

Higher Education and Production of Knowledge: Will research Enhance Effective Teaching, Learning, and Knowledge Critical to Africa' s Development?

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Abstract

Academics at higher institutions are expected to conduct research critical to effective teaching, knowledge production, and community development. However, in Africa, research seems to be more motivated by promotion than by problem-solving initiatives. This has left a gap in effective teaching at the higher education level since most academics appear to be more interested in research than teaching, as their career advancement depends on the former. According to evidence, research motivated by promotion contributes far less to effective learning and critical understanding than research-driven by problem-solving initiatives. This disparity appears to be impeding African universities' ability to contribute successfully to the global knowledge economy. Despite this, Africa's university system is affected by a lack of funding, administrative bottlenecks, outdated teaching techniques, and a lack of research capabilities. To address these problems and produce knowledge critical to Africa's future, most African institutions, including those in South Africa, have developed several research entities, scholarships, fellowships, and training programs. These platforms allow academics to conduct research, teach and engage in community service to address social issues and provide value to students. Although these programs are commendable, their contributions to effective teaching and critical knowledge in Africa raise concerns, which have received little attention. The article investigates how research stimulates effective learning and knowledge critical to Africa's development, using David Easton's theoretical input-output nexus, structural-functionalism and qualitative research design drawn from expert opinions interviews. The findings deepen understanding of the extent of contributions of research to effective teaching and critical knowledge. The results also provide approaches for university lecturers to improve research uptake, quality teaching, and critical knowledge. It concludes that a balance between research and teaching would rapidly enhance Africa's knowledge production for its development.

Background to the Study

Academics in African universities are supposed to be competent and driven by research and teaching, to able to produce knowledge critical not only to community development, but that of the entire continent (Bindé and Matsuura, 2005). This is because emphasis on quality research and teaching procreate knowledge that can be tapped for nation-building (Bloom et al., 2006). In contemporary world, the emphasis is now on knowledge-based economy, because knowledge outweighs revenue as a source of country's wealth (Abugre, 2018). Hence, the need for African higher education to be channeled to effective research and teaching (Mazzucato, 2013: 52). Teaching and research are interdependent, while quality research enhances effective classroom teaching, teaching promotes knowledge acquisition, production and stimulates research, Devi et al., (2020). For instance, with quality research, teaching and learning difficulties can be adequately addressed. Improvement in teaching skills of academics and learning capability of student are products of research (DHET, 2019). Similarly, teaching aids and signs that facilitate profound understanding and knowledge accumulation among student in tertiary institutions couldn't have been easy without quality research. Academics, through teaching, can easily identify problematic areas, requiring further investigation or research. This goes to show that the essence of academics and universities is quality research and teaching aimed at producing knowledge relevant to development needs (Kaliisa and Picard, 2017). With this fact, Africa is supposed to be focused on quality research and teaching in her higher educational system, as quality Higher education is key to workforce productivity and innovation (Fisher and Scott, 2011).

However, the current situation in African universities is contrary to the above, as higher institutions are laden with a weak link between research and teaching (Devi et al., 2020). In Africa, research has yielded very little to knowledge, critical to development, but more to career advancement of academics, (Nico and Peter, 2015). Too much emphasis on research outputs, irrespective of quality, as a major determinant for the promotion of academics by most African universities, has made many African academics see teaching as secondary or subsidiary to research. This adversely affect teaching and learning, and by extension, the training and impartation of knowledge (Castells, 2001). For example, most academics resort to shabby preparation for lectures, lack of teaching lesson notes, and lack of commitment to teaching (Prince et al., 2007). In some worse scenarios, they abandon lectures or delegate teaching duties to their postgraduate students or junior colleagues, who may lack knowledge of the subject. This invariably hampered knowledge acquisition and workforce productivity. For instance, the training of countries' labor force and molding of behaviors or characters of learners to become very useful and prominent in the larger society could partly be better achieved through effective exemplary teaching in higher education. Evidence indicates that student learn more from what they see, thus, the exemplary life-style and prompt teaching habit of academics can stimulate good leadership behavior in the student. However, not all universities and academics in Africa can boast of the foregoing feats or attributes, due to lack of ability to maintain a balance between research and teaching. Even with the research enthusiasm and rush, only very little is contributed to knowledge production

and societal problems, because it is more driven by promotion and not by problem-solving initiative. Gordon and Peter (2015) specifically note that African universities, are not substantially contributing global research output. This reason for this abysmal poor rating is multifaceted, but the use of it as the main determinant for promotion of academics during colonial era, is one of them (Gordon and Peter, 2015). Since, research and teaching are interdependent, problem in one, may affects the other, and this could contribute to dwindling knowledge generation crucial to Africa's development.

