



Promoting Excellence in Knowledge

**GHANA ACADEMY
OF ARTS AND SCIENCES**



PROCEEDINGS

Closing Conference on

TRANSFORMING UNIVERSITIES FOR 21ST CENTURY AFRICA

THE GAAS PROJECT ON
MOTIVATING HIGHER EDUCATION POLICY REFORMS IN GHANA:
TOWARDS EQUITY AND SUSTAINABILITY

August 2025

GHANA ACADEMY OF ARTS AND SCIENCES

**CONFERENCE PROCEEDINGS ON
TRANSFORMING UNIVERSITIES FOR 21ST
CENTURY AFRICA**

November 28 -29, 2024

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The Conference was attended by around 120 persons, almost evenly split between in-person and virtual attendance as shown in the attached participant list in Appendix 1, and we thank all participants for making time to attend over the two days. We especially thank our keynote speakers, session chairs, and paper and roundtable presenters for their interest and generosity to make themselves available during the period.

The organization of the Conference benefitted from the active participation of the project Steering Committee chaired by Professor Clifford Nii Boi Tagoe, and comprising Professors Ernest Aryeetey, Akilapga Sawyerr, James Ephraim, Naana Opoku-Agyeman, Kofi Opoku Nti, and Mamaa Entsua-Mensah. The Management Committee, comprising Professors Gyapong, Tsikata, Nokoe, and Manuh, planned and executed the technical component of the Conference. The Secretariat of GAAS, then headed by the Acting Executive Secretary, Ms. Kate Ohenewaa Boampong, assisted by Ms. Mispah Mamah, the Programme Officer assisting the project, Mr. Charles Ansre, Mr. Frederick Frimpong, Mr. Felix Lartey, Mr. Ato Wilson, and Mr. Frederick Mensah-Yedu, all played an invaluable role in ensuring the success of the conference. I thank them most sincerely.

MESSAGE FROM THE GAAS PRESIDENT

It is my pleasure to welcome you to the Ghana Academy of Arts and Sciences. I am indeed delighted that the GAAS Higher Education Project that we have been running for the past two years with funding from the Carnegie Corporation of New York has reached its climax in the form of an international conference. It is a major milestone for the Academy, and I am glad that many distinguished scholars and researchers are here to share their perspectives on the most important issues concerning higher education in Africa. We are honoured that we have 150 participants in person and virtually from Cameroon, Ghana, Kenya, Nigeria, Sierra Leone, South Africa and the United States of America, and I extend my warmest welcome to both our local and international visitors.

The theme for this two-day conference, which is being held from 28-29 November 2024, is “Transforming Universities for the 21st Century Africa”. It is a culmination of internationalisation of knowledge gained and lessons learnt from seven (7) in-depth commission background studies and policy dialogues we have conducted under the programme dubbed “Motivating Higher Education Reforms in Ghana - Towards Equity and Sustainability”. The submission of twelve (12) topical and forward-looking papers by the international and local participants attest to the commonality and Africa-wide relevance of the topics that we identified as critical for higher education reforms in Ghana.

The goal of the Higher Education Project was to provide a platform for independent persons and groups to reflect on the challenges of the higher education sector on a regular and sustained basis. We brought together different stakeholders to undertake reviews of current policies and inject independent research evidence for new policy considerations. The forums and platforms also provided the springboard to explore emerging higher education policy issues. Above all, we aim to facilitate consensus building through open and objective discussion of higher education policies. As we engaged with different resource persons in Africa and the diaspora, it became clear that many of the issues we were grappling with in Ghana were also relevant to many other African countries. This consideration stimulated our interest in addressing the big question on transforming universities for 21st Century Africa.

The presentations focused on fundamental issues facing African universities and the need to find solutions to make them relevant in global production and utilisation of knowledge, skills and technology. What I am seeing is that African scholars are beginning to examine the constraints limiting the potential of higher education and offering various solutions. Why they may not get the right solutions immediately, continued investigation and dialogue are a prerequisite for finding truly creative and effective solutions. The solution they discover may be transferable to transforming other areas of society. As we grapple with the issues of transforming universities for 21st Century Africa, we should be mindful of the big elephant in the room, we have problems funding the universities because we operate in low-income economies. As public sources of funding have dwindled, the imperative is for universities to generate external sources of income to fund their operations. Therein lies the dilemma: we need to open up and grow the economies so the universities can generate external sources of income. We should provide ideas and programmes to transform the general economies in which the universities are embedded. We have an impressive list of participants, the topics are novel and exciting, and I am very optimistic that we are in the process of forming a community of higher education scholars, practitioners, and regulators who will define and set the agenda for the transformation of universities for 21st Century Africa. I urge the participants to collaborate and continue to dialogue on the big questions that are waiting for solutions, decolonize and deconstruct the universities, align the courses and programmes with the needs of society, and redesign the universities to be centres of creativity and innovations. I believe we are going to be enriched by this two-day conference. We have started something promising, and we should nurture it to its full potential. The Ghana Academy of Arts and Sciences is ready to collaborate with all of you on future projects of mutual interest. I welcome you and wish you exciting and productive technical sessions and a wonderful stay in Accra.

Thank you.

Professor Kofi Opoku Nti

GHANA ACADEMY OF ARTS AND SCIENCES

The Academy is a learned society established by an Act of Parliament in 1959 to promote the study, extension and dissemination of knowledge of all the Arts and Sciences. With a membership of over a hundred living Fellows drawn from all fields of learning, the Academy has from its inception been charged with a key role in thought leadership and making inputs into policymaking through research and evidence-based advice. The aims and objects of the Ghana Academy of Arts and Sciences are to:

- Promote the study, extension and dissemination of knowledge of Arts and Sciences.
- Establish and maintain proper standards of endeavour in all fields of Arts and Sciences.
- Recognize outstanding contributions to the advancement of the Arts and Sciences in Ghana.
- Do such other things as are conducive or incidental to the attainment of all or any of the foregoing objects.

MISSION: The mission of the Ghana Academy of Arts and Sciences is to encourage the creation, acquisition, dissemination and utilization of knowledge for national development through the promotion of learning.

OUR VALUES: Professionalism and Commitment: a determination to place the experience, knowledge and energies of the finest minds in Ghana at the disposal of the nation is the hallmark of every understanding.

Excellence: this is the essence of the Academy's existence; by selecting the most eminent intellectuals as Fellows of the academy establishes excellence as a pre-requisite in every undertaking. It continues to inspire excellence in its membership and in the work of its secretariat to ensure that all its outputs are world-class.

Integrity: in all things, the Academy strives to exercise honesty, objectivity and independence of thought. Its contribution to Ghana's academic and intellectual wealth is motivated solely by the determination to serve the best interests of society.

Relevance: the desire to be a useful and valued asset to its key stakeholders drives the Academy's efforts. By reflecting the needs and interests of the world, the Academy is a sought after-resource.

PROGRAMME

DAY I

NOVEMBER 28TH, 2024

Registration:	8am-8:45am
9:00am-11:00am:	Opening Plenary
9:00-9:15am:	Welcome address: Professor Kofi O. Nti, President, GAAS
9:15am-9:30am	Remarks, Professor Ahmed Jinapor Abdulai, Director-General GTEC
9:30am-9:50am:	Remarks by Guest of Honour, Dr. Yaw Osei Adutwum, Minister of Education, Ghana
10:00am-11:00am:	Keynote address: Professor Toyin Falola, Extraordinary Professor of Political Science, University of Pretoria, South Africa, and University Distinguished Teaching Professor, University of Texas at Austin, USA.
Topic:	Empowering African Public Universities
Chairperson:	Professor Clifford Tagoe, Chair, Project Steering Committee
Photo Session:	
11:15-11:45am:	Coffee Break

11:45am - 12:50pm Plenary II

The GAAS Higher Education Project-Conception, Format, and Lessons Learnt

Presenter:	Emerita Professor Takyiwaa Manuh, Chair, Project Management Committee
Open Discussion:	
Chairperson:	Professor Kofi O. Nti, President, GAAS
1pm-2pm:	Lunch Break

2:00pm- 3:30pm Plenary Session III

Presentations on the Higher Education Project

Chairperson: Professor Michael Faborode, Obafemi Awolowo University, Ile-Ife, Nigeria

- I. The Conversion of Polytechnics to Technical Universities in Ghana- Dr. George Afeti, Consultant
- II. The Expansion of Public Universities in Ghana - Dr. Adam Yunus, Consultant, Accra
- III. Financing Higher Education Institutions in Ghana- Dr. Justice A. Ayam, Consultant
- IV. Making the GETFund Fit for Purpose- Prof. Kofi Osei-Frimpong, University of Professional Studies (UPSA), Accra, Ghana and Africa Business School, Univ of Mohammed IV Polytechnic, Rabat, Morocco

Discussant: Professor James Ephraim, GAAS

3:30-3:40pm: Health Break

3:45pm- 5:00pm: Plenary Session III continues

Chairperson: Professor Jonathan Ayertey, Council Chair, University of Environment and Sustainable Development (UESD), Somanya, Ghana

- I. Managing Public Universities in a New Age - Professor Atsu Ayee, University of Ghana and GAAS
- II. State-University Relations in Ghana - Prof. Nana Akua Anyidoho, Univ of Ghana, Legon
- III. Private Universities in Ghana - Issues of Access, Equity, and Sustainability - Dr. Lucy Agyepong, Academic City University College.

Discussant: Dr. Francis Ansah, Institute for Educational Planning and Administration, University of Cape Coast, Cape Coast

5:00pm- 6:00pm: Open Forum-Co-Chairs

6:00pm- 7:00pm: Cocktail Reception

Close of Day 1

DAY II

NOVEMBER 29TH, 2024

8:30am-9:00am:	Registration
9:00-11:00am:	Plenary IV
9:00am-9:20am:	Recap of Day 1
9:20am-10:30am:	Keynote 2: Emeritus Professor Ernest Aryeetey, University of Ghana, Legon
Topic:	'Is African Higher Education at a Crossroads? Preparing Universities to be Globally Competitive.'
Chair:	Professor Kofi O. Nti, President, GAAS
10:30am-10:50am	Coffee Break
11:00am-1:00pm:	Parallel Sessions

I. CRITICAL PERSPECTIVES ON INNOVATIONS IN POLICY, GOVERNANCE AND FUNDING INFRASTRUCTURE AND RESEARCH

Chairperson: Professor Felix Asante, Pro-Vice-Chancellor, Office of Research, Innovation and Development, University of Ghana

Presenters:

- i. Professor Peter Wafula Wekesa, Kenyatta University, Nairobi, Kenya: 'From autonomy to dependence: The changing shifts in the policy and regulatory frameworks of Kenyan public and private universities'
- ii. Dr. Patrick Swanzy and Ms. Angelina Owusu Kusi, Faculty of Educational Studies, KNUST, Kumasi. 'Intra-Africa Partnerships and Collaborations of Ghanaian universities: Status and Reasons'
- iii. Mr. Abraham Adusei, Dr. Francis Swanzy, KNUST, Kumasi and Dr. Francis Ansah, UCC, Cape Coast: 'Internally Generated Funds and Financial Sustainability of Ghanaian Public Universities: Unpacking the Nuances.'
- iv. Ms. Ewuraba O. Addo, Mr. Emmanuel Abbey, and Professor John Gyapong, Secretary-General, ARUA: 'Innovative Approaches for Funding Infrastructure and Research'

