An examination of the status of Kenya's teacher education programme should thus be contextualized from the background of its higher education generally. The prospects and challenges of the higher education are thus mirrored in the teacher education programmes. Kenya's teacher education programmes in the higher education sector as we have already observed, targets the early years, primary and secondary education levels. There is need for an explicit course on teacher education in higher education. This has attracted attention of some teacher educators. Kafu (2017) observes that as a concept, teacher education in Africa is much misunderstood, misconstrued and misplaced due to being narrowed to basically the training of teachers. He argues that such a position is an under–estimation of the programme as it reduces it to early years, primary, secondary, technical and vocational education, and university education sectors. According to the scholar, Teacher education programme is the driver of the former. This makes teacher education programmes in the continent, Kenya included, poorly conceptualized. Kafu (2017) reports that even though this has been the situation, there is a shift to broadening the concept to teacher preparation. However, for purposes of this paper, we adopt the concept of teacher education that is in vogue in Africa. All programmes in our Higher Education which seek to prepare teachers across the curriculum levels are considered to constitute teacher education. This does not in any way negate the argument put forward by teacher educators as propounded by Kafu and others of his ilk.

Currently in Kenya, the teacher education curriculum covers curriculum, instruction and educational media, psychology, management and foundational content. The candidates also take advanced content related to the teaching subjects in the levels they intend to teach. In addition, student-teachers in some programmes are also taken through specialized areas such as how to handle learners with special education needs, technology/technical education, guidance and counseling, and adult and continuing education. These are spread across the entire life of the period a student-teacher undertakes the course. Teacher education programmes hence equip the candidates with both content and pedagogical knowledge. Through these, prospective/practicing teachers are expected to acquire the requisite knowledge, skills and desirable attitudes. Writing about teachers and teaching in Africa, Awosom (2009) argues that for teachers to teach with confidence, precision and competence, they must possess good subject matter, knowledge of professional skill or know-how and appropriate moral values. It is this argument that has informed Kenya's teacher education programme in Higher education today. However, it should not be lost to us the fact that, teacher education programmes in Kenya have not escaped challenges in their curriculum as Ong'ondo (2017, p.152) observes:

Since the mid-seventies, (Kenyan) teacher education curriculum has remained narrow and rigid in nature and scope. It emphasizes the training rather than the preparation of teachers. There has been no attempt to make it responsive to the emerging trends in the society in general and education in particular. Consequently, it has continued to produce conservative/traditional school teachers who are pervasive to change, less creative and innovative, and unable to manage modern instructional and non-instructional institutions.

Kenya's higher education teacher preparation and development programmes are spread in the Bachelor of education degree in arts and science; technology education; special needs education (primary, secondary and technology); guidance and counseling; early childhood education and development; primary education; adult and continuing education; and agricultural education and extension. These programmes take duration of four years in the current 8-4-4 system of education but are expected to change as the country's teacher education is expected to shift to the competence-based curriculum in late 2022.

Teacher education has not escaped the expansion that higher education in Kenya has undergone over the years. This has been seen in the number of institutions and student-teacher enrolment across the country with a concomitant impact on quality. Oanda and Jowi (2012) have established that the dilemmas and pitfalls in the sector are: lack of qualified teaching staff, limited finance, miss-match between the courses offered and market need and inadequate facilities. All these shortcomings have compromised the quality of services provided in the institutions. Otieno (2009) further adds low morale of staff due to low salaries, erratic promotion practices and insufficient funding for research, over-enrolment and weak communication systems due to bureaucratic demands. Partly, these have occasioned the problem of academic brain drain which is a common feature in the country (Odhiambo, 2013)

Teacher education programmes in higher education have not solely been characterized by pit-falls and miss-steps. There abound success stories in the programmes too. Faculties of education have constantly

reviewed their curriculum to make them correspond to the changing needs of the society. Otunga (2010) reports that, the stiff competition among the Kenyan universities in itself, makes them self-regulating thus serves as a check on un-popular programmes. However, what has lacked is respect for some of the reforms at implementation. What we have thus in these institutions is what we may describe as curriculum development without curriculums. This remains the bane of curriculum reforms in higher education and by extension, teacher education programmes.