Measures have been put into place to redress the gap (s) in the quest of African universities and academics in knowledge production. These measures are aimed at improving both teaching and research among African universities, some of these measures are research entities or foundations, research funds and grants awarding institutions with specific research interest. For example, in South Africa, there are National Research Foundation, Human Sciences Research Council, Council for Scientific and Industrial Research among others. In Nigeria, there is Tertiary Education Trust Fund (TET fund) (Onyeike and Eseyin, 2014). In Ghana, there is the Ghana Education Trust Fund (GetFund). Other African countries, also have specific measures established to improve research and teaching. However, despite these measures, African universities' poor ratings in knowledge production economy and development, especially in quality research outputs and effective teaching still persists. (Gordon and Peter, 2015). Higher education in Africa is persistently becoming very low, compared to other continents and more often very incompatible with Africa's development needs

This has a devastating effect on the training of the work force and Africa's problem. Competent and skilled workforce depends largely on sound knowledge acquisition from tertiary institutions. It would have almost been impossible to have trained doctors, engineers, academicians, nurses, teachers, and other professional work force without effective teaching and research. Thus, Africa's low rating in knowledge production has implications for Africa's inability to address some of her challenges. For example, poverty, unemployment, insecurity, mal-nutrition, hunger, among other challenges, thrive in Africa, partly because, there are lack of adequate evidence-based research outputs. Academic research into themes such as healthcare, sustainable energy, industrial production, environment, nutrition, education and others is capable of providing the knowledge foundation required for socio-economic development (Gordon and Peter, 2015). But lack of adequate funding of research, research collaborations, genuine interests in research by academics, too-much preference for research over teaching, lack of training of academics in the art of teaching, limited numbers of academics with PhD degrees, politicization of research outputs, excessive interest of academics in university's politics, among others have largely contributed to low knowledge generation and production by African universities (Devi et al., 2020). It has also contributed to the problem of brain-drain Olumide and Wilfred (2012), poor qualities of postgraduate (M.Sc. and PhD) degree programmes, Tebeje and Denis (2016). Further, the struggling and inability of African universities to proffer solutions to problems affecting their host communities is partly due to research deficits (Matthias, 2020). One

other effect of poor research initiatives is the gross mis-match between research outputs and Africa's development needs. Thus, leading to harvest of graduates, without requisite skills and competencies needed in contemporary labor market.

It is against this backdrop, that the article examines the impact of research on effective teaching, learning, and knowledge production. The development of Africa depends on quality research that can proffer solutions to her problems and enhance effective teaching (Mazzucato, 2013; Abugre, 2018). The article contends that if adequate actions are not taken to curb deficient or poor research initiatives that is promotion-based in African universities, the quality of teaching and learning capacity would continue to decline, and Africa's development would remain elusive. The essence of this article is to advance new knowledge in the possibility of providing adequate information to African university system on the beauty and utility of balancing research and teaching as criteria for career development in African universities. This article deserves attention because, teaching is a critical component of higher education, that drives research, just like research also drives teaching, thus, placing more importance on research than teaching could devastates critical knowledge production, that are instrumental to Africa's development. Many research efforts have been conceived through interactions between lecturers and students during lecture sessions and results of such research, on the other hand, have been shared or used to teach student during lecture sessions by academics. This enhances fruitful learning by student, because research-based teaching, promotes effective learning (Devi et al., 2020). This goes to show that both reinforce each other, over reliance on research as major promotion criteria, which unduly had made most academics, haphazardly attend to their teaching duty is not healthy for Africa's quest for knowledge production economy.

While research efforts have excessively focused on positive attributes of research, such as being a tool for massive knowledge production (Gerald et al., 2015; Matthias, 2020; Abugre, 2018; Johann et al., 2015; Tracy, 2015), evidence is sparse on the negative attributes of research, such as being a tool for pushing or pulling away African academics from their teaching duty. This aspect of negativity of research, skewed specifically, to undermine teaching and learning or knowledge generation and production has received little attention. An inquiry into how research undermines teaching, will make a more significant difference from others, because, it will advance knowledge on how academics can balance their research and teaching duties and still contribute to Africa's knowledge production economy. The broad aim of this article is to assess the impact of higher education on knowledge production. It specifically focuses on how research, which is a component of higher education, influences teaching and knowledge, critical to Africa's development. Subsequently, the article uses both the input-output analysis and structural-functionalism theories to explicate operations of research in African universities and the link with teaching and production of knowledge.

For instance, the input-output analysis of the system theory, explains how the university system, being a complex whole, through its sub-units or components (lecturers, various departments, faculties, colleges among others), processes/molds/harnesses input (s)

(students, research, teaching, modules, exams, tests, assignments), into an output (s) (graduates with full knowledge and expertise, research findings/results, improved learning capacity or understanding, among others) (Fisher, 2011). This stimulates either a positive or negative feedbacks. It is positive, if the output from the university system is highly beneficial to the larger environment or society, but negative, if the society felt dissatisfied with outputs from the university. Mix reactions trailed the output of universities in Africa. The literature is exhaustive of strategies to promote greater contributions of the universities to global knowledge production. Maintaining a striking balance between research and teaching is a tool in this regard. Similarly, structural-functionalism sees the university as a structure or an organization with specific functions aimed at stabilizing the system. It argues that the system becomes unbearable and highly pressurized if structures fail to perform their functions, thus, the failure of the university system to perform its statutory functions (research, teaching, and community service) as expected, is the cause why Africa is the least continent in knowledge production (Kaliisa and Picard, 2017). This therefore, raises the following research questions: what is the motive for research uptake among African academics? What is the effect of research on teaching, learning, and knowledge? And how can academics maintain a balance between research and teaching in African universities? Following this, the article appraises the influence of research on teaching, learning, and knowledge production. It concludes with discussions on issues in research and teaching in Africa.