1:00pm-2:00pm:	Lunch Break
2:30-4:50pm:	Policy Roundtable on 'Making Higher Education Work for Africa'
Chairperson:	Professor Olusola Oyewole, Secretary-General, Association of African Universities, Accra
	• Dr. Evans Takyi, Director of Policy, GTEC, Accra • Professor Michael Faborode, former Vice-Chancellor, OAU, Ile-Ife, Nigeria • Professor Peter Wekesa, Kenyatta University, Nairobi, Kenya • Professor Kelleh Mansary, Deputy Vice-Chancellor, Fouray Bay College, Sierra Leone • Mr. Peter Kwasi Kodjie, Secretary-General, All-Africa Students Union, Accra.
5:00pm- 5:30pm:	Closing Ceremony
Speakers:	Professor Cliff Tagoe, Professor Kofi Nti, Professor Emerita Takyiwaa Manuh
5:30pm-6:30pm:	Reception

PLENARY SESSIONS

SUMMARY OF THE GAAS HIGHER EDUCATION PROJECT

Emerita Professor Takyiwaa Manuh
Chair, Project Management Committee, GAAS

Date: 28th November, 2024
Time: 11:45am - 12:50pm

Emerita Professor Takyiwaa Manuh's presentation on the GAAS Higher Education Project on 'Motivating Higher Education Policy Reforms in Ghana: Towards Equity and Sustainability', funded by the Carnegie Corporation of New York, centred around the conception, format, and lessons learnt from implementation. She noted that higher education is perceived as a public good in Ghana and this is buttressed by Ghana's 1992 Constitution which promotes accessible education at all levels to all Ghanaians. Turning to the higher education sector, she argued that pressures on enrolment at public universities led to the liberalisation of the sector. Thus, while Ghana had few universities until the 1990s, the sector has expanded rapidly and now consists of several large public universities and several smaller private universities. Over the years there have been many changes and reforms, introduced by government or the institutions themselves, in response to demands by stakeholders or on their own initiative. Many such reforms have been aimed at improving accessibility, while others such as the conversion of polytechnics to technical universities, aimed to train graduates to provide needed industrial and technical skills for the needs of Ghanaian industry. Attempts have also been made to diversify revenue sources and improve governance and management, with the University of Ghana's international visitation panel cited as an example of such internally-generated reforms.

Nonetheless, the sector faces several challenges, including rapid expansion and growth in intake in

the last two decades, without requisite expansion or growth in infrastructure, leading to significant overcrowding in teaching and learning facilities; unplanned and inadequate investment in infrastructure development; ageing faculty and inadequate staff development; poor learning outcomes leading to challenges with the employability of students; poor research culture and the absence of research funding and infrastructure; and increasingly weak governance at many public universities.

Key gaps in the sector include the absence of a platform for independent reflection and debate on the challenges of higher education on a regular and sustained basis, no arrangements in place to provide a sounding board for different stakeholders, no regular reviews of current policies, and little effort to rely on independent research evidence to inform new policy considerations. The project hoped to fill some of these gaps through GAAS' convening power and space to develop a platform for evidence-gathering, information-sharing, and consensus-building.

Evidence-gathering was to be conducted through mapping exercises and reviews to form the basis of various convenings, to lead to information sharing with government and other stakeholders; reviews of various initiatives under consideration by different stakeholders; development of well-researched think-pieces for consideration by different stakeholders; regular convenings with regular stakeholder to consider findings from analytical reviews and surveys on diff themes of interest to policy-makers

and the general public. This is to enable GAAS offer recommendations for coherent and well-thought-out policy processes that promote equity and sustainability in the HE sector.

Expected outcomes in the short-term is to improve the diversity of voices in the HE space, channeled through GAAS initially; a platform for researchers and other stakeholders to engage on a regular basis and provide an opportunity for sharing relevant research outputs with a wider audience in a form that is comprehensible. In turn this should empower stakeholders in their engagements with policy and other institutional interventions. In the long term, this is expected to lead to the emergence of a new culture of policy-making, where policy-makers rely on evidence from good research from GAAS and other stakeholders.

Indicators of success include a willingness of government to review current policies and other public interventions where there is a consensus that those policies and interventions require review and amendment; the emergence of a new culture of meaningful consultation and reliance on evidence from research; and greater recognition of GAAS' role as an independent broker in the new culture of consultation.

Project activities included the commissioning of 7 Background Papers and convening policy dialogues

based on them, publication of policy briefs, think-pieces and op-eds, hosting an international conference and the publication of the conference proceedings. These activities helped the project to advance its goal of promoting a diversity of voices in the HE space, providing a platform for researchers and other stakeholders to engage on a regular basis and to share relevant research outputs with a wider audience in a comprehensible form and empower stakeholders in their engagement with policymakers and other relevant actors.

A number of lessons have emerged for us from the project, including the capacities and challenges in the HE sector, the limited critical studies on HE by locally-based scholars, the availability, currency, and accessibility of data and information on HE, limited uptake for calls for expression of interest for drafting the background papers or for the conference, missing outputs such as the think-pieces and op-eds, and the limited critical media reports and coverage of project activities and outputs. These lessons demonstrate the unfinished business in the sector and the need for collaborations and partnerships both internally in Ghana and externally within the sub-region and the continent and with donors for a renewed HE sector. There is also the need for longer-term and more generous funding to enable GAAS play its brokerage role.

SUMMARY OF KEYNOTE ADDRESS I

Professor Toyin Falola
University of Texas at Austin, USA

Date: 28th November, 2024
Time: 10:00 am -11:00 am

The opening keynote address was delivered by Professor Toyin Falola, a distinguished African scholar based at the University of Texas at Austin, USA. His keynote on “Empowering African Public universities” emphasised the achievements of African universities, amidst the challenges that they face. These achievements included the fight against infectious and neglected diseases, enhanced sustainable development and several innovative programmes. In his view, such achievements needed to be acknowledged and celebrated at the same time as efforts are made to empower the universities to be part of Africa’s transformation. He mentioned concepts such as *Afrofuturism*, *Afropolitanism*, and *Afrocospopolitanism* as products of African intellectuals, but which Africans hardly celebrate.

Professor Falola argued that the only way African universities can thrive is for them to invest in research, curriculum development, capacity building, and global partnerships. He encouraged African universities to organise annual events to showcase their contributions, research findings, platforms and resources and incubate them, and invite industries to build on them. According to him, there could be no youth empowerment without university empowerment, and he advocated for entrepreneurship training as part of African universities curricula. He concluded by calling for a vigorous development of African knowledge systems by universities to use for their own and Africa’s transformation.

SUMMARY OF KEYNOTE ADDRESS II

Emeritus Professor Ernest Aryeetey
University of Ghana

Date: 29th November, 2024
Time: 9:20am -10:30am

The second keynote address was delivered by Professor Ernest Aryeetey, a distinguished African scholar, former Vice Chancellor of the University of Ghana, and the former Secretary-General of the African Research Universities Alliance (ARUA).

His presentation entitled 'Is African Higher Education at a Crossroads? Preparing Universities to be Globally Competitive,' focused on what the mandates of globally competitive universities are, and what steps African universities can take for global impact, whilst leveraging on existing opportunities. He argued that Africa's higher education landscape has seen improvement but there are still enormous challenges. He cautioned that the era that universities in their strategic plan aspire to attain a world class status has passed, and that what matters now is a university's ability to compete properly for resources.

Professor Aryeetey emphasised that if a university wants to be globally competitive, there must be a deliberate effort to attract resources by enhancing research and doctoral training, foster innovations in

teaching and learning, and university governance. He defined a globally competitive university as a university which can attract students globally, is approached by industry to partner in its engagements, and is invited by government to join them in negotiations on key issues like climate change.

Professor Aryeetey mentioned that Africa's contribution to global knowledge is low, but there has been a steady increase in recent times. He emphasised that most of the growth in research and publications have been driven by South African universities with other non-South African universities lagging behind. He indicated that even though he is not a fan of university rankings, such rankings force universities to think. He explained what he meant by universities being at a crossroad to mean changes taking place, improvements occurring in several universities, and a strong desire to change. He concluded that if African universities remain competitive, they can thrive as centres of knowledge and prepare for the complexities of the future.

SUMMARIES OF THE COMMISSIONED BACKGROUND PAPERS

Plenary Session Three was divided into two and featured the seven commissioned background papers of the project. There were 4 presentations in the first session, chaired by Professor Michael Faborade of Obafemi Awolowo University in Nigeria. The presenters were Dr. George Afeti, Professor Christine Adu-Yeboah and Dr. Adam Yunus, Dr. Justice Ayam, and Professor Kofi Osei-Frimpong.

i. Dr. Goerge Afeti: ‘The Conversion of Polytechnics to Technical Universities in Ghana’

Dr. George Afeti’s presentation noted that the conversion of the polytechnics to technical universities was rooted in the government’s strategy to reposition the polytechnics as vocationally-oriented tertiary education for training of a technically-competent skilled workforce to support industrialization and economic transformation. However, he argued that since the conversion, technical universities have demonstrated little differentiation from existing public universities. He emphasized that the greatest threat to the identity of technical universities is mission drift and isomorphism, and he suggested measures and recommendations to mitigate these.

ii. Professor Christine Adu-Yeboah and Dr. Adam Yunus: ‘The Expansion and Growth of Public Universities in Ghana’

Professor Adu-Yeboah and Dr. Yunus’s presentation argued that politically driven reforms, policies, and interventions, underpin Ghana’s higher education ecosystem. While the increase in the number of public universities has widened access to most students seeking higher education in Ghana, this has had negative implications for the quality of Ghana’s higher education sector. They advocated the adoption of a systematic approach to address existing structural deficiencies to enhance the sustainability of the sector.

iii. Dr. Justice Ayam: ‘Financing Higher Education in Ghana’

Dr. Ayam’s presentation on higher education financing in Ghana centered on equity, sustainability and actionable reforms required to build a resilient higher education system. The presentation acknowledged that higher education is a critical driver of Ghana’s socio-economic development and highlighted the policy reforms that had occurred in the sector, and the higher education funding model in Ghana. The key role of the Ghana Education Trust Fund (GETFUND) in infrastructure development was noted, but funding challenges persist in the sector. He concluded that alternative funding streams need to be identified to create a more equitable and sustainable higher education system.

iv. Prof. Kofi Osei-Frimpong: ‘Making the GETFUND Fit for Purpose’

Professor Osei-Frimpong’s presentation focused on the establishment and role of the GETFUND to solving financial challenges in Ghana’s HE sector. While noting the funding and distribution formula and contributions that the Fund had made, the presentation outlined some of the inefficiencies within the current model. A key observation was the shift of attention to the pre-tertiary education sector that has constrained the proportions devoted to higher education. The presentation concluded that for GETFund to remain fit for purpose, there is the need for efficiency in its operations, stakeholder engagement, and strategic policy adjustments to be made, to enable the agency to meet the growing demands of Ghana’s higher education sector.

The second session of Plenary Session Three featured three presentations and was chaired by Professor Jonathan Ayertey, Council Chair, University of Environment and Sustainable Development (UESD) in Somanya, Ghana. Presentations were made by Professor J.R.A. Ayee, Professor Nana Akua Anyidoho, and Dr. Lucy Agyepong and Dr. Abena Engmann.

v. Professor J.R.A. Ayee: ‘The Management of Public Universities in Ghana.’