Kenya's teacher education programmes have been geared towards development of skilled manpower. Kafu (2017) avers that the programmes have been developed and administered with this objective in mind even though some miss- steps have been witnessed along the way. Today, Kenya's teacher education programme has given forth to several specializations as we have noted in the previous sub-sections of this paper. Products of this programme transcend the curriculum levels in the education landscape. The number of disciplines and issues covered has equally substantially expanded. This has greatly enhanced the quality of the student-teachers with both content and pedagogical knowledge.

At independence, the country had a limited number of undergraduates and postgraduate degree-holding teachers. This is in sharp contrast to today where graduate teachers straddle the teaching profession across the curriculum levels. The bachelor's degree is the dominant qualification of most teachers. Many also have higher degrees in teacher education. This should translate to effective teaching in schools and colleges where the products are engaged.

However, as we have already noted, Kenya's higher education sector has its good share of "lemons". Aside from these, there have been those that are unique to teacher education. Combined, they have hampered the quality of teacher preparation ventures in these institutions. First, anecdotal observation confirms the existence of obsolete courses in the enriched curriculum. Further to this is atomization of courses and programmes due to the need to cash-in on the financial returns occasioned by the Module Two programmes. These were brought by the high demand for higher education in the 2000's which saw the public universities flung their gates wide open to self-sponsored students. Omanga (2019) partly hints at this by observing that in most public universities, programmes and courses have been duplicated within and across the institutions. Enrolment sharply rose e.g., in 2006 there were 112,229 students in both public and private universities, this number had shot to 180,978 by 2010

(Republic of Kenya, 2012, p.21).The atomization of courses and massification of programmes has had a negative impact on quality. As Ntarangwi (2020, p.10) points out:

In a number of cases, universities have few academic staff with highest degrees in their field, which translates to some programmes not having adequate subject matter experts to lead them and offer the necessary guidance, leadership and mentoring.

Teacher education programmes have been a victim of this problem. This has partly informed the criticisms of the Bachelor of Education Arts and Science programmes in some universities as lacking enough content courses. Karugu (2006) reports that, the Bachelor of Education degree has persistently been criticized for not providing adequate time between coverage of content and pedagogical courses hence inviting calls for the extension of the duration of the programme with a year. In one university, this has seen introduction of parallel programmes in Bachelor of Arts and Science with Education where student- teachers take more content courses. Although this has created confusion in the market, it has allayed the fears of in-adequate content in the teacher education programme. The jury is however still out whether the products of the former (which is a more or less a hang-over of the consecutive approach) produces teachers grounded in content knowledge than the other. Moreover, a study done in Zambia by Banja & Mulenga (2019) allude to the fact that the concurrent model to teacher preparation have been questioned on focusing on subject content knowledge at the expense of pedagogical knowledge. This raises further confusion to this debate as the two programmes are in this model. Little wonder, in a study done by Ong'ondo (2017) established that student-teachers have acquired procedural knowledge but failed to develop pedagogical reasoning. This reasoning touches on principles and practices of teaching which are crucial in effective teaching. What is needed in teacher preparation is a curriculum which strikes a balance between subject content and pedagogy. Fortunately, although we shouldn't be complacent by this, Kenyan teachers ranked higher than South Africa's and many other countries on subject knowledge in a survey of teachers in sub-Saharan Africa (Taylor, Deacon & Robinson, 2019). Quality is critical in teacher preparation. Guerriero (nd) points out that expertise teachers are characterized by possession of extensive pedagogical content knowledge, better problem-solving strategies, better adaptation for diverse learners, better decision-making, better perception of classroom events, greater sensitivity to content and greater respect for students. This assertion underscores the central role played by pedagogical content knowledge in teaching. Nonetheless this paper is cognizant of the vital role played by experiential practices from the classroom in improving teacher quality. While teacher knowledge is taken as a crucial component of

teacher professionalism, professional competence involves an inter-play of variables other than just knowledge. Skills, desirable attitudes and values, and motivational levels, equally play a big role to effective teaching which is what teacher education in higher education partly seeks to attain. Lack of pedagogical content knowledge in the products of teacher preparation in higher education is thus to say the least, a major blot to quality of the programmes. More so considering the close nexus between it and teacher technological knowledge where remote learning is domiciled. It is time the teacher education curriculum, which have been found to be inappropriate by studies such as Nasimiyu (2017), Ketitia (2015), Karugu (2007) and Kafu (2011) which has isolated lack of a robust ethics of teaching in the curriculum, are given consideration. In fact, studies done elsewhere in Africa such as in Zambia by Banja and Mulenga (2019), India (Naik, nd) and Ethiopia (Olkaba, Hunde, Mamo, Duressa & Keno, 2019) have established that the curriculum of teacher education is totally out of sync with the secondary school curriculum where the student-teachers are being prepared to implement thereby making the candidates have difficulties doing the same. It is probable that the same may be the situation in Kenya. The proposal made by Katitia (2015) of teachers in the 21st century being grounded in both content and pedagogical knowledge is worth a serious thought in the Kenyan teacher preparation today. Moreover, both content and pedagogical knowledge are of essence in effective teaching (Taylor, Deacon & Robinson, 2019).