David Easton's (input-output) Systems Analysis and Structural-Functionalism Theory

The input-output nexus is a component of systems analysis, mainly deployed in the explanation of functioning of political systems, is aptly useful in explaining higher education and production of knowledge. Identifying universities as complex institutions, academics or researchers (Austin, 2009) call for the adoption of input-output systems approach to explaining transformation in academic activities in higher education. Systems (including the university system) consists of elements, such as inputs, channels, processes, outputs, feedbacks, and boundaries (Easton, 1965). The input consists of identified problem or issue, and supports from the environment which flows into the system, after a thorough articulation and aggregation Odeyemi and Obiyan (2018), and are harmonized or harnessed 'with input' at the conversion box, into a finished output, which in turn, stimulates positive or negative reactions or feedback (Fisher, 2011). For the university system, the input can take the form of research project, that is, social or educational issues, requiring scientific investigation, but flow into the university system through channels such as (media, student union, academic union, news, community representatives, among others), into the processing unit of the university, where issues would be articulated, aggregated and processed by various stakeholders or actors in the university system, into output (Knowledge production). This output, further stimulates positive or negative reactions from the environment. University is a knowledge production entity and some of its strategies of generating knowledge is through teaching and research (Devi et al., 2020). The input-output analysis adequately fits the explanation higher education and knowledge production using both research and teaching. First, a research problem, that is, problematic issues (social, political, health, education,

humanity among others) inherent in the environment, requiring a research, constitute the input. These issues flow into the university system through different channels (the news, report, feasibility study by academics or researchers, among others), through articulation and aggregation by actors (including academics or researchers) who actively engaged in the processing of the issues. For universities academic researchers, a thorough scientific investigation into the problems or issues in the environment is majorly one of the means of processing problematic issues into output, otherwise known as research results or findings. The outcome of any research investigation is called research output, which is centered on advancing knowledge (Kaliisa and Picard, 2017). Like Easton (1965), the output segment of systems theory stimulates feedback (both positive and negative) into the system. This is akin to positive and negative rating or ranking of contributions of African universities to global knowledge production in terms of quality research outputs. The universities in Africa, periodically, receive feedback on their research outputs from global academic environment (Gordan and Peter, 2015; Devi et al., 2020; Mattias, 2020). This feedback has been very instrumental to the re-awakening of African universities to the mandate of contributions to quality research uptake and knowledge production.

Similarly, teaching is another instrument that the university, can deploy in advancing knowledge (Austin, 2002). For example, students seeking degree qualification or certification in the university, constitute the input, as portrayed by Easton in systems theory, they came into the university through channels such as university's admission into courses of their choice, after fulfilling basic requirements of such courses. The students, through attending of classes and lectures, are subjected to different phases of processing in the university (Mahjoub, 2003). As they are handled and taught by different academics, they undergo the knowledge management process of the university system (Dalal, 2021). Academics are knowledge workers and actors in the university system, who adequately analyze, develop, and implement their curricular goals to impact knowledge on learners (Dalal, 2021). Evidence has shown that the exemplary life-style of universities teachers or lecturers have been instrumental to the display of positive behavior in learners (Cronin, 2001). Academics in the university, are part of actors involved in molding, grooming, and processing of students into a finished product (i.e., graduate), who came into the university, looking very raw, less informed, and somehow ignorant of their academic discipline (Lee, 2005). Graduates, after graduation from the university, represent the output, portrayed by Easton. This is because, at graduation, learners would have acquired knowledge, thus representing one of the goals of the university system (knowledge production) (Sabu and McDowell, 2007). Universities receives positive or negative feedback in terms of employability of their graduates and expertise of their graduates. It becomes positive feedback, when universities can adequately tap from the knowledge of their graduates or products in terms of recruiting them into available academic positions of the university. The inability of the university system to recruit from the pool of its graduates or products because of knowledge gap, represents a negative feedback. Although, it is very difficult to blame the university, on the inability of graduates to land job upon graduation, but Ejiwale (2014), opines that the university cannot be fully exonerated from the blame, because of 'skill gap', inherent in most

universities (Yashchin, 2014). The curricular of most universities are not fully aligned with workforce needs Ejiwale (2014), and this has partly contributed to the negative feedback from the environment against the university system (Schepp, 2013).