Professor Ayee’s presentation acknowledged the complex nature of governance in universities and changing notions around this. Emphasis was placed on the importance of robust governance and management structures in universities, with successful universities having inclusive leadership and governance, with ownership by all stakeholders, including management, unions, students, and external bodies. The presentation highlighted the governance and management architecture of Ghana’s public universities, issues and challenges that exist, and how institutions have sought to navigate relationships and challenges, while proposing recommendations to address gaps and challenges.

vi. Professor Nana Akua Anyidoho: ‘State-University Relations’

Prof. Anyidoho’s presentation provided a historical analysis of the relationship between the state and public universities in Ghana. The presentation addressed the purpose of public universities in society; the nature and limits of their institutional autonomy; and their financing. The presentation

argued that the policy orientation of successive governments in Ghana has been consistent with a state supervision model, with occasional attempts at state control. It showed how universities have resisted these attempts using their internal structures, and protests and strikes by students and unions, and proposed recommendations for enhancing state-university relations.

viii. Dr. Lucy Agyepong and Dr. Abena Engmann: ‘The Development and Growth of Private Universities’

Drs. Agyepong and Engmann’s presentation argued that private higher education institutions in Ghana have significantly transformed the tertiary education landscape. They highlighted the growth since the 1980s, to around over 120 institutions currently, and its contributions to assuring gender balance, and offering diverse programmes to diverse groups of students. But private universities face several challenges with financial sustainability, faculty recruitment, and compliance with stringent regulatory frameworks. The presentation recommended several policy interventions to save private higher education institutions from collapsing and to enable them to continue to contribute to national development.

PARALLEL SESSIONS 1

CRITICAL PERSPECTIVES ON INNOVATIONS IN POLICY, GOVERNANCE AND FUNDING INFRASTRUCTURE AND RESEARCH

Date & Time: 29/11/24 | 11:00 am -1:00 pm

Session Chair: Prof. Felix Asante, *Pro Vice-Chancellor, University of Ghana*

Speakers: Peter Wafula Wekesa; Patrick Swanzy and Angela Owusu Kusi; Ewuraba O Addo, Emmanuel Abbey and John O. Gyapong; and Patrick Swanzy, Abraham Adusei, and Francis Ansah

This session focused on innovations in policy, governance and funding infrastructure and research. Four papers were presented.

The first presentation by Peter Wekesa, highlighted the exponential growth that Kenya's higher education sector has witnessed since independence in 1963. The paper argues that the drastic changes in Kenya's higher education sector has not occurred in a vacuum but were due to the interventions of both public and private players. The paper concludes that the resultant effect of this phenomenon is a change in posture of the universities from fairly autonomous entities into dependent institutions, impacting on the ways through which universities have executed their mandate.

The second presentation by Patrick Swanzy and Angela Owusu Kusi, focused on the lack of research on partnerships and collaborations between HEIs located in the Global South. They pointed that even though this type of partnership and collaboration has numerous advantages, the current status of most intra-Africa partnerships and collaborations in Ghanaian HEIs are inactive. The paper concludes that the value addition of intra-Africa partnerships and collaborations to the operations of Ghanaian HEIs is minute and requires urgent attention.

The third presentation by Ewura Abena Addo, Emmanuel Abbey and John Gyapong, traced how

African universities navigate a complex funding landscape to support infrastructure and research. The paper argued that the traditional funding models that most of the universities relied on are limited in scope, leading to dependency and threats to their autonomy. The adoption of a new business model and ARUA's innovative funding strategies were recommended as a solution to the funding challenge.

The fourth presentation by Patrick Swanzy, Abraham Edusei and Francis Ansah, explored Internally Generated Funds (IGF) strategies in two Ghanaian public universities through the lens of Resource Dependency Theory. Five (5) key IGF strategic approaches namely: student-based revenue strategies, infrastructure monetization, commercial ventures, external partnerships, and staff-driven revenue generation were highlighted as prominent in the public universities. The paper concluded that successful IGF implementation requires a balanced approach that considers both immediate revenue and long-term sustainability goals while maintaining academic quality.

Full papers from the Parallel Session One presentations follow subsequently.

FROM AUTONOMY TO DEPENDENCE: SHIFTS IN THE POLICY AND REGULATORY FRAMEWORKS OF KENYAN PUBLIC AND PRIVATE UNIVERSITIES

Peter Wafula Wekesa

Kenyatta University, Nairobi – Kenya

Abstract

Kenya, like most other African countries has witnessed an exponential expansion in the higher education sector since its independence in 1963. From a single public university (the University of Nairobi) and a single private university (the USIU) in 1970, the total number of fully-fledged universities in Kenya as of 2022 stood at 68, comprising of 33 private and 35 public universities. This growth, especially in the University education sub-sector, has been supported by interventions from both public and private players, growing side by side and complementing each other in the drive to make higher education more accessible. The recognition of higher education as key to the country's economic growth has necessitated that the government takes a leading role in ensuring that quality higher education is equitably accessible to all Kenyans. Consequently, various policy reforms undertaken in the higher education sector especially from the mid-1980s have had mixed outcomes on the regulation and governance structures of both public and private universities. These reforms have, among other things, transformed universities from their previous postures as being fairly autonomous entities into dependent entities, thus undermining their place as citadels of knowledge production and research. This paper reflects on the shifts in the policy and regulatory directions of Kenyan public and private universities and how these have impacted on the governance structures of universities. The paper particularly pays attention to the multiple ways through which the shifts in policy has impacted on the way universities have discharged their mandates, and the implication that this has on the present and future place of Kenyan universities in the global knowledge capital economy.

Keywords: Kenyan, public, private, universities, autonomy, independence

Introduction

On September 30, 2022, Kenyan President William Ruto, who was hardly a month old in office appointed a 49 member Working party chaired by the former Egerton University Vice Chancellor, Professor Raphael Munavu, to evaluate and recommend various appropriate reforms within the Kenyan Education sector. Although the main focus of this Presidential Working Party on Education Reform (PWPER) was on the then newly implemented Competence Based Curriculum (CBC), their mandate extended to the higher education sector. Specifically for universities, the report, *Transforming Education, Training and Research for Sustainable Development in Kenya*, PWPER proposed a raft of far-reaching reforms ranging from the type of courses to be offered, the funding modalities and governance structures among others.

We begin this paper with the PWPER policy reforms not because they are the only ones to have been implemented within the Kenyan university sector but because of other related considerations. First, these are the most recent in a series of policies to be implemented in the university sector since independence. The proposed reforms mirror a series of previous reforms within the university sector that have sought to address specific issues such as financial sustainability, equity, quality and relevance of university education. Second, is that the university sector in Kenya has always occupied a pivotal position in the administrative framework of any Kenyan government in power. It is by no surprise therefore that PWPER was among the first of the independent working parties to be set up by the newly elected United Democratic Alliance (UDA) government after it won the election in August 2022. Third, and perhaps more critical, is that whereas Kenyan universities have made tremendous strides in fulfilling their mandates, they have over the years faced innumerable challenges that have negatively impacted on their ability to deliver quality higher education to all.

A glimpse into the PWPER proposed reforms provide a useful context to reflect on the historical trends and strides made by the country as it has grappled with the various policy and regulatory frameworks within the university sector. Among the PWPER proposed reforms include the barring of universities from offering certificate and diploma courses and instead focus only on degree programs. The justification for this is that universities contribute to the low number of student enrollment to Middle Level colleges because they compete by offering similar courses. Consequently, PWPER's consideration is that universities and middle level colleges should occupy different niches and offer different programs (UWN, August, 2023). On University governance, PWPER proposed that university councils, as opposed to the prevailing tradition, should be allowed to carry out recruitment and appointment of vice-chancellors

and deputy vice-chancellors, principals of colleges and deputy principals for public universities without involving the Public Service Commission. The latter among other issues would ensure that universities remain fairly autonomous.

As it could be seen from the foregoing, university policy reforms have, over the years, been than not been part and parcel of the transformation of the sector. As this paper demonstrates, most of these reforms and the attendant regulatory frameworks have oscillated between the delicate spaces of autonomy and dependence. Institutional autonomy, as Kiboij and Wosyanju (2022) have observed, is important in enabling universities determine their objectives and determines how to achieve these objectives. This is directly related to academic independence or freedom, which on the other hand has to do with the institution's space to conduct research and disseminate their findings without the fear of the consequences associated with the findings. Both autonomy and academic freedom are thus important for any university worthy its name. Yet, the enjoyment of autonomy and academic freedom cannot happen without the necessary cautionary measures. This is necessary in ensuring that universities safeguard their mandates and are also responsive to other societal needs.

From their inception, pioneer universities in Kenya enjoyed some kind of autonomy in their day to day running. However, over the years, this autonomy did not appear to sit well with their politically motivated expansionist ambitions as well as the deep-seated fears among the political class on the implications of a fairly independent intelligentsia. Thus, although the recent reforms may be justified on the need to steer university education on the right path, the political overtones inclined towards control need to be interrogated. Currently, as the country focuses on its key development agendas, the need for skilled manpower from universities to drive these agendas is urgent. This paper addresses the shifts in policy and

regulatory frameworks in Kenyan universities. The paper does this by first providing a historical overview on some of these significant reforms. Secondly, the paper examines how these reforms have negotiated through the delicate balance of autonomy and independence in universities over the years. Finally, the paper explores the implication of these reforms on the sustainability of universities and on the delivery of relevant and quality of education as well as the research output in these centers of higher learning.

The Beginnings: Colonialism and Inter-territoriality Education Policy

The introduction Western education in colonial Kenya, just like elsewhere in British Africa, was not aimed at developing the Africans and their environment but to serve and adapt Africans to the colonial interests (Altbach, 2005). During this period, the church had a major stake in education, which they viewed as an important tool in their evangelizing mission. The colonial government on the other hand regarded education as an agency for social control. The major interest of the colonial government was therefore in developing basic technical education. However, as Sifuna and Chege, (2006) have argued, the history of higher education owes its origins to these initial developments. In British East Africa, for instance, the limited supply of clerks, craftsmen, technicians among other key skill areas and the lack of a training institution for such cadre of experts made the Governor, Robert Coryndon (1918-1922) to request for a technical institution to be created in the territory (Motani, 1979).

The foregoing request was granted and formed the basis for the establishment of Makerere Technical College (MTC), the only broad based inter-territorial center serving the British colonial technical training needs in the then British East Africa, a region that comprised of the present Kenya, Uganda and Tanzania. MTC was to train students from this dispersed geographical space in technical/vocational courses and produce artisans, mechanics, drivers, medical assistants, agricultural assistants and clerks (Otunga, 2023). Technical education was supposed to produce low cadre employees for colonial administration (Mazrui & Mazrui, 1998). Needless to mention, liberal education was not considered a viable option for Africans as this could have sparked off anti-colonial sentiments among the colonized.

The journey towards the elevation of MTC into a university status was born among other policy issues, a recommendation from the James Currie Committee (1933) that there was need to elevate a few institutions including MTC to a university-level status but under the tutelage of University of London. This recommendation saw a University College of East Africa born as an institution of higher education to serve the needs of Africans and Asians in the East African region (Otunga et al., 2023). The emphasis in the newly created university college however remained the production of skilled human resources to serve the needs of the white settlers. As such, programmes on offer mainly included certificate courses in agriculture, carpentry, medical care, motor mechanics, teacher training and veterinary science (Musisi, 2003).