Higher education has grappled with the issue of dilapidated infrastructure and obsolete resources for many years. Republic of Kenya (2012:108) cites inadequate facilities and appropriate teaching and learning environment as some of the major challenges of quality and relevance facing university education in Kenya. This has greatly hampered the quality of programmes in the sector. There is shortage of classroom space, spacious and well-stocked libraries, basic laboratories, and inadequate and even at times obsolete, in-available instructional resources. Nasimiyu (2017) and Kafu (2017) have pointed out the poor status of facilities and resources in the preparation of teachers in higher education. Kafu (2011, p.48) concludes thus:

The issue of facilities and resources for preparing school teachers is critical. The status of current materials for preparing school teachers is pathetic. These are in- adequate, obsolete, dilapidated, and unsuitable for producing a competent teacher who can operate in this century. This state of affairs raises concern about the quality of teachers serving in the school system and has negatively affected the image of these teachers (self-esteem and how the society views them) and their integrity.

Other studies have equally reached the same verdict (see Otieno, nd. and Katitia, 2015). These resources are a mockery for the enhancement of learning they are expected to facilitate. Similar findings have been reported in other parts of Africa (Banja& Mulenga, 2019 and Elom & Adesoji, 2019).

Studies that have focused on management and governance in higher education have established there is a crisis in the area. Gaps have been identified in leadership processes. Kogundu and Marwa (2017) found out that out of the issues impacting negatively on quality in higher education institutions, management and governance topped the list. Cascaded to teacher education, this should be looked at from the position of how issues of teacher education are dealt with by the curriculum leadership in the higher institutions across the country. Firstly, there lacks a department whose mission is solely charged with teacher education in our universities. The nearest to this is what in some institutions is known as Centre for Teacher Education. Unfortunately, its functions run counter to what is expected of an organ charged with issues of teacher education. It is possible that the management and governance dimension in teacher education is what made Nasimiyu (2017) to conclude in her study that the faculties/schools of education in higher education were faced with the challenge of mis-management, something that has partly contributed to the poor preparation of teachers in the country. Added to what Oanda and Jowi (2012) calls the ethnic territorialization of Kenyan universities, whose mode of selection of appointment to leadership is ethnic based, the fears of poor quality of governance are not miss-placed in teacher education programmes in higher education.

The status of Kenya's higher education teacher preparation programmes is a mixed bag. It has quite a good number of positives and negatives in the following areas: perception, curriculum, facilities and resources, and governance. These areas are crucial in enhancement of quality in teacher preparation in higher education and should thus be treated with attention by policy makers and curriculum leaders.

3. Approaches of teacher preparation in the Kenyan higher education sector

Since independence, Kenya's higher education teacher preparation programme has taken two approaches: pre-service and in-service/sandwich. Both have followed the concurrent model thus giving both the consecutive and connected models a wide bearth. The two approaches have been at the vanguard of teacher supply to the country's manpower. Research findings support the fact that a well-grounded teacher on pedagogical and content knowledge are better predisposed to facilitate learning, (Olson, 2000). This is what has informed the country's higher education's teacher preparation programme. However, despite the demands of

the 21st century which have placed digitization at the core of human development, the programmes have largely remained face-to-face. Except for some in-service programmes which have incorporated some aspects of distance education which has entailed correspondence-cum-contact approach, remote learning in teacher preparation in the country remains unchartered territory.