Structural-functionalism theory sees a society or system as a structure of interrelated parts specifically established to meet social needs of people in the society. Society is likened to be human body or system, made up of different parts, each performing its function to keep the human system effectively working, thus the society is composed of different structures and parts, each performing its specific function to stabilize and keep highly functioning (Spencer, 1898). These interrelated parts of the society are social institutions saddled with the responsibilities of attending to social issues or needs, religious houses, hospitals, universities, government institutions among others, are structures or institutions with specific functions, and the performance of these functions stimulate the stability of the society. Function is a recurrent activity performed by a part or an organ, within the complex whole, to keep the whole system very stable and functioning. For instance, while the function of the police is to make arrest and assist in maintenance of law and order to keep the society orderly, the judiciary, as a component part of the society is to punish violators of the society's law. The theory argues that failure of the parts to perform their functions as required, could destabilized the society and throw it into chaos, and this is called dysfunction Merton (2003). The functions of the interrelated parts are classified into what Merton (2003), described as manifest and latent functions. The results of a social process that are expected or wanted is called the manifest functions; the unsought results of social process are called latent functions. However, unwanted or undesirable results of social processes are dysfunctions (Merton, 2003). The foregoing theoretical principles and analysis fittingly explain the connection between higher education and knowledge production in Africa, including inherent challenges and how preference imbalances between research and teaching in higher education have contributed largely to dysfunctions of the university system in Africa.

The university system is a component part of the African society, saddled with the function of knowledge production. An evidence-based accounts exist that the knowledge production function of the university system, is better performed through quality research, teaching, general education, technical, and professional training (Archer, 2017). Similarly, within the university system there are interrelated parts (faculties, departments, colleges, research entities or units, schools, directorates, among others) with specific functions, if adequately performed, can stabilize not only the university system, Collini (2012), but the entire society (Carmon, 2014). For example, for African university system or higher education to effectively contribute to the global knowledge economy like its counterparts in other continents, all its components' parts must perform their functions as expected. The academics must perform their research and teaching functions as required, the university management, on the other hand, must perform its functions of providing a conducive environment for research and teaching, funding for research, provision of grants and scholarship to boost the postgraduate studies. This is akin to manifest functions (knowledge production, career development or advancement)

of the university system. The stability of the university system depends on the effective performance of functions by its various organs and interrelated parts. Thus, failure on interrelated parts within the university to execute their functions is the leading cause why African universities contribute very little to global knowledge economy (Archer, 2017; Gordon and Peter 2015; Cantoni and Yuchtman, 2013). The university is expected to produce knowledge, critical to societal development, anything short of this, is called dysfunctions, that is, undesirable results or outcomes of the university's roles in the society.

Dysfunctions in the university system are functions of many factors ranging from poor funding, skills gap and mismatch between acquired knowledge and workforce needs, Ejiwale (2014), to lack of research partnerships between the university and corporate private organizations, Archer (2017), incompetent and unqualified academics, too much emphasis on, and preference of research as a major criteria for career advancement, poor quality of research outputs, lack of interest in research and the rush to publish in predatory journal outlets by academics, excessive university politicking by academics, political capture of the university, academic dishonesty, low morale to teach and impact knowledge, lack of conducive environment for learning, teaching, and research, massification of enrolment of students, among others (Abe and Mugabo, 2021; Masaiti and Mwale, 2017). These dysfunctions combined have weakened the ability of higher education or the university system to effectively contribute to knowledge that can promote Africa's development. And this has made African universities lag behind in quality research outputs compared to other continents. In addition, academics in most African universities are saddled with administrative duties that have no bearing on research and teaching, such duties as processing of students results, attending meetings to present and defend the results, distribution of examination materials, photocopying of examination questions, among others. These duties not only stressed academics, they affect critical thinking for quality research and teaching. For example, in some universities, where academics are the one processing, presenting, and defending students results at meetings, evidence shows that academics waste a lot of time waiting for their turn, to present and defend their departmental results, in some cases, they spend days before it finally gets to their turn to defend their results. How could a quality research thrive among academics who spent most of their time, performing stress-induced administrative duties? Cloete (2009) adequately responded that administrative duties put untold pressure of workload on academics in addition to their daily teaching and research activities.

Furthermore, it is also a dysfunction when research is given more priority over teaching. It is the cause of proliferation of research in most African universities (Chipeta and Nyambe, 2012; Masaiti et al., 2017). This is because, higher education in Africa, in its attempt to catch up with others in other continents, give more importance to research outputs as the major criteria for career advancement among academics. The numbers of research output are a determinant of institutional prestige and status (Masaiti et al 2017). For example, in most African universities, especially those in Nigeria and South Africa,

promotion of academics is strictly based on numbers of research publications, Altbach (2016) only few higher institutions, strictly check the quality of the research outputs (Abe and Mugabo,2021). This has severe implication for teaching and learning, in that, it has led to the rush of conducting research for promotion purposes rather than for solving inherent problems in the society. Quality scientific research solves problems and improves teaching and learning, but hurriedly packaged research, with the intent to pass promotion exercise, contributes nothing to teaching and learning. In fact, it distorts teaching and learning, as academics abandon teaching for low quality research, all in an attempt to accomplish the required numbers of research publications that can make them promote to the next academic rank. Learning is also affected, as students are taught by unprepared and demotivated academics, whose only interest as the time, is research and not teaching.