Higher education, just like the preceding technical one benefited, and was indeed guided by the policy of inter-territoriality (Kithinji, 2012). This policy required that trainings in any region would serve the labor needs in the entire British East African empire. The policy was a product of the colonial reform efforts that were championed by the British after the Second World War as a strategy for post-war reconstruction and development of their Colonial Empire. In 1943, Britain's Secretary of State for Colonies, appointed the Commission on Higher Education in the Colonies under Cyril Asquith to survey the higher education needs of the British colonial empire and recommend on the way forward in terms of investment (Kithinji, 2012). One of the recommendations was for the establishment of university colleges affiliated with University of London. In British East Africa, this college was to be Makerere in Uganda.

The policy establishing a common university for British East Africa (BEA) at Makerere and the likelihood that the University could offer both technical and liberal courses did not however sit well with the white settlers in Kenya. The settlers preferred provision of solely technical education to Africans as opposed to liberal education (Kithinji, 2012). Consequently, they resolved to establish a technical institute in Nairobi, the Royal Technical College (RTC) (Kithinji, 2012). In September 1951, the Royal Technical College received a Royal Charter (Otieno, 2012). The College offered courses leading to a higher national certificate and later was also given a role to prepare to matriculate students through full-time study for university degrees in engineering and commercial courses that were not on offer at Makerere College (Ngome, 2003).

Recognizing the dynamic nature of the higher education landscape in the BEA, the Colonial Office appointed two working parties to advise on the future of higher education. In 1955, the First Working Party was appointed under the chairmanship of Carr-Saunders. Their report endorsed inter-territoriality policy but recognized the need to allow some tertiary-level training at territorial levels. The Carr-Saunders Report according to Kithinji (2012) introduced a three-tier level higher education policy for East Africa. The first tier was the university-type education that was already existing at Makerere College in Uganda, the second tier was higher technical education that was on offer at the RTC in Kenya, and the last tier was the lower technical training that was to be left in the hands of the various territorial institutions. The Carr-Saunders Working Party however failed to appreciate the growing ambitions among Africans to establish territorial higher education even as many of them opted for higher education abroad.

In October 1957, the Colonial Office convened a meeting in London to find solutions to the challenges that had engulfed the East African higher education. The demand by Africans for university education, a fact propelled by the prevailing nationalistic mood was palpable. It is in this meeting that the Colonial Office heeded the calls to establish a university college to provide a degree type education in non-technological subjects in Kenya and Tanganyika. However, the Colonial Office stuck with the inter-territoriality policy where the newly established colleges in Kenya and Tanzania had to be associated with Makerere University College in Uganda. The second Working Party on Higher Education in East Africa chaired by J.F Lockwood in 1958 recommended the creation of a regional university with constituent colleges in Kenya and Tanzania (Bogonko, 1992). The RTC was therefore transformed into a second inter-territorial university college of East Africa. In 1961, the 'Royal College Nairobi' later renamed 'University College Nairobi' after Kenya attained independence became the second university in East Africa (Otieno, 2012). The new university was consequently admitted into special relationship with the University of London to prepare students in the faculties of Arts, Science and Engineering (for B.A., BSc. and BSc. Engineering degrees respectively) of the University of London (Bogonko, 1992).

In 1963, the Royal College that became University College of Nairobi joined Makerere and Dar-es-Salaam colleges to form the Federal University of East Africa.

The Federal University of East Africa cooperated with the three now independent governments of Kenya, Uganda and Tanzania in developing higher education in the region. And for the first time, the three constituent colleges of Federal University of East Africa became autonomous in running their academic affairs. However, the development of curriculum remained a collaborative venture to avoid duplication of programs. The policy of inter-territoriality only remained relevant in as far as matters of faculty and programs offered were concerned. For instance, common faculties were identified as Arts, Science and Education while the specialized faculties were Engineering, Veterinary Science and Architecture at University College Nairobi; Medicine and Agriculture for Makerere; and Law at Dar-es-Salaam (Bogonko, 1992). This is the situation that obtained in East Africa as the three countries of Tanzania, Uganda and Kenya moved into the new era of political independence in 1961, 1962 and 1963 respectively.

Independence and the shift from Inter Territoriality

The plans by each of the three East African countries to have its own college converted into a fully-fledged university were on top gear in the years after independence. The University College Nairobi opened a medical faculty in 1967 while Makerere had Librarianship, Linguistics and African Languages, Pharmacology, Physiology, Geology, Sociology, Social Anthropology, Economics, Public Administration, commerce, social Work, Religious Studies, and Music, Dance and Drama (Sicherman, 2005). The competing, and sometimes overt duplications led to the appointment of another Working Party on Higher Education in 1968. One of the recommendations from the working party was the elevation of individual colleges to full university status by 1970 (Bogonko, 1992). This recommendation was adopted and on 1st July 1970, the Federal University of East Africa was dissolved and University of Dar-es-Salaam, Makerere University and the University of Nairobi were set up by the Acts of Parliament as full-fledged universities (Otunga et al., 2023). However, the inter-territoriality policy was still not lost as an Interim University Committee for East Africa was set up for the purpose of maintaining academic cooperation and continued academic communication between universities in Uganda, Kenya and Tanzania (Musisi, 2003).

In the case of Kenya, the setting up of a full-fledged national University of Nairobi opened doors for the

expansion of university education in the country. As a pioneer institution, the University of Nairobi (UoN) strengthened and expanded its existing faculties and embarked on plans to set up strategic faculties that were initially non-existent. In the academic year 1970/71, UoN offered courses in Law, Agriculture and Journalism. From the Institute of Development Studies (IDS) came an independent and standalone Institute of African Studies (IAS) while the Department of Education became a full-fledged faculty (Otunga et al., 2023). In 1970 following the growing demand for access to university education, the first Constituent College of the University of Nairobi, Kenyatta College was established through an Act of Parliament. The new Kenyatta University College hosted its first set of Bachelor of Education students in 1972 (Muyaka, 2019).

Due to the increasing demand for university education, the Kenya Government in January 1981 appointed a Presidential Working Party chaired by Dr. Colin Mackay to advise on the possibility of establishing a second public university. The Mackay report strongly recommended the need for a second university with a niche bias towards science and technology (Muyaka, 2019). There were also strong undertones of establishing a rural-based university that would help decentralize higher education away from the capital city Nairobi. The Government adopted the Mackay recommendations and, through an Act of Parliament (1984) and established Moi University in Eldoret Town as the second public University in the country. On 1st September 1984, the University of Nairobi transferred the Department of Forestry together with its 83 students and teaching staff to become the first academic program for the newly created Moi University (MU). The Department of Forestry was expanded to the Faculty of Forest Resources and Wildlife Management (Otunga et al., 2023) and by October, 1986, two more faculties became operational; the Faculty of Science and Faculty of Technology (Moi University, 1986).

Kenyatta University (KU) was established as the third public university in 1985. The University traces its history to 1965 when the British Government gave back the Templar Barracks for the army to the then newly independent government. As has been observed above, in 1970, it became a constituent college of the University of Nairobi renamed Kenyatta University College (KUC) to offer programmes in education. The College offered teacher training for certificate and diploma levels (Muyaka, 2019).

In 1978, UoN moved its Faculty of Education to Kenyatta University College and in 1985, by an Act of Parliament (1985) it was elevated to a fully-fledged university becoming the third public University in Kenya.

Egerton University (EU), specializing in agricultural training and linked to the work of the British national Lord Maurice Egerton of Tatton who settled in Kenya in the 1920s was upgraded to an Agricultural College and gazetted as a constituent college of the University of Nairobi in 1986. In 1987, Egerton University was established as the fourth public university in Kenya through an Act of Parliament (1987). In 1981, through the support of the Japanese government, the Jomo Kenyatta College of Agriculture and Technology was established. It became a constituent college of Kenyatta University in 1988 through a legal Notice, under the Kenyatta University Act (CAP 210C). The College was renamed Jomo Kenyatta University College of Agriculture & Technology (JKUAT) and through the Act of parliament (1994) established as the fifth public university in Kenya. Maseno University (MU), which started off as Government Teacher Training Institute in Kenya's western Kenya was converted into a University Constituent College of Moi University in 1991 and established as the sixth public university in Kenya through an Act of Parliament (2000). Masinde Muliro University of Science & Technology (MMUST), formerly Western College of Arts and Applied Sciences (WECO) was equally upgraded to a constituent college of Moi University and by an Act of Parliament (2006) became the 7th public university in Kenya.

The Big Seven and the Autonomous Regulatory Frameworks

Until 2006 seven public universities (UoN, MU, KU, EU, MU, JKUST and MMUST) straddled the Kenyan University sector like a colossus. Together with a few emerging private universities that will be discussed below, the big seven carried forward the government's agenda of training the required skilled manpower for the enhancement of the country's development process. These pioneer Kenyan universities acted as pillars in the socio-economic and political development of the country. Compared to other regions in East Africa, Kenya's university education sector represented one of the largest in the East Africa (Nyangau 2014).

The exponential expansion of the Universities should however not indicate that there were no regulations. In any case, as Otunga (2024) has aptly noted, University regulation in Kenya is as old as the university itself. From the early times of the establishment of UoN as the first public university, there were some regulations governing its operations. Initially regulated through an Act of the East African High Commission (1961), UoN was affiliated to the University of London. This meant that the formal regulation of its programs, including the degrees awarded flowed from the conventions established at the University of London. For instance, although UoN had specific programs to offer, it was not allowed to duplicate what was offered in the other university colleges (Otunga, 2024). It was limited to offering programs in the faculties of Arts, Science and Engineering of the University of London.

Apart from the Act of the East African High Commission, there was also the passing of the University of East Africa Act (1962) that created the Federal University of East Africa in 1963. It is generally through the Federal University of East Africa that a clear regulatory framework of universities in Kenya evolved in the post independent period. This Act gave direction on what had to be taught or researched on in order to avoid cases of duplication of faculties. The regulation, spearheaded through the University Development Committee (UDC) also ensured that each East African country went its own way in developing higher education and regulating themselves. This was actualized after the Working Party on Higher Education in East Africa (1968) elevated UoN, University of Dar-es-Salaam and Makerere University into full university status in 1970. For Kenya, the UoN was to be regulated through the Act of Parliament that was promulgated on 1st July 1970 (Otunga et al, 2023). Like with UoN, the other members of the big seven, following their establishment were regulated by separate Acts of Parliament. These included MU (1984), KU (1985), EU (1987), JKUAT (1994), MU (2000), and MMUST (2006).

Perhaps one area where the separate Acts gave the greatest autonomy to the big seven universities was in curricula development. According to Otunga et al., (2011) the powers derived from the separate Acts of Parliament bestowed powers to these universities to pursue their path in matters of teaching staff and curriculum without reference to any other authority. These universities were given ‘the freedom to develop, duplicate and multiply their academic programs as far

as possible so long as they had been approved by their senates’ (Otunga et al., 2023:16). Consequently, these universities autonomously developed their academic programs based on what they interpreted as their niche. Whereas this appeared to bestow on the big seven the advantage to innovatively cultivate unique niches, most of them ended up creating unparalleled duplications and competition among themselves. In a way this duplication could be explained by two reasons. The first is that since the six of the big seven grew out of UoN, their curricula, teaching methods and quality of academic staff recruited mirrored the established practices at UoN. The second reason is that the duplication also arose from the powers that the acts of parliament that established them gave to their senates. Most of their senates ended up recommending for offer academic programs in science, education, engineering, agriculture and business/commerce. This would later impact on the future job prospects and placements of the graduates from these pioneer universities.