However, the market today yearns for a teaching force that is tech-savvy hence demands a change to how teacher preparation programmes are organized. All this should take place in a complex, interconnected technological world, (Shulman, 2006). This makes the current practices in teacher preparation programmes ill-equipped to handle the demands of the 21st century. That aside, the two approaches to teacher preparation entail a mandatory number of course coverage/contact or credit hours. A student teacher must also partake of a teaching practicum to enable the candidate to experience of the real school situation. The practicum takes at least three months in a student-teacher's learning institution of choice so long as the institution is acceptable to the university where one is enrolled. Ideally, the student-teacher completes the teaching placement under the direction of a supervising teacher/mentor and constant supervision from teacher-educators from the respective institution. However, the mentorship programmes are not well established. Mentorship provides support, encouragement, counseling, and guidance to the student- teachers, (Blase, 2009). This makes them improve their instructional knowledge and skills. Many challenges equally abound from the mentorship arrangement, A few are: lack of time; in-availability of the mentees; ill-prepared mentors; and mentors with narrow views about their role (Norman& Felman-Nemser, 2005; Smith & Ingersoll, 2003 and Johnson et al., 2004 cited in Blasé, 2009).

The two approaches have their unique strengths and limitations. Pre-service programmes are more relaxed and accord the candidates with ample time to interact with peers and teacher-educators. However, the in-service programme has been the port of call to teachers who are in service who aspire to advance their qualifications in the teaching profession.

From the foregoing, the main features of Kenya's teacher education programmes in higher education sector are: face-to-face student-teacher interaction with the facilitator, use of both traditional and modern technologies in instruction, incorporation of mentorship through the use of a supervising teacher during practicum, extended student-teacher clinical experience of supervised practicum and student teaching opportunities, use of the concurrent model to teacher preparation and finally, certification.

4. Kenya's higher education teacher preparation programmes in relationship to the 21st century skills: new wine in new wineskins?

Africa, like other parts of the world is at the cusp of the fourth industrial revolution. This is a period where the use of digital technology and emotional intelligence characterized by soft skills bestrode professions. Teacher preparation in higher education must thus take cognizance of this. The 21st century skills should form the mirror upon which the soft skills should be contextualized. These programmes are tailored along producing highly knowledgeable and well-equipped personnel in both content and pedagogical dimensions. Due to the demands of the present society, they should be equally judged against the 21st century skills.

The higher education sector should lead in domesticating its curriculum to these skills. Unfortunately, from anecdotal observations, little or nothing is happening in the Kenyan universities today towards this. Teacher preparation programmes in higher education are still designed without the 21st century skills in mind.

Doing this requires curriculum reforms. Changes to the curriculum should go in tandem with infrastructural and resource changes. Instructional resources should be customized to the 21st century skills. Teacher-educators should equally be re-tooled with a view to making them embrace the philosophy and practices of teaching that encourage the promotion of the 21st century skills, other soft-skills, and use of emotional intelligence in teacher education.

Griffin, McGraw and Care (2012) lists the 21st century skills into four broad groups of: ways of thinking which comprises of creativity and innovation;

critical thinking; problem solving and decision-making; and, learning to learn (meta-cognition); ways of working under which are found communication and collaboration (teamwork); tools for working where ICT literacy and information literacy are domiciled; and lastly, living in the world which comprises citizenship (local and global), life and career, and finally, personal responsibility- including cultural awareness and competence. These skills have been summed up into knowledge of core subjects, 21st century themes, learning and innovation skills, information, media and technology skills, and finally, life and career skills, (Morrison &Lowther, 2010). All these are vital for the teacher of the

21st century in higher education at work and life. Creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem-solving, and decision-making coupled

with digital citizenship and technology operations and concepts are vital in a teacher's daily professional practice hence should be integrated in the teacher education curriculum at the higher education level.

Even though some aspects of these skills are embedded in the current teacher education curriculum, it is of utmost importance to make them explicit in the curriculum offered in teacher preparation so that they can be given prominence during implementation. This is a daunting task, but it can be done where there is a will among policy makers and curriculum implementers. It is high time the knowledge and skills are given room in our teacher preparation programmes. These ten skills are crucial in the student-teachers' immediate life and after. They greatly help in the attainment of objectives/outcomes of the teacher education programmes to enable candidates facilitate learning. This calls for a change in the teacher education curriculum in higher education in Kenya. We concur with Chege (2020, p.15) that curriculum reforms:

[Should be designed] with the needs of a fast-evolving world and thus arm future graduates with the skills needed to address real life issues. It also increases the employability of students who now possess a host of skills sought after in the competitive job market.