Similarly, the usual slogan of 'publish or perish' in academic environment has proven to be detrimental to teaching and learning Chipeta and Nyambe (2012), as more academics in African higher institutions now rush for publications than paying rapt attention to teaching of students. In fact, most of the absence of some lecturers from lecture classes are partly due to substituting lecture or teaching time with research. For the senior academics, they have devised the strategy of overloading junior academics with teaching workloads, to fully engage themselves in research. This undermines learning, as students are not really being taught by committed, competent, and experienced teachers. It also undermines proper supervision of both undergraduates and postgraduates' students, thus leading to knowledge or skills gap (Ejiwale, 2014). Relatedly, the scramble for research by academics does not necessarily translates to quality research and publication in high impact factor journals, thus, bringing to the fore, the need to mitigate hindrances to the ability of higher education in knowledge production in Africa (Snowball and Shackleton, 2018). In Europe and Latin America, promotion of academics is not by numbers of publications, but by impact factor of publications and quality research, Cantoni and Yuchtman (2013), this has contributed to quality production of knowledge through research outputs that cut across continents (Gordon & Peters, 2015). Reverse is the case in Africa, as research is driven by promotion and not problem-solving initiatives Chipeta and Nyambe (2012), this is partly the cause of poor knowledge production among higher institutions in Africa, as many academics in these institutions, publish more, in low impact factor predatory journals.

Research Methodology

The article utilizes the qualitative research design, sourced through interviews of purposively selected key informants or stakeholders with sound opinions on the subject. Purposive sampling was utilized to enhance rich quality open-ended discussion and information on the impact of higher education on knowledge production and the effect research on teaching and learning (Bless et al., 2013; Walliman 2017). Categories of four respondents were drawn from universities academics (lecturers), heads of research entities, donors or foundations with advocacy in research and student union representatives. Respondents were selected on the basis of their roles as professionals and

stakeholders on issues of knowledge production through research, teaching, and learning. The selection of these categories of participants allowed the article to filter thoughts from a balanced academic thought, experience obtained from field interaction with student union bodies as well as participation in advocacies for improved knowledge production. While heads of research entities or units in universities can give official viewpoints on the quality of knowledge production and supports for research and teaching, academics who are researchers provide information on constraints to research and teaching. Research donors and foundations have wide ranging experience in research endeavors, through their advocacies, whereas student union representatives offer views on the learning impact of research drawn from students' complaints. The interviews involved online and phone conversations. Interviews were conducted with the head of research entities in Obafemi Awolowo University, Nigeria, University of The Gambia, Gambia, North West University, South Africa, and Zimbabwe Open University. Among student union bodies, interviews were conducted with the executives of the student unions in the four higher institutions. Academics from the rank of senior lecturer with at least five years of working experience, were considered for interviews at the four selected African Universities. The desktop officers or university representatives of research donors or foundations, that support university-based research, were also interviewed. The article utilizes semi-structured interviews, which allows follow-up questions, following the well-structured ones. Generally, the lead question focused on the impact of higher education on knowledge production, by determining the effect of research on teaching and learning in particular. Participants were also asked to comment on how challenges facing research uptake can be mitigated in the face of knowledge production. The requirements and procedures in terms of timing, getting informed consent of participants, for the collection of data were duly complied with between the researcher and participants before the interview sessions, and this aptly conforms with Hennink et al., (2020) recommendations on procedures for qualitative data. Data were analyzed through thematic content analysis.

Findings: Mapping the Motive for Research Uptake and its impact on teaching and Learning

Research uptake by academics in higher institutions is driven by several factors, ranging from problem-solving initiative, scholarship, career advancement or promotion of academic staff, citations, global collaborations and recognition, statutory mandate, among others. In all of these motives, knowledge production is central as the purpose of research is to advance knowledge, critical to societal problems. In the literature, it is generally believed that research stimulates contributions to global knowledge economy Abe and Mugobo (2021), Deming (2021), Ipaye (2018), while this seems to be correct, concerns, about the quality of research output continue to be topical issue in academic sphere, considering the proliferation of research publications in most higher institutions in Africa. These concerns have continually question, the excessive importance, accorded to research as a major determinant for promotion of academics in higher institutions in Africa. The increasing interests in research as the main basis of career advancement, is borne out of the need to be a major contributor to global knowledge economy by African higher institutions. However, evidence has shown that this decision by African universities has only promoted quantity and not quality research output.

This might have made Tawana (2021), concludes that the pursuit of research productivity can make quantity outplay quality research outputs. It is imperative to note that academics in most higher institutions have abused this process, it has made many of them resort to hurriedly packaged research, with little or no new contribution to knowledge. The truth is that ugly conditions and lack of adequate funding for research in universities have made many colleagues abused research, as most hurriedly, carry out research and patronize predatory journal outlets (interview with R. Sakpere, July 15, 2021). It is difficult to lose promotion and this painful idea coupled with other challenges in the system make lecturers succumb to low quality research (interview with Awofeso, July 15, 2021). It is evidenced from both academics interviewed at Obafemi Awolowo University, Nigeria, that the need to secure promotion and advance from one rank to the other, pushes some universities academics, to patronize predatory journals, where low quality research is published. This invariably, undermines contributions to global knowledge economy. This is partly caused by the unawareness of some academics of the demand and competitiveness that research has brought into higher education (Ion and CastroCeacero, 2017). While it is true that some academics are only interested to conduct research to get promotion, it was majorly because those indulge in such act, are not aware of the importance of research beyond promotion and some feel that with achievement of PhD degree or professor, there is no more rigorous research work (Abe and Mugobo, 2021; interviews with Marumo, July 20, 2021; Amusan, July 20, 2021). The temptation to engage in low quality research for career advancement is high in Africa, because of lack of research incentives or supports, and it is more likely that morale will be low to actively engaged in academic activities, if promotion is denied (interviews with N. Obahakpowaghaha, July 22, 2021; Ayeni, July 22, 2021).