The flexible regulatory framework extended to the big seven was similarly applied to the private universities that were emerging in the country then. These universities, though still fairly new and with comparatively lower enrolment rates were increasingly beginning to make a valuable addition to the university education landscape in terms of extending access and offering alternatives to the public sector. Either secular or faith based, these private universities and colleges were regulated through mentoring universities abroad or through their local sponsors. The private universities and colleges in question included but are not limited to Strathmore College (1961), Scott Theological College (1962), USIU-Nairobi Campus (1970), Daystar College (1971), Pan Africa Bible College (1978), University of Eastern Africa-Baraton (1980), Catholic Higher Institute of East Africa (1984), St. Paul’s Theological College (1993), Africa Nazarene University (1993), Methodist University (1997) and Kabarak University (2002). Like with the big seven public universities therefore, the pioneer private universities were regulated through their mentorship or sponsorship entities. With this kind of arrangement, the institutions also enjoyed some fair kind of autonomy in the discharge of their mandates especially in terms of the programs offered. However, private universities tended to be subjected to stricter scrutiny than public universities (Otunga et al., 2023:16).

Commission for Higher Education (CHE) and the New Regulations

The narration in the preceding section seem to imply that universities, especially the big seven public ones, owing to their subjection to separate Acts of Parliament enjoyed unfettered autonomy by 2006. Further from this, the government in significant respects often extended its control on these institutions. More important is that during this time, until the National Rainbow Coalition (NARC) government that won the 2002 election and ended Daniel Arap Moi's 24-year reign in power, Moi remained the chancellor of all the public Universities. Although appearing cosmetic and only symbolically demonstrated through their gracing of graduation ceremonies in these universities, the import of this position cannot be underrated. In all respects it served to send a signal that the government was fully in charge of these institutions.

The clearest government statement in its foothold on universities was demonstrated through the establishment of the Commission for Higher Education (CHE) in 1985. Although the establishment of CHE did not mean to end the partial autonomy enjoyed by public universities that operated under separate Acts of parliament, the immediate concern by the government then was how to maintain quality of standards in universities especially with the entry of private university players within the sector. As Sifuna (1998) has argued, the fundamental concern for the Kenya Government when private sector started active engagement in the provision of university education was how to maintain minimum quality standards of academic quality and operational procedures. In 1985, CHE was established by an act of parliament and among its functions were;

- To examine and approve proposals for courses of study and course regulations submitted to it by private universities.
- To provide accreditation to universities.
- To make regulations in respect of admission of persons seeking to enroll in universities and to provide a central admissions service in public universities
- To plan and provide for financial needs of university education and research including the recurrent and non-recurrent needs of universities.

- To determine and recommend to the minister, the allocation of grants of money for appropriation by parliament to meet the needs of university education and research and revenue expenditure by universities of moneys appropriated by parliament.

The statutory powers given to CHE through the above functions were considerable and adequate to manage university education in Kenya. However, the commission focused more on the accreditation of private universities at the expense of other functions. The statutory body did not have any significant role in budgetary allocation and admission of students to public universities (Sifuna, 1998) yet it was established to guide on these two critical roles. Public universities directly placed their individual budgetary demands with the Treasury or through the Committee of Vice-Chancellors. This contributed to unexplained disbursements where funding allocated to different universities depended much on the ability and influence of the Vice-Chancellor to lobby with the Treasury or how close they were with the Chancellor who was then the President of the Republic of Kenya (ibid.). The implication of this was that small universities in terms of student enrolments and programs received higher state funding than the more established ones.

As could be noticed from the foregoing, CHE in spite of its good intentions ended up facing critical challenges. The most pronounced according to Sifuna (1998) was the interference in its operations by the political class that threatened the quality prerogatives that it set out to guard. This interference was meant to have been cured by the Universities Act (Cap. 210B) which established the CHE but this still lingered on. The main purpose of CHE remained quality control, assurance and validation of academic programs in private universities as well as providing advice to individuals and sponsors intending to establish universities in Kenya (CHE, 1985). Effectively these roles meant that CHE was the de facto regulator of private universities while public universities went about their businesses while being regulated by their separate Acts of parliament. The fact that CHE mostly used staff from public universities to accredit programs and carry out institutional quality audits in private universities tended to communicate that public universities were superior and not subject to CHE.

CHE did not on the overall succeed in curing the challenge of interference in the running of Kenyan universities and in ensuring that their autonomy

was entrenched. Autonomy, especially within public universities was viewed as the most progressive strategy in ensuring that such institutions fulfilled their mandates freely and competed internationally within the ever- expanding knowledge economy. There was a sense in which various stakeholders argued in favor of more autonomy and self-control especially in the university management structures as opposed to the overbearing external control by the state and other forces. The establishment of CHE could partly explain the outcome of this mood. CHE in a way marked a shift in focus where the state would relinquish its direct control over universities and adopt new roles that were supervisory and regulatory in nature. However, although the impact of CHE on quality issues in universities was phenomenal the autonomy aspect succeeded only but dismally. By putting in place some quality structures that were initially lacking, their mandate and oversight was sometimes interpreted as an affront to the very university autonomy that they were expected to protect (Omanga, 2017).

It is significant to note that the establishment of CHE and the subsequent liberalization of the education sector coincided with the rising demand for university education from a huge segment of Kenya's population. The country had more students qualifying for university education than the available spaces in the big seven public universities. Whereas these were being complemented by upcoming private universities, some students who could not be accommodated opted to pursue university education outside the country.

The Constitution 2010, CUE and More University Regulation

The rising demand for university education in Kenya continued to provide one of the most serious challenges to the government which CHE among other regulatory agencies were unable to adequately address. At independence, Kenya had 571 students enrolled in the University College Nairobi (Weidman, 1995). In 1983/1984, student population had risen to 7,418; in 1988/1989 student enrolment rose sharply to 21,846 and then to 59,193 in 2000/2001 (Sifuna, 1998). Enrollment in Kenya's universities stood at 562,066 with the majority of the enrolment (83.2%) in public universities (Munene & Muyaka, 2022).

Between 2010 and 2013, the university sector received one of the massive expansions in public and private universities ever witnessed in the country's history. This expansion due to increased demand partly also followed the promulgation of Kenya's Constitution 2010 that provided for the creation of a university in each of the 47 devolved counties in Kenya. The outcome of this was a trend, which Otunga (et al, 2023) describes as the era of uncontrolled appetite for the creation of universities. The first and easier route for the creation of new universities was the conversion of existing university campuses and tertiary institutions into university constituent colleges to provide the much-needed space to accommodate qualified students. It is noteworthy that in 2013 alone, 13 public universities were given charters by the Government to offer university education (Ibid.).

On top of creating and awarding charters, the Constitution 2010 also provided a framework on how the education sector would be regulated. In its fourth schedule, the Constitution states that the National Government among other functions is in charge of:

- a. Education Policy, standards, curricula, examinations and the granting of university charters; and
- b. Universities, tertiary educational institutions and other institutions of research and higher learning and primary schools, special education, secondary schools and special education institutions.

The statement from these constitutional provisions seems clear in terms of the government intentions for the regulation of the entire education sector in the country. First and foremost is that unlike the regulatory frameworks that obtained before, the national government apart from supervisory was going to be directly in charge of education regulation at all levels. Secondly, and perhaps more important is that this new regulatory framework was set to be facilitated directly and centrally through the new government agencies that were set to be created. Armed with these provisions therefore, the government appeared ready to embark on regulation especially beginning with the newly established universities.

In order to entrench the foregoing constitutional provisions and uphold them, the government enacted the Universities Act (2012), which among other things also brought a lot of changes in the regulation of both private and public universities. The Universities'

Act (2012) created the Commission for University Education (CUE) and in Section 71 repealed all the acts of parliament that had set up public universities. In Section 13(1) of the Act, every university in Kenya was to be established by a Charter or a Letter of Interim Authority (LIA) in accordance with the Act. In Section 20(1)(c) of the Act, *CUE shall ensure the establishment of public universities in each of the counties, giving priority to the counties that do not have universities immediately after following the coming into force of the Act* (2012; p. 20).

CUE was thus established and mandated to play a central role in the planning, development, budget development and maintenance of quality in higher education (Republic of Kenya, 2012). Although the mandate of CUE traversed a wide spectrum, including advising the Cabinet Secretary (CS) on policies related to university education, inspect and approve universities among others, its most phenomenal role related to the regulation of university education, approval and inspection university programs. The impact of CUE on quality issues in universities has been the most noticeable. CUE among other roles aided universities in putting in place the necessary structures that would ensure the quality and standards of the programs offered was upheld. However, in discharging these functions some questions have been raised over its overall mandate that has sometimes been interpreted as an affront to the same university autonomy that they were expected to protect. Issues have for instance been raised in regard to the fact that its activities and functions that tended to favor public universities against the private ones.

The Universities' Act (2012) also established the University Funding Board and the Kenya University and Colleges Central Placement Service (KUCCPS). KUCCPS became an oversight body for students' placement to universities (public and private) drawing membership from both public and private universities. CUE has been regulating both private and public universities since then. All private and public universities had to be subjected to Universities Standards and Guidelines (2014) during institutional quality audits before they are awarded a charter. To reinforce this, the University Regulations (2014) passed by parliament provided clear expectations of how universities should ensure quality teaching, learning and research as well as ensure that each university undergoes periodic institutional quality audit every five (5) years. Consequently, all universities

in Kenya (both public and private) were expected to take CUE inspection very seriously as results of such inspection had implications for the continuity of the institution in question. All public universities were chartered afresh from 2013 beginning with those that had been established by the Acts of parliament before 2010.

Governance Structure and the Dependence of Universities

With the enactment of the University Act 2012 the regulatory framework within both public and private universities ensured that they were subjected to some centralized control through the newly created government agencies. To streamline the universities through legislation, CUE regulated the standards whereas KUCCPS was mandated to regulate and admit qualified students to universities. Yet, these were not the only spaces within which Universities lost their autonomy. The issue of governance of universities was another critical space. Governance is a complex concept and more often with varying meanings. In the context of universities, the Task Force on Higher Education and Society (2000) defined governance as the formal and informal arrangements that allow higher education institutions to make decisions and to establish, implement and continuously monitor the proper implementation of policies. This entailed organization and management of higher education institutions.

The governance structures within universities are required to provide guidance on the response that a university is expected to give to varying situations that it encounters. In this context, attention is focused on internal and external levels of governance. The focus is on entities or person(s) in public and private universities in Kenya with vested authority to make decisions when and on what (Task Force on Higher Education and Society, 2000). At the institutional level, there is the internal authority derived from the statutes but there is also the external authority as provided for by various policies that establish universities in Kenya. External forces are majorly the state and its agencies.

As noted, the state as an external player has often exercised external powers, either directly through decrees and pronouncements or indirectly through the state appointed regulatory bodies such as Commission for University Education (CUE). Therefore, the concept of governance has a direct

influence on the university autonomy and academic freedom; two principles that have been at the centre of growth of universities. In an ideal situation, universities have the freedom or autonomy to make decisions that represent the best interest of their institutions without any sort of interference from external or any non-university entities. However, these principles themselves have been the subject of debates in university governance in Africa.