The reforms should thus form a crucial part in the teacher education curriculum in higher education. These skills have far-reaching implications in the worlds of education and work today. Educators need to prepare adequately for the technological revolution coursing the world today. Africa can only leapfrog over its development hurdles through the help of technology which must be embedded strongly in learning across curriculum levels and sectors. Morsy (2020) reports that that there is a growing miss-match between businesses' evolving demands and the skills furnished by African education systems. This should awaken the policy makers' desire to align the curriculum of teacher education to the 21st century skills an urgent imperative in in Kenya.

5. Blended learning as a component of teacher preparation in Kenya's higher education sector: opportunities and challenges.

The 21st century demands a shift from the teacher-centred to student-centred instruction. This type of instruction is characterized by learner formulation of problems, collection of information/data, organizing and manipulating the information/data, and formulating the answer. It is this which forms the gist of Prof Erica McWilliam's argument that today, teachers have gone through a sea- size transformation in how they conduct their business from being a sage on stage through a guide on the side to being a meddler in the middle. This approach must begin in teacher education before it cascades to schools. There are three theoretical bases for student centred learning according to Morrison and Lowther (2010). These are: emphasizing understanding one's world rather than mimicking; striving to reduce discrepancies between what the learner knows and what is being observed; and finally, refining one's knowledge through negotiations with others and evaluating one's understanding. Today's teacher is a designer, facilitator and classroom manager and should thus muster diverse skills and knowledge to work with utmost ease (Morrison & Lowther,

201) The student-teacher/learner on the other hand, should be actively involved in the instructional process through a variety of ways and be a researcher. These equally bestows immense responsibilities on him/her. Teaching is thus quite a challenging task in this age as it is largely driven by technology represented mainly by digitization.

Digital intelligence, an essential component of digitization, operates side by side with both the traditional intelligence and emotional intelligence. Teachers need to be resilient in their day-to-day work hence require digital intelligence. The modern learner should be well equipped with digital skills to compete favourably in today's world. Teachers are bound to master and utilize basic digital tools such as computers, smartphones, in-built software and conference facilities to enhance their productivity. The World Economic Forum cited in Baker (2020) mentions the following digital skills that are vital in the world of work today: digital identity; digital use; digital safety; digital security; digital emotional intelligence; digital communication; digital literacy; and digital rights. These skills are vital in enabling the digital natives access the services and opportunities available in the digital spaces. Teacher preparation programmes should thus expose the student-teachers to these opportunities so that they are able to fit well in today's classrooms. Technology today enables us to connect with one another, share information and resources, and come up with collective solutions to our problems. Teachers can't afford to be left behind in these opportunities. This should inform our teacher preparation programmes.

Generally, the 21st century demands that technology in learning be given prominence. This is in sharp contrast to the position we have observed in the preceding sections of this paper which have isolated the face-to-face interaction as being the popular approach to teacher preparation in higher education in Kenya. It is time higher education embraced the hybrid/blended learning mode in teacher preparation. Teachers should have knowledge of and expertise in information and communication technology to participate meaningfully in the hybrid/blended learning mode of instruction. Understanding of the purposes and potential of technology in learning is equally important. Learning today should be viewed as being situated and distributed and this is what the blended/hybrid mode of teacher preparation is meant to achieve. Cowie and Jones (2009, p.792) observe that:

ICT technologies have the potential to support current goals for education including those of collaboration, reflection, knowledge synthesis and creation, and the development of the skills and dispositions for life- long learning. This said, we are only beginning to consider the challenges this poses for schools as social organizations. Research and development studies on teacher use of the internet, interactive whiteboards, games and immersive participatory simulations, and personal mobile ICT devices have illuminated some of the possibilities.

Even though they were observing this on New Zealand teachers, it is equally apt for the Kenyan teacher population where similar calls exist (Kivati, 2017). This should explain why blended/hybrid mode of teacher preparation should be part and parcel of our teacher education programmes. What makes this an imperative is that technology has become our way of life hence must be reflected in whatever we do at home and at work. ICT integration in a teacher's professional life should be the norm in the current dispensation. Teachers need to play a pivotal role in mediating the use of technology to support student learning and learning to learn. This explains why digital learning should equally take the centre stage in teacher preparation programmes in higher education in Kenya today through the blended/hybrid learning mode. Remoteness in learning has its good share of strengths that the Kenyan educations' sector needs to exploit. It is actually a low-lying fruit in the country's manpower development.