Although, supports and incentives are available for research work through TETFUND in Nigeria, it is very difficult to get funding to attend learned conference, just to present a completed research work, let alone a fresh one, because of its stringent rules, which stipulate that only lecturers with PhD degree are eligible to seek for TETFUND funding, and it is once in every five years (interviews with Akintoye, July 15, 2021; Adeniran, July 16, 2021). How does research thrive in such a country, where academics have to queue and get support to conduct quality research? The response to this, was succinctly explained in Monica (2019), that poor funding of research due to corruption in higher institutions, where funds for research are diverted, cannot make Africa compete or contribute to global knowledge economy. Funds approved for research uptake can be misappropriated through various means such as travels and lodging for conferences that were never attended, inflation of invoices and receipts from consultants and organizers of research programme (Semrau et al., 2008; Anonymous, 2021). Corruption in the distribution and usage of funds for research has either stimulates or provokes academics into engaging in low quality research. For example, facts from Semrau et al showed that academics can hurriedly package a research, regardless of quality, for purpose of getting money, which may eventually be diverted, on the one hand, and others who genuinely want to conduct a quality research, but were denied funding, could be provoked to publishing in fast predatory journals, in a bid not to lose their promotion, on the other

hand. This is the consequence of too much emphasis on research, without adequate supports and communication on available research incentives to academics in most universities in Africa and Nigeria in particular (interviews with Afolabi, July 20, 2021; Anonymous 2021). Since promotion is based on publications, and this tends to make academics very productive and engaging in research work, although outcomes have been trailed with mixed reactions in terms of quantity and quality (interview with Rumbidzai, July 18, 2021).

From the above analysis, it is evidenced that research driven by promotion overrides quality for quantity production of knowledge. This does not mean to say that research is not driven by problem-solving initiatives. In fact, the increasing interests in research, even though, quality seems to be low, has earned some African universities good ranking and international recognition in global knowledge production. The feat, even though, may look small, has raised the consciousness and awareness among academics in African universities on the importance of research and knowledge production. This also could have partly been the rationale for the firmness of most universities in upholding research as a major determinant for career advancement. Periodic evaluation and ranking of global knowledge production in terms of research seems to justify the decision and proactiveness of African universities in upholding research as the determinant for promotion. The essence of research as conditions for promotion, is to motivate academics to conduct quality research, but lack of institutional supports and awareness of available research incentives have many academics abuse the scientific process of research and publication (interviews with Babalola, July 20, 2021; Tshidzumba, July 19, 2021). Relatedly, favoritism and nepotism in the recruitment of academics have significantly, contributed to the inability of some academics to cope with the rigor of research activities in Africa (interviews with Bello, July 16, 2021; Marumo, July 20, 2021; Maseng, July 20, 2021; F. Chikerema, July 18, 2021).

Table 1: World and Africa Ranking of top ten African Universities

World University Rank 2021	Africa University Rank 2021	University	Country	City
155	1	University of Cape Town	South Africa	Cape Town
201-250	2	University of Witwatersrand	South Africa	Johannesburg
251-300	3	Stellenbosch University	South Africa	Stellenbosch
351-400	4	University of Kwazulu-Natal	South Africa	Durban
401-500	5	Aswan University	Egypt	Aswan
401-500	5	Durban University of Technology	South Africa	Durban
401-500	5	University of Ibadan	Nigeria	Ibadan
401-500	5	Makerere University	Uganda	Kampala
401-500	5	Mansoura University	Egypt	Dakahlia
501-600	10	Ferhat Abbas Sétif University	Algeria	Setif

Source: Adapted from Best Universities in the world 2021

A critical look at the table shows that quality research output is high in southern Africa, as five universities from South Africa made the top 5 ranked universities in Africa. In fact, university of Cape Town, is the 155th university in the world, this shows the extent to which research is supported in South Africa. From the table, only one university each made it to the top 5 in West, East, and North Africa. Comparatively, it can be inferred that universities in South Africa, even though, still face some hindrances to research, are better in terms of contributions to global knowledge economy, than others in Sub-Saharan Africa (Bunoti, 2010; World Bank, 2010). This feat by South African Universities, could have been as a result of collaborative supports for research by both private and public sectors. For example, South African universities take the lead in Africa, in terms of awarding of research grants, fellowships, scholarships, and sponsorship for postgraduate studies and postdoctoral research to both their citizens and other Africans. While, it is correct that universities in South Africa like others on the continent still experience some challenges in research, the extension of their open research system to other African scholars, postgraduates, and researchers has been highly contributory to Africa's rising profile in research activities (interview with Palamuleni, July 21, 2021).