Public universities in Kenya were created through various laws or Acts of Parliament which were specific to each institution so created. In this case, each institution in a way enjoyed some form of independence in the way it discharged its mandate. However, since 2012, when the Kenyan parliament through the education Act (2012) repealed all these laws and created one law to oversee the management of all universities, their autonomy was greatly compromised. It is especially from this time that public universities started experiencing a lot of external interferences that threatened their autonomy and freedom particularly from the political class (Mugenda & Mwangi, 2014). The Education Act (2012) provided guidelines for the creation/establishment and management of Universities in Kenya (both public and private). Among the various ways in which this law undermined university autonomy was the creation of bodies that would coordinate and provide monitoring and standardization of universities. These bodies were CUE, KUCCPS and the Universities Funding Board (UFB). As opposed to the previous structure, this law according to Kiboiy and Wosyanju (2022) gave the minister of education the sole authority of supervising and overseeing the overall management and direction of all education matters and the promotion of education as well as the development of all institutions devoted to the promotion of education. This was clearly a herculean task to be vested in one person. Moreover, its centralization intentions were expected to greatly impinge on the autonomy of universities.

Funding is perhaps one other area where universities, especially public ones, have experienced a lot of dependence. Historically, public universities were fully funded by the government, up until 1995, when cost sharing model was introduced. Although universities have often experienced inadequate funding, due to the exponential increase in student enrollments, there was a somewhat freedom in which the individual universities utilized these funds. More important is that through the Module II or parallel programs,

universities were able to generate extra money often without much control from the government. In 2012 however, with the establishment of the UFB, whose mandate was to solicit university funds and apportion the funds, criteria were developed on how these funds would be utilized. UFB was meant to streamline the funding of universities and put an end to the perennial funding issues. The budget shortfalls from the government persisted and often led to, among other issues, student capacity challenges, a mismatch of industry and graduate skills, gender and regional disparities to access to equality education (Gichui, 2015). These challenges have continued to undermine the overall outputs and independence of universities.

Inadequate funding remains a thorn in the flesh of university governance. This external pressure and the limitation on when and how to access government funding has undermined university autonomy. This was even more critical when the government faced budgetary deficits and had to rely on donor agencies to fill the shortfalls. In the era of liberalization the government was forced to accept very stringent conditions in order to receive World Bank funding for universities. These conditions among others led to the introduction of tuition, the capping of enrolment and reforming the student loan scheme among others (Maobe and Liping, 2020). The introduction of cost sharing was perhaps one of the hard-hitting measures especially on issues of access and equity. Liberalization demands and the declining financial support from governments undermined the overall operations in universities. According to Sifuna (1998) these policies presented two dilemmas; on the one hand, they led to too much control of universities that destroyed the academic freedom that they were known for. On the other hand, when left with much autonomy, universities became lethargic to the society needs that they were supposed to serve.

The external governance structures and pressures from the government and other lending agencies had a direct impact on the internal management of both public and private universities. For public universities, it is the University Act that provided for their internal governance that consists of University Council, the Senate, the University Management Board, the student representation and related committees. Although the Vice Chancellor is at the apex of the university governance structure, all the other organs have specified roles in the administrative management structure. Overall, the administrative management

of public universities in Kenya lies in the hands of the university councils. According to Mulinge et al., (2017), university councils are there to safeguard university autonomy particularly the influence from the state and at the same time, act as a platform for good governance. However, the university councils are made up of majority members who are appointed by the Cabinet Secretary in the Ministry of Education (MoE). Thus, when we examine the centre of authority based on the appointing authority, the government appears to have a firm control or influence on the decisions made by the councils of public universities.

The governance situation in private universities, though a little different in structure follow the same script. This is because their governance structures are subjected to the same legal framework drawn from the University Act (2012). Consequently, most of them have been progressively revising their charters to ensure they conform to provisions of the Act. The Act has allowed the private universities to establish additional governance organs such as Board of Trustees that are responsible for appointing the university chancellor and members of the university council. The difference here is key in relation to academic freedom and university autonomy particularly from direct the state control. Also of note is that this flexible governance structure of private universities tends to make them both less rigid and bureaucratic. Yet, beneath the veneer of autonomy, is the existence of overarching controls from the government agencies that equally bogs down the efficient management and performance in the sector.

Emerging Policy Reforms and the Shifts towards Public-Private University Partnerships

Looking back into the history of university reform in Kenya one can clearly envisage a trend in which there has been an attempt by the government to balance between the issue of access and cost through encouraging the entry of private players. The entry of the latter, though happening on unequal terms, has cultivated a niche that can hardly been ignored. Efforts towards collaborative synergies between public and private players have yielded significant positive outcomes. As of 2022, Kenya had 68 universities, out of which 35 were public and 33 privates. This denotes an increase of 52 percent for public universities and 10 percent for private universities, from 2015. Accordingly, Kenya had

approximately 563,000 students pursuing a university degree in the 2022-2023 academic year (Statista, 2024). The broadened access to higher education has had other positive outcomes, including saving the country revenue from students who would otherwise seek higher education opportunities from outside the country.

The figures from 2015 onwards also reveal the positive impact of the partnership between public and private universities in addressing issues of equity and access to higher education. This is the period that witnessed an upsurge in the numbers of students scoring the minimum requirements for university admission (grade C+, plus) in Kenya Certificate of Secondary Education (KCSE). For instance, 174,290 students qualified for university admission in 2015 against the available spaces of 70,000 in the public universities (Nguta, 2016). This meant public universities could only absorb 40.2% of the qualified students. Due to this, private universities had to form an alternative vent to enhance access and in so doing help the government offer more space for the rising demand for university education. Private universities thus formed an alternative avenue to increase transition in Kenya's higher education system.

From the 2016/2017 academic year the government started enrolling government-funded students to private universities, a development was not only surprising but given the demand, one that appeared realistic. By opening up private universities to government funded top performing students, there was an overall improvement in the quality of students across both the private and public universities. According to Wambua (2003) admission of students with better quality grades contributes more to university performance. In comparison to other predictors, the attraction of bright students is certainly one of the key determinants of overall quality. More importantly the government-funded students admitted to private universities may also have the advantage to access better facilities, appropriate class sizes than most of the public universities can provide. Some of the private universities such as USIU and Strathmore have cut their niche in specific programs such as digital marketing, entrepreneurship, data science, and multimedia design that may not be available in public universities. These programs cater for specific fields, industries, or emerging trends. More important also is that student in private universities tend to complete their courses on time because their institutions

are hardly stoked by perennial closures of public universities arising from lecturers and student strikes.

It is worth of note however that the policy of placing government sponsored students in private universities coincided, during the 2016/2017 academic year, with another policy that led to the drastic decline of university enrolments. During this period, controversial but stringent policies were enacted regarding the way the university entry Kenya Certificate of Secondary Education Examinations were being set and managed in the country. The proposed policies were meant to, among other things, to check on what the ministry considered to be the rampant cheating in the previous university examinations that had resulted into the high number of university qualifying students that attained the minimum grade C+ and above. These measures resulted into a massive decline in the number of university qualifying candidates. For instance, at the release of the 2016 KCSE results in late December, only 141 candidates scored grade A which is the highest possible grade for university entry. These results were quite alarming given that there were 2,636 candidates who had attained the same grade in 2015. In terms of the overall performance, only 88,928 candidates attained C+ and above in the 2016 examination compared to 169,492 candidates who managed the grades of C+ and above in 2015, representing a 47 per cent drop in the number of students who qualified for university (DNA, 2016; Star, 2016). In 2015, out of the 169,428 candidates who managed to attain the minimum university grade of C+ and above, only 74,389 were selected to join public universities due to limited spaces, with the cut-off being set at a B of 60 points for male candidates and B of 58 points for female candidates. The rest of the candidates either joined public universities as private/self-sponsored students or were admitted to the various private Universities.

These reforms far from leading to the drastic decline in the number of students enrolments had other ripple effects in the entire higher education sector. The first and most obvious one is that the huge pool from which the private and public universities were drawing from and who could pay for their private education was clearly decimated. For instance, those who qualified to join university were 88,928 against 96,000 vacancies in public universities, meaning all the qualified candidates could be catered for within the available spaces in public universities with few spaces unfilled. This obviously provided a warning shot to the future existence of not only private

universities but also for the continued existence of self-sponsored programs in public universities.

The second consequence of this was that the alternative revenue that was previously being derived from private students through self-sponsored programs declined exponentially. This was real given that the pool from which public university self-sponsored programs and private universities could draw their students from declined. The drastic drop in enrolments therefore had a direct impact on the revenue bases of these universities. This was especially worse for some public universities that had spent massive resources, most of it borrowed, to set up hundreds of satellite campuses in anticipation for the increased demand for higher education due to the previous surge in student numbers. In addition, the Universities had hired hundreds of part time and full-time staff to teach both the regular and self-sponsored student. The same investments were equally witnessed in private universities.

The third direct impact of the 2016/2017 reforms was that both public and private universities started strategizing on new ways of keeping them financially afloat. For some public and private universities, the option was to close several satellite campuses and scale down on their staff. Baraton University for instance, closed all its four satellite campuses, citing low enrolment, affecting about 600 undergraduate and graduate students and leaving the fate of hundreds of non-teaching staff unknown. The Kenya Methodist University (KeMU) laid off 150 lecturers and closed campuses in three counties due to these new dynamics affecting the education sector in the entire Kenyan economy. Over the years however, it would seem, the decision to place government sponsored students to private universities provided some financial lifeline to some of them. On the other hand, the policy also tended to officially bridge the public-private binaries in Kenya's higher education. This created what can be described as a public-private university in one.

This policy intervention attracted diverse reactions from different stakeholders in Kenya's higher education. Whereas there are those who supported the move and saw it as a clear effort by the government to bridge the public-private and private-public binaries within the sector, its critics, on the other hand, saw a clear effort by the government to abdicate its core responsibility in financing and provision of higher education, a public good, to its citizenry. There has been a compelling claim for

private universities and its students to be funded by the government due to their contribution to national development. Evidence has shown that between the academic years 2015/16 – 2022/23, private universities received a total of 155,016 state-funded students and, therefore, accessed government funds to cater for their education. In the 2022/23 academic year, however, the newly elected United Democratic Alliance (UDA) government stopped these arrangements citing inability to audit the financial utilization of the funds allocated by the government to private institutions. Even with this latest decision, the discussion on government funding of private universities will remain an important one in the higher education sector.

Conclusion

The public and private university sector has undergone significant transformations both in historical and contemporary contexts. The issue of university regulation is as old as university itself. Yet, regulation, whether from external or internal forces should be balanced against the universities' core mandate. The university serves as a key pillar to society since it contributes to the development of a successful manpower and boosts economic growth, competition and knowledge. Universities can foster individual benefits if their regulatory frameworks can successfully provide individuals with the opportunities to develop critical thinking skills and learn from experts in their different fields. The essence of university autonomy is important as far as universities can determine their objectives and determine how those objectives can be achieved. Both autonomy and academic freedom are important for the effective running of universities, but their entrenchment should be handled with caution so that their enjoyment does not lead to the compromise of the institutions' unique roles in society. As this paper has demonstrated, since their inception to date, there

have been significant policy shifts and reforms that have realized mixed outcomes in terms of university autonomy and academic freedom. Gleaning from the past, several positive developments have been realized in the strides towards university autonomy. Even during colonial, independent government, international and national pressure, all of which have tended to aggravate the financial instability of universities, institutional autonomy has not just been a desirable but a necessary component in the advancement of higher education. Like with all systems, the government has over the years initiated various policy reforms to bring universities under check and convert them into allies in their varied missions. The greatest of these reforms, coming as they did during the era of liberalization were happening when the demand for university education was at its peak and when the contest between public and private university for the higher education space was becoming stiff. The specific case of the University Act (2012) that not only provided the guidelines for the regulation of both private and public universities was emphasized. This Act also created bodies, CUE, KUCCPS and UFB, that were mandated to coordinate and provide monitoring and standardization of universities. Added to this was the government's continued policy of appointing university councils and senior university managers. Even with all this, it is inaccurate to claim that universities have become fully dependent to the government. The development towards autonomy could be gradual but it is certainly gaining some milestones. It is therefore our contention here that over time, most Kenyan universities will make significant gains towards autonomy. However, this autonomy need to be nurtured and handled with caution in order for the institutions to safeguard their mandates as well as their aspirations towards quality and standards.