The market today, as Tucker (2012) opines, requires teachers with the following attributes: creative, effective communication skills; critical thinking abilities; creativity; problem-solving skills; and collaborative abilities; technological savvy; and innovative abilities. This demand that the student be at the centre of learning and this can only be realized when the pedagogical principles and practices are designed with this in mind from the teacher preparation programmes to the classroom. Technology provides the time and flexibility that lacks in the face-to-face mode of teacher preparation that has dominated the Kenyan higher education sector. The blended/hybrid model is more collaborative. It values each voice in the classroom as a vital cog in the wheel in the collective learning process, (Tucker, 2012). Technology should be engaging, interactive, facilitative and instructionally appropriate in order to achieve the desired outcomes. The 21st century classroom is characterized by educators' use of technologies to avail material in an accessible and engaging manner, and this is what the blended/hybrid mode demands. Such a classroom is student-centred, prioritizes student interaction, and encourages communication and collaboration in a variety of ways. The flow of information should bounce from student to student, teacher to student, and student to teacher in a focused and meaningful manner. This has lacked in Kenya's teacher preparation programmes.

Blended/hybrid learning is a mode of learning which combines face-to-face instruction with an on-line component. There is a spectrum to teaching sub- modes in this approach to teaching. The mode has been borne out of increased access to technology. The earlier it is embraced in teacher preparation programmes in higher education in Kenya, the better due to the present society's proclivity to technology enhanced learning as the ICT revolution becomes a reality in virtually every part of the world. Tucker (2012, p.12) offers the merits of blended learning thus:

Blended learning provides teachers and students with flexibility. Teachers can design lessons that weave the best of traditional instruction with the unique benefits of an on-line component to achieve optimal learning outcomes for all students. This frees teachers from the perpetual race against the bell. Instead of jamming huge amounts of curriculum into one class period, teachers can complement their in-class instruction with an on-line component to make work done at home more meaningful. Lessons can begin in class and continue on-line and vice versa. The trick for the instructor is to weave these two instructional mediums together.

There are six common blended learning models according to Horn and Heather (n.d.) cited in Tucker (2012). These are: face-to-face driver, rotation, flex, on-line lab, self-blend and on-line driver. All these models can readily be used in teacher preparation at the higher education sector in Kenya. Each has its unique strengths and limitations. It is upon the teacher educators and policy makers to select the one which best suits their situation. The ultimate goal in any blended learning approach should be to allow the teacher educator to continue engaging with student teachers and make use of an on-line component to develop a learning

community which works to discover knowledge (Horn & Heather, nd, in Tucker, 2012). Participants are able to get the best of both modes. We have to accept that teaching is evolving, and technology is an important cog of that wheel. Teacher preparation should thus, not be an exception. Blended learning has several benefits which it can bring to teacher preparation in higher education in Kenya.

By adopting blended/hybrid learning, teacher educators should encourage the use of the flipped classroom/reverse instruction. This is where some aspects of the course are delivered on-line so that class time can be used for group discussion. Flipping instruction will free the educators' time for group work and other classroom pedagogical demands.

Remote learning, which is a major component of the blended/hybrid mode, usually has its good share of challenges from planning to execution. Both the teacher-educators and student-teachers are bound to face these. Nonetheless, it has its good share of conveniences to the participants. We should not shy away from technology enhanced learning in teacher preparation in higher education. Its potential for transformative teaching and learning can't be gain-said. Besides, its contribution to the attainment of the 21st century skills is assured. Teacher education programmes aim at producing effective teachers and this is why embracing technological changes in higher education portends well for the teaching profession in Kenya. Teaching with technology is the new normal in today's world.

Many student-teachers and teacher-educators are digital natives and should thus not find blended/hybrid learning challenging. What universities should do is simply to develop the relevant infrastructure and initiate professional development programmes for their faculty. Luckily, most of these institutions already have schools and/or departments that deal with technology related courses. Some are even found in the schools of education themselves. This should give them an advantage. Of course, technical issues should also be addressed to make this mode of learning effective in Kenya's higher learning institutions.