Research has significant impacts on teaching and learning. While quality research outputs are beneficial to teaching and learning, Austin and Obediah (2020), the low-quality ones, contribute nothing to teaching and learning (Department of Higher

Education and Training, 2019). For instance, findings from quality research are shared with students by academics during lecture and this in turn, enhance learning. Similarly, amendments and improvements on the curriculum as well as effective designing of the study guide are products of quality research. It has enhanced multi-faceted structured pedagogy programs in universities and stimulate the training and re-training of academic staff, teacher coaching, semi-scripted lessons (Piper et al., 2018a, 2018b). Constant research in areas of research interests of academics has been very helpful in teaching of courses related to research areas of lecturers, in other words, quality research aids effective teaching of courses (interview with Awofeso, July 15, 2021).

This is succinctly captured in David and Amina (2021) that research helps to update universities and academics with ideas on making education effective and accessible. The essence of teaching is to impact knowledge, and this, largely depends on competency, experience, training, and commitment of academics, as well as the quality of the contents of the teaching. These attributes are enhanced by continuous engagement of academics in research, as constant research uptake by academics deepen their knowledge skills and competency on courses or subjects, they teach, (interviews with A. Bello, July 16, 2021; Obahakpowaghaha, July 22, 2021; Anonymous, 2021; A. Tshidzumba, July 19, 2021; interview with Rumbidzai, July 18, 2021), and by extension stimulate the learning capacity of student (interviews with Oladejo, July 19, 2021; Moeng, July 20, 2021; H. Mendy, July 21, 2021). Student tends to learn quickly, with have improved understanding of courses well-researched by academics. Specific discipline-based education research has significant impact on effective teaching and various educational practices (Austin, 2011). Research is highly instrumental to revealing appropriate methods, proven to be effective in enhancing student learning. Through quality research outputs, academics are able to choose teaching approaches, and ascertain the value and impact of their teaching choices as well as efforts spent on teaching in relation to other academic works (Austin, 2011). The different style and methods of teaching that aided effective learning by student, such methods as the interactive-feedback teaching, use of symbols and teaching aids, demonstrative-moving around methods are all outcomes of well-researched efforts (interview with Amusan, July 20, 2021). Student learn more rapidly from evidence-based research results, especially, when assignment is given to them from such research reports (Interview with Chikerema, July 18, 2021). Research increases the knowledge capacity of academics on the courses they teach and this knowledge is transmitted to learners, thus leading to effective knowledge production. A well-researched academics is highly beneficial to teaching and learning, because knowledge garnered from research can improve the learning capacity of student (Austin et al., 2008; Austin et al., 2009; Rice et al., 2000).

Discussion: Higher Education and Knowledge Production Critical to Africa's Development

Universities and other higher tertiary institutions are objects of higher education, saddled with responsibilities of producing knowledge capable of meeting the development needs of a society. The workforce needs, in terms of competent, qualified, and skilled graduates

from the higher education, who can replicate such knowledge in advancing the socio-economic development of the society, is dependent on quality research and effective teaching in a functional university system. The widespread adoption of research and effective teaching in universities, across higher education system is indicative of some factors. First, it confirms the contribution of research and teaching to global knowledge production. While research can enhance and endanger teaching and learning, especially, when academics accords more importance to it and snub teaching, due to anxiety over numbers of publications required for promotion, its positive contributions outweigh the negative. Second, it is indicative of another method in addressing low production of quality knowledge and low universities ranking that negatively impugns higher education in Africa. Although there is are widespread concerns about quality of research and contribution to global knowledge economy in some continents, Africa's situation suffers from below-par and low attempts at providing solutions.

Results of studies in African higher education and knowledge production show grave outcomes (Gordons and Peters, 2015; Tracy, 2015; Abe and Mugobo, 2021). Negative trends and concerns about the quality of research and knowledge produced in Africa are well documented in the literature (Devi et al., 2020; Nico and Peters, 2015; Ejiwale, 2014; Monica, 2019), indicating low production of evidence-based quality knowledge, which, in the discussion of Archer (2017), Austin et al (2009) hinder Africa's development. For example, most of Africa's recurrent problems in areas of healthcare, food security, infrastructures, investment, peace, education, electricity generation and distribution, among others, are as a result of poor, little, or inadequate production of quality knowledge in these disciplines. The consequences of these, have been perpetual dependence of Africa on the knowledge from developed countries. The case of Africa taking the backseat in COVID-19 vaccines production and distribution succinctly explained the extent of poor research and knowledge production on the continent.