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INTRA-AFRICA PARTNERSHIPS AND COLLABORATIONS OF GHANAIAAN UNIVERSITIES: STATUS AND REASONS

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Abstract

The concern for Higher Education Institutions (HEIs) to engage in partnerships and collaborations have heightened in recent times. This is because partnership and collaborations are perceived to offer enormous benefits to HEIs. Interestingly, existing literature mostly reports on partnerships and collaborations between HEIs located in the Global North and South resulting in a dearth of knowledge on the intra-Africa partnerships and collaborations that exist among HEIs located within Africa. This is what this study seeks to uncover. Underpinned by the Social Exchange Theory (SET), a qualitative methodological approach and following a case study design, fifteen purposively selected key informants from five (5) HEIs including Heads of International Programmes/ Relations office, Grants and Research Office, Academic Registrars and Deans, and Heads of Departments were in-depth interviewed together with document analysis to obtain data for the study. Subjecting the data to thematic analysis, it emerged that Ghanaian HEIs engage in intra-Africa partnerships and collaborations. The findings also showed that intra-Africa partnerships and collaborations compared to the partnerships and collaborations Ghanaian HEIs have with HEIs located in the Global North is insignificant. Further to this, the findings revealed that, the status of the few intra-Africa partnerships and collaborations that existed in Ghanaian HEIs were inactive. The study concludes that the value addition of intra-Africa partnerships and collaborations to the operations of Ghanaian HEIs is minute and requires urgent attention.

Keywords: Partnership, Collaboration, Intra-Africa, Higher Education, Ghana.

Introduction

Partnerships and collaborations between HEIs is not a new phenomenon but can be tracked to the seventeenth century and colonial era, when the colonial powers shipped their educational institutions abroad, imposing the academic practices and values desired by the dominant university in the metropole on the colonial institution (Al-Youbi, Zahed & Tierney, 2020). Even though most of these relationships were severed by colonial institutions after their countries gained independence their operations seemed to be guided by the frameworks of the dominant universities. In recent times, the call for HEIs to partner and collaborate with other HEIs has intensified. Probably, this may be because of the role HEIs are required to play in the knowledge economy and the benefits they seek to gain from partnering and collaborating with each other. Partnership and collaboration differ in meaning. Partnership refers to organisational pairings that results in a college or university unit's working with another unit collaborator at a different institution or with businesses or community agencies (Eddy, 2010). Thus, this initiative can take several forms-between or among institutions through departmental alliances, across institutions or with university programs that pair with business or community agencies (Eddy, 2010; Al-Youbi, Zahed & Tierney, 2020).

Collaboration on the other hand may involve individual faculty working together. Even though partnership and collaboration differ in meaning, both are underpinned by a similar principle. Both concepts are based on the notion that that individual partners cannot accomplish their goals on their own and that partnership and collaboration create win-win situation (Eddy, 2010; Jowi, 2024). Partnerships and collaborations are key to supporting HEIs realize their mandates and respond adequately to growing societal challenges (Jowi, 2024). Due to this, partnerships and collaborations have been spearheaded by continental, regional and national frameworks. In Europe, EU policies, frameworks, programmes and networks such as European Education Area (EEA), the Bologna framework, European university alliance, Erasmus+, Horizon 2020, University without Walls vision 2030, the Digital Education Action Plan (DEAP) and the European Digital Education Hub (EDEH) all support partnership, coordination and collaboration among HEIs (EUA, 2021; European Commission, 2022a; Marie Skłodowska-Curie Actions, 2022).

The quest to see HEIs partner and collaborate seems to be a global phenomenon. In Africa, partnerships and collaborations between HEIs is not a new phenomenon. However, there has been acceleration on the call for HEIs to partner and collaborate over the past few years, and this might be due to the shift of focus by governments and development partners from higher education to basic education advocated by the Structural Adjustment Programmes (SAPs) (Jowi, 2024). This neglect severely impacted on the core mandates (Teaching and learning, research and community service) of African universities. At the continental level, the African union has recognised the deficiency and to rectify this, has developed the Continental Education Strategy for Africa (CESA) to

guide the revitalisation of higher education systems of member countries (CESA, 2016). The expectation of the AU in line with the revitalisation efforts of member countries require enormous investments and support, which the budget of member countries cannot support. This condition seems to make deepening partnership and collaboration the preferred alternative to enable African HEIs to realise their core mandate. A key player in this revitalisation effort is the EU. The European Commission's and the European External Action Service's vision of the future Africa-EU and the Joint Africa-EU Strategy (JAES) are frameworks developed by the EU to promote partnerships and collaboration among HEIs in located in Europe and their counter parts in Africa (European Commission 2024).

The quest to deepen partnership and collaboration trickles down from the EU bloc to individual European countries. These initiatives include the UK-Africa partnerships on research, science and innovations, Association of Commonwealth Universities (ACU), the UK Research and Innovation (UKRI), the UKAid's Strengthening Research Institutions in Africa (SRIA) initiative support HEIs and research in Africa (Jowi 2024). Similarly, the German government partner and collaborates with HEIs in Africa via German Academic Exchange Service (DAAD) and German Development Cooperation (GIZ), on postgraduate training, research, support for African centres of excellence (Jowi, 2024). Literature also documents partnerships and collaboration drives by the Norwegian and Swedish governments with HEIs in Africa through Norwegian Partnership Programme for Global Academic Cooperation (NORPART) and Swedish International Development Agency (SIDA) (Jowi, 2024). Similarly, Africa has higher education partnerships with some Asian countries such as China and Japan through

Forum of China–Africa Cooperation (FOCAC) and Japan International Cooperation Agency (JICA) (African Union, 2024; Jowi, 2024). International partnerships and collaborations are critical if HEIs are comfortably execute their mandate, but this engagement has often been accused of resulting in unintended outcomes and even risks (Jowi, 2024).

Probably, the framework on which these partnerships and collaborations are based on for engaging HEIs in Africa are developed in developed by these international partners and their HEIs without inputs from African HEIs as a result failing to achieve its intended results. Due to this, some scholars have called for the design of equitable, inclusive and meaningful partnerships that can yield better outcomes and to minimize the downsides of unbalanced collaborations (Ngara, 2012). To tilt the partnerships and collaborations that have historically been mainly between African universities and universities in other world regions towards HEIs in Africa, some have called for the intensification of intra-Africa collaborations. Already, the Association of African Universities (AAU), together with some of Africa’s major research and higher education (HE) constituencies, including , the Council for the Development of Social Science Research in Africa (CODESRIA), the African Academy of Sciences (AAS), the African Research Universities Alliance (ARUA), the Inter-University Council for Eastern Africa (IUCEA), and the Association of West African Universities (AWAU), are embarking on an initiative to co-create a framework for advancing a transformative mode of academic research collaborations between African Universities (Association of African Universities, 2024). Other networks such as the African Research Universities Alliance (ARUA), the Regional Universities Forum for Capacity Building on Agriculture (RUFORUM), the African Network for Internationalization of Education (ANIE), the African Consortium of Higher Education Researchers (ACHER), the International Education Association of South Africa (IEASA) have established platforms to promote partnerships and collaborations among HEIs in Africa (Jowi, 2024).

Like her peers, Ghanaian HEIs are expected to be involved in the intra-Africa partnership and collaboration as espoused by the Continental Education Strategy for Africa (CESA), however there is dearth of knowledge on the status and reasons for Ghanaian HEIs involvement in intra-Africa partnership and collaborations. This is what this study seeks to

unpack deploying Social Exchange Theory as its analytical tool.

Theoretical orientation of the study

The Social Exchange Theory (SET) served as an analytical lens for the study. The SET was initiated by George C. Homans in 1958. Since then, other scholars such as John Thibaut, Harold Kelley, and Peter Blau have contributed to the development of SET but with diverse focus (Ahmad, et al., 2023; Jonason, & Middleton, 2015). This seems to have armed SET with the capacity to be deployed in diverse fields including sociology, psychology, economics, and education.

Social exchange theory is underpinned by the assumption that social behaviour such as partnerships and collaboration pursued by Ghanaian HEIs is the result of an exchange process. Social exchange occurs between two or more actors (Ahmad, et al., 2023; Cropanzano, 2017). These actors can be individuals such as faculty members/non-academic staff or corporate groups such as HEIs or specific offices, departments and units of the HEI. Social exchange occurs between two or more actors (faculty members/non-academic staff, HEIs, offices, departments and units) who are dependent on one another for valued outcomes. The valued outcome in the higher education space may include tangible goods and services such curriculum and policy development, joint publications, joint research projects, joint conferences, faculty and student exchange, joint degree programmes, postgraduate supervision, and sharing of teaching and learning resources or socially valued outcomes such as approval or status (eg. UNESCO Category 2 centres/institutes and UNITWIN/UNESCO Chairs).

According to SET, actors (faculty members/non-academic staff, HEIs, offices, departments and units) weigh the potential benefits and risks of their social relationships. When the risks outweigh the rewards, actors will terminate or abandon the relationship. This implies that actors essentially take the benefits of a relationship and subtract the costs in order to determine how much it is worth. Cost as depicted in SET constitute efforts and resources (human, funds, time, reputation etc) an actor (faculty members/non-academic staff, HEIs, offices, departments and units) invest in a social relationship such partnership and collaboration. Benefits on the other hand, is a valuable

outcome (curriculum and policy development, joint publications, joint research projects, joint conferences, faculty and student exchange, joint degree programmes, postgraduate supervision, and sharing of teaching and learning resources) an actor (faculty members/non-academic staff, HEIs, offices, departments and units) obtains from a social relationship such as partnership and collaboration. This exchange process is referred to as the “norm of reciprocity” by Gouldner (1960). SET advocates that the valuing of the benefits and costs of each relationship determines whether or not an actor will choose to continue a social association because the main purpose of social exchange is to maximize benefits and minimize costs (Hwang, 2016). The SET is deployed as the analytical tool to unpack the status and reasons of inter-Africa partnerships and collaborations of Ghanaian universities.

Methodology

We deemed qualitative methodology suitable for this study. This is because we sought to gain in-depth understanding of inter-Africa partnerships and collaborations of Ghanaian HEIs from their point of view and to present the narrative in a thick description (Ary et al., 2014). This inquiry position made case study design suitable and enabled us to obtain an in depth appreciation of inter-Africa partnerships and collaborations of HEIs in its natural real-life context (Cohen, Manion, & Morrison, 2011).

We purposely selected fifteen key informants from five HEIs. These included five (5) Heads of Heads of International Programmes/Relations office, one (1) staff from Grants and Research Office, three (3) Academic registrars, three (3) Deans, and three (3) Heads of Departments. These persons were invited to participate in the study because they are information rich (Patton, 2002). They were in-depth interviewed for approximately 45 minutes in their offices because the venue was convenient for them. We guided our interviews with an interview guide with questions that focused on our research questions. This notwithstanding, we were flexible and asked follow-up questions when we deemed necessary (Rubin, & Rubin, 2011). The interviews were audio taped with Infinix Hot 12 phone. This device has components that enhanced the audibility of our interviews for easy transcription. Before each interview, interviewees were offered consent form to sign to suggest their willingness to participate.