Scholars have grappled with the issue of quality in teacher education programmes in Kenya. Many have recommended the incorporation of ICT skills in the programmes. Momanyi (2012) observes that this will enrich the teacher preparation and make the products comfortably undertake their teaching responsibilities. She points out the challenges facing teachers today. Some of these have roots in teacher preparation which she suggests can be ameliorated by use of modern technology. Similar calls have been made by other scholars (Agalo, 2004; Omulando, 2008; Mukwa, 2007; Too, 2020)

For many years, teacher educators have called for the incorporation of ICT in teacher preparation. Mukwa (2007) has pointed out the potential of modern technology in enhancing quality and cost of the programme. He singles out how digital technology can be used in the micro-teaching component of teacher preparation. However, he raises the challenge of skill and poor infrastructural and resource base of the universities in adopting the modern technology in teacher preparation. The issue of ICT in teacher preparation has dominated the higher education discourse as reflected in reports and findings of many other scholars (Too, 2020; Kivati, 2017; Kafu, 2017; Shiundu, 2015; Otunga, 2015 and Otunga, 2010). Kafu (2017, p.66) captures the issue aptly:

However, the challenge of educational facilities and resources in the fulfillment of the mission of teacher education programme in modern Africa is that most of these materials are not readily available or if available, they are not relevant, adequate, varied and in good working conditions. Besides, the available items are usually not quite relevant for use and appropriate for the needs of creating and developing the modern society in Africa. That these materials are not proper for initiating, creating and nurturing the desired society and its development agenda in modern Africa.

It is against this background that calls have been made for investment in teacher preparation programmes in higher education to address the issue of resources and other constraints (Kafu, 2017; Omanga, 2020; Nasimiyu, 2017; Otieno, nd; and Auerswald & Magambo, nd).Some of these calls have been informed by the essence of remote learning in the field of higher education today. Too (2020, p.7) underscores this in the wake of the Covid-19 pandemic in the world to the institutions thus:

The reality is that the digital teaching and learning system is not going to be an option, but mandatory. And the consequences of those who will not adapt to the dictates of the prevailing circumstances might be too dire to contemplate.

Many other scholars, especially in the light of the covid-19 pandemic have argued for the same. Calls have been made for a digital transformation in all facets of life. Institutions have been called to expand and broaden digital offerings, foster an enabling environment for rapid digitization and speed up infrastructure investment (Abdella, 2020; Otieno, nd, Kafu, 2011; Odhiambo,

2013, Sifuna & Sawamura, nd, and Rena,2010).Higher education institutions should not be left behind in this digital shift to support Africa's engagement in the fourth industrial revolution. This is why the blended/hybrid learning mode in teacher preparation programmes at the higher education sector is an idea whose time has arrived.

However, a challenge remains competency of the teacher-educators. Too (2020:7) comments on the challenge in the wake of the covid-19 pandemic to the higher institutions of learnings' on-line programmes thus:

It is evident from these cases, that academic staff needs training, not only on how to operate these gadgets, but also on pedagogic skills of planning and delivery of content. For instance, a typical two-hour lecture has to be well- packaged into a one-hour virtual presentation. The bulk of the content could be covered through guided individualized readings. The content should be broken down into simplified short learning units with assignments and references for further reading. Lecturers should avoid clogging the system with raw notes extracted from books or websites that have not been reviewed.

Coupled with the poor resource base of the universities, especially in instructional resources, blended/hybrid learning in these institutions requires huge financial investment. Issues of laptops, smartphones, internet connectivity and other accessories for digital learning must be accessible to the student- teachers and faculty on campus and outside campus. This is a daunting task in Kenya, where some parts still are away from the electricity grid. Nonetheless, there is no choice. Blended learning is the surest way to Kenyan faculties of education helping the United Nations Organisation in the attainment of the fourth sustainable development goal of "ensuring inclusive and equitable quality education and promoting life-long learning opportunities for all". Kenya should marshal its resources and forge partnerships with local and external partners to make blended/hybrid learning mode a feature of its teacher education programme in the higher education sector.

6. Conclusions and recommendations

This paper concludes that the prospects for introduction of the blended/hybrid learning mode to teacher preparation in the higher education sector in Kenya, although faced with many hurdles, is good. What should be done by stakeholders is to find a way of mitigating these challenges. This should include making reforms in the curriculum, increasing investment to the sector so as to build the infrastructure and resource-base, building the capacity of the faculty and changing the instructional approaches in teacher preparation at the higher education level. The government should also address the issue of internet connectivity in the country. Otherwise, it is the contention of this paper that the time for blended/hybrid learning mode in teacher preparation in Kenya, and by extension Africa, is now.

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