Thus, the firmness of universities across Africa on research as the major determinant for academics' career advancement is for production of quality knowledge and improved ranking in research outputs by African higher education. The policy is predominantly helpful in the context of Africa's low ranking in contribution to global knowledge economy (telephone interview with Babalola, July 20, 2021). Institutional supports and funding of quality research, can enhance teaching and learning, boost production of quality knowledge and increase the prestige and ranking of African universities, and more positive research initiatives among academics (interviews with Awofeso, July 15, 2021). However, contributions to global knowledge economy depend on factors affecting both variables: research on the one hand, and teaching, on the other. In some African universities, especially, those in Nigeria, where research uptake is at lowest ebb, thus, their research cannot lead to desirable outcomes in production of quality knowledge that can advance Africa's development. Knowledge production also depend on sustained and sustainable research and teaching initiatives –academics commitments, supports on the part of the government and private sectors through provision of funds, grants, and incentives for research, and improved working and welfare conditions for academics.

Evidence continues to highlight the importance research to teaching and learning as well as critical knowledge (interview with Chikerema, July 18, 2021). Research uptake, which stimulates effective teaching and learning, is crucial to production of quality knowledge that can meet Africa's development need. Research initiatives, institutional and government supports, adequate funding, accessibility and awareness of research incentives by academics, establishment of research entities and training on research endeavors to aid high quality research outputs and knowledge, are central to Africa's development (interviews with Chikerema, July 18, 2021; and Palamuleni, July 21, 2021). However, the foregoing strategies aimed at promoting research productivity and quality outputs or knowledge like in other continents, are scarcely available in higher education in Africa. In some African countries, especially, Nigeria, budgetary allocation to education and funding for research is too low, compared to what is obtainable in countries like South Africa and Uganda, even though, government support for research initiatives is not at the expected level in these countries (Chikerema, interview 18 July 2021; Awofeso, interview 15 July, 2021). Thus, academics and the universities research work and productivity have been adversely affected by a lack of adequate funding, poor institutional supports, and declining interests of research donors to finance research in Africa. Supports from both government and private sector or research donors, for research as noted pointedly by Obahakpowaghaha (interview 22 July 2021) and Marumo (interview 20 July 2021), is central to quality research outputs and critical knowledge that can transformed not only teaching and learning programmes of universities in Africa. Just like the standard of knowledge production is global, research reform is key to transformation universities programmes in Africa (Abe and Mugobo 2021). Research outputs, hardly translate into development or better service delivery, on their own. As Awofeso (interview, 15 July 2021) and Abe and Mugobo (2021), observed, their application to problems can contribute to developmental drive and when this is appropriately utilized, development is boosted.

Progress in research, is contingent on how academics can adjust it to daily administrative and teaching duties. Beside what research can contribute to universities-knowledge production, it is dynamic that academics expand their research expertise, especially in relation to targeting high impact factor publications and quality research. This is against a background of studies highlighting inherent problems hampering the ability of African academics and universities in research and knowledge production (Tawana, 2021; Abe and Mugobo, 2021). This limits the ability of academics that are familiar with research in their official duties. Universities academics need to deepen their research skills and knowledge as this can stimulate them to quality research outputs that can earn African universities, high ranking in global knowledge production, and not just as a means of promotion to advance from one rank to the other. The ability to institutionalize, strengthen, and support more research initiatives beyond morale persuasion and promotional incentives will aid continued efforts in knowledge production through research.

Conclusion

In this article, emphasis was on the possibilities that research in higher education stimulates effective teaching and learning as well as knowledge production. These are valued ingredients that can drive not only high ranking of universities but African development. Unfortunately, in Africa, poor research drives among academics, dwindling supports from government and private donors, as well as overbearing academic pressures (teaching and administrative duties), have negatively impugned on research and, thus, quality research outputs. Poor quality of research outputs is an indication of, and contributes to low ranking of universities in Africa. Other limiting factors against quality research uptake, including massive students' enrollment, administrative pressures, corruption, unnecessary or long queue for research incentives, lack of access to information about research supports by academics, hurriedly packaged research for career advancement, poor oversight, and other ethical issues, poor funding as well as poor material and human resource endowment, limit Africa's contributions to global economy production. Research opportunities provided by some higher education or universities, especially, in South Africa are crucial in tackling some of the issues.

The article contends that maximum and sustainable supports for quality research initiatives, specifically, aimed at solving problem will help reduce low quality research outputs or knowledge emanating from Africa and provide broader grounds that can aid inter-regional research collaborative efforts to boost research performance, good ranking, and overhaul the global image of Africa in research. Research promotes effective teaching and learning, which in turn, translate to knowledge production by higher education. It enables universities assess, measure and oversight on their academics. Gaps in the ability of higher education to produce quality research and contribute maximally to global knowledge economy can be eased by proactive collective action aimed at increasing the interests of academics in quality research and publications leveraging on supports and adequate funding of research, and serving as professionals rather than greenhorn in research activities.

Instructively, research and teaching are knowledge generation and production tools, which, while, offering solutions to problems, may also highlight them. Genuine research reforms, with emphasis on quality research and publications in high impact factor journals fully accredited and support and adequate funding committed to providing funds and supports to academics for research purposes will combine to increase the quality of research outputs, boost ranking of African universities, and contribution to global knowledge economy, which can adequately be activated for Africa's development.

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