Additional data was also sourced from Memorandum of Understanding (MOUs) on HEIs partnerships and collaborations. We photocopied excerpts of the MOUs that were relevant for the study and followed the Preview, Question, Review and Summarise PQRS framework to extract data from the excerpts of the document (Gillian, 1990). The data from the interviews were transcribed. Codes were then developed from the transcription and the data extracted from the documents. These were categorised and analysed thematically. The themes that emerged were: status of intra-Africa partnerships and collaborations, value additions of intra-Africa partnerships and collaborations, and reasons for intra-Africa partnerships and collaborations are presented in a narrative form. This methodology generated robust, empirically derived data needed to examine the research questions. In all this, anonymity and confidentiality was ensured for the participants and the HEIs they work for. The findings and discussion are presented in detail in the subsequent section.

Findings and discussion

In this section we detail the findings and discuss the themes that emerged from the data analysis keeping in mind the research questions stated above. We deem these as capable of answering the research questions which were:

- What is the status of intra-Africa partnerships and collaborations of Ghanaian universities?
- What has been the value-additions of intra-Africa partnership and collaborations of Ghanaian universities?
- What are the reasons for intra-Africa partnerships and collaborations of Ghanaian universities?

Status of intra-Africa partnerships and collaborations

The findings indicate that, Ghanaian universities engage in partnerships and collaborations with other HEIs in Africa. It emerged Ghanaian universities have less partnerships and collaborations with HEIs in country and within Africa. A quote from a participant provides evidence to this claim:

We have collaborations mostly with institutions in USA, Europe and China for student

exchange, but we have now established collaboration with university of Gambia. We are currently laying structures and hope we can do joint degree programme for B.Tech Purchasing and Supply.

A participant retorted:

My university is a private one. So we always look at partnering with the universities in the Europe, America and Asia and hardly sign MOU with institutions in Africa. Currently we are not collaborating with any HEI in Africa.

The quotations reflect the views of the remaining participants on the status of intra-Africa partnerships and collaboration of Ghanaian universities. Ghanaian universities are interested in engaging with HEIs outside the African continent. This interest seems to have shifted their focus from intra-Africa partnership and collaboration making their dealings with HEIs located in Africa insignificant. Even the few partnerships and collaboration they have with HEIs located in Africa are dormant.

Another participant confirms this:

I have been working in this international office for some time now. I can say that we focus more on collaborating with institutions in the Global North because of the resources they wield. We used to have collaboration with the University of Calabar in Nigeria for staff exchange but the MOU has been dormant for now.

This resonates with Jowi 2024 assertion that partnerships and collaborations have historically been mainly between African universities and universities in other world regions. Probably, Ghana's historical links may be the cause of the status of intra-African partnership and collaboration in Ghanaian universities. In line with SET, the theory argues that actors essentially take the benefits of a relationship and subtract the costs to determine how much it is worth. This suggest that if Ghanaian universities perceive the benefits they seek to derive from intra-Africa partnership and collaboration to be lower than the cost they may incur in engaging in this endeavour, they will not engage in endeavour or even if they engage in it, the partnership and collaboration may be inactive in due course. This is a worrying situation because intra-Africa partnership and collaboration has been perceived to be key in the pursuit of African integration (Asefua, 2024).

Value additions of intra-Africa partnerships and collaborations

The issues that emerged in the study included participants' views on the value-addition that results from Ghanaian universities engagement with HEIs located in Africa. A participant claimed:

My university is a private Christian university. We have operated for over 50years old. Since the university's establishment, we have been partnering with some universities in Africa. It is through the partnership we have with a private university in Kenya that I had the opportunity to go there and pursue a master's degree in communication studies.

Another participant added:

We are a technical university, so we are mandated to offer technology related programmes like the university you came from. My department has signed an MOU with the mechanical engineering department of your university. The arrangement permits us to use their mechanical engineering workshop to train our students because we are not resourced like your institution.

A participant narrates it this way:

When we established our department, we felt we are competing with your institution, but we have realised that we have to cooperate and collaborate rather. So, we have liased with Prof.xxx of the Faculty of Built Environment and through that we are organising a conference together to help develop the field in the country. I had to let you wait when you arrived because we were having a meeting on our upcoming conference in 2025 dubbed "Promoting Research, Innovation and Industrial Partnerships for Sustainable Development".

Another participant noted as follows:

We have started postgraduate programmes this year in various disciplines, but our biggest challenge is that most of the faculty lack the capacity to supervise the research projects of the students, so we have turned to some supervisors at a technology university in South Africa to help us for free.

So currently, the arrangement is that one supervisor is selected from my university and one from the technology university in South Africa. This is helping our students to progress, and lecturers are also learning from the mentorship.

Judging from all the quotes from the participants, some benefits have been derived from partnerships and collaborations Ghanaian HEIs have with HEIs located in Africa. This included scholarship and capacity building for staff, joint conference, sharing of workshop for teaching and learning and postgraduate supervision. These benefits derived out of the intra-Africa partnership and collaboration may seem minute, but they seem to have positively impacted on the operations of these case universities. This situation aligns with the Social Exchange Theory that actors weigh the benefits and costs of each relationship and that determines whether an actor will choose to continue a social association. Probably, the universities value the benefits, and this may be the reason why they still maintain their relationship with HEIs located in Africa even though the relationship is insignificant compared with their dealings with HEIs located in the global North.

Reasons for intra-Africa partnerships and collaborations

The findings revealed the reasons that underpinned Ghanaian universities partnership and collaboration with HEIs located in Africa. One participant pinpointed the role of universities in African integration as underpinning their partnership and collaboration with African HEIs. An excerpt from one of the Memorandum of Understanding one university had with a HEI located in Africa had its source from page 7 of the CESA document. An excerpt from an MOU portrayed this:

Harmonized education and training systems are essential for the realization of intra-Africa mobility and academic integration through regional cooperation.

Another participant retorted:

We partner with some of the HEIs because of proximity of their location to ours so that we can share resources together. For example, because of our MOU with your

institution we are able to use the mechanical engineering workshop to train our students.

A participant presented this explicitly:

In this modern age staff and student mobility is very important. Normally it becomes difficult with securing visas for students and staff if they want to embark on short term mobility but securing visas for students and staff to travel within Africa is a bit easier. Some of the countries do not even require visa if you are a Ghanaian passport holder.

A participant indicated:

The main reason why we partner with institutions in Africa is that unlike the HEIs located in Europe, America and Asia, the ones located in Africa acknowledges us as equal partners in all the themes we focus on in our Memorandum of Understanding without strings attached. This is our motivation for this endeavour.

It could be inferred from the quotes above that Ghanaian HEIs reason for engaging in intra-Africa partnership is diverse. The diverse nature of the reasons provided by the participants may likely be because of the diverse nature of the case institutions. Whilst some participants mentioned academic mobility, others highlighted respect and recognition as an equal partner. African integration and proximity also featured in the reasons some participants professed. These issues were vital in HEIs dealings with HEIs located in Africa. These seem right because in partnership and collaboration engagements, if partners are not perceived as equal, the tendency for the relationship to collapse is high (Eddy, 2010). When this happens, the intended objectives of the partnership and collaboration may not be achieved. This view aligns with Jowi 2024 who argues that most countries in Africa and their higher education systems lack policy frameworks that guides them in their partnership and collaboration engagements with HEIs located in the Global North. Instead, they rely on partnership and collaboration frameworks designed for the HEIs located in the Global North to their disadvantage. This situation seems to have heightened the quest for South-South collaboration in Africa's higher education sector to enable African HEIs to engage with HEI who will treat them as equal partners.

Conclusion

This study has through SET and qualitative approach has unpacked the status, value additions and the diverse reasons Ghanaian HEIs engage in intra-Africa partnership and collaboration. It emerged from the study that intra-Africa partnerships and collaborations are insignificant compared to the partnerships and collaborations Ghanaian HEIs have with universities located in the other parts of the world. The study has also shown that the few intra-Africa partnerships and collaborations that exist in Ghanaian universities are dormant and this to the perceived low benefits the institutions seek to gain. The benefits (scholarship and capacity building for staff, joint conference, sharing of workshop for teaching and learning and postgraduate supervision) even though minute has had positive impact on the operations of the case

universities. Various reasons were also highlighted as behind the reasons why Ghanaian HEIs engage in intra-Africa Partnerships and collaborations. The study concludes that Ghanaian HEIs should re-direct their efforts towards intra-Africa partnership and collaboration because this avenue can open up new opportunities HEIs.

Limitation of the study

The study was conducted in five (HEIs) in Ghana. Due to this, we do not intend to generalised our findings. Instead, the findings of the study relates to only the participants who participated in the case universities. This do not mean that implications cannot be drawn from this study for universities located in similar context.

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INNOVATIVE APPROACHES FOR FUNDING INFRASTRUCTURE AND RESEARCH

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Abstract

Africa's universities are currently navigating a complex funding landscape to support infrastructure and research. The traditional funding models that most of these universities have relied on appear to be limiting in scope and have rather entrenched dependence on national governments, thereby limiting institutional autonomy. Addressing these challenges will require a new business model. Several opportunities exist in obtaining funding to support infrastructure and research by leveraging the advantages of building knowledge clusters, advocating for regional groups to support long-term partnerships for research and infrastructural development, and relying on public-private Partnerships, the African Diaspora, National Research Councils, and other Philanthropic Organizations that support research. This presentation will show how the African Research Universities Alliance (ARUA) is pursuing many of these innovative approaches for funding to boost the knowledge ecosystem in Africa. Of particular importance are the Alliance's use of its 13 Centres of Excellence and the 21 African-Europe Clusters of Research Excellence (CoREs), a partnership with the Guild of European Universities, to access different sources of funding to improve the Research and Innovation (R&I) ecosystem to address key societal and scientific challenges framed by the AU-EU Innovation Agenda.

Keywords: Universities, research, innovative, funding, infrastructure.

Introduction

Africa's universities are significantly constrained concerning the resources they need to ensure they become globally competitive and contribute significantly to the transformation of the African continent. Many of them lack essential infrastructure for research, and this includes outdated equipment, poor ICT, ageing scientists, and inadequate systems to support scientific research (Cloete et al, 2018). This is affecting education quality and the ability to conduct meaningful research. Africa accounts for less than 3 percent of global scientific publications. The continent accounts for only 0.3 percent of global R&D and 0.5 percent of patent applications. Africa's Gross Expenditure on Research and Development (GERD) of 0.45 percent of GDP remains well below the global average of 1.7 percent and the AU target of 1 percent (World Economic Forum, 2023). More worrying is the evidence that Africa loses several skilled personnel annually to developed countries (Bhorat, Meyer, Mlatshei, 2002).

While this challenging situation may have arisen due to historical, economic, structural, and political factors, it is not difficult to show that the underlying cause is the complex funding landscape that most universities must navigate every year, particularly to support infrastructural development and research. Indeed, in many African universities, the most clarion call by their leaders has been the need to urgently seek innovative funding strategies to undertake comprehensive reforms to address the many challenges that they face with research.¹

According to Teferra and Altbach (2003), African universities are most financially challenged because of 1) the pressures of expansion and 'massification'; 2) the economics that make it difficult, if not impossible, to provide increased funding for higher education; 3) a changed fiscal climate and policy direction induced by multilateral lending agencies such as the World Bank and the International Monetary Fund; 4) the pressure of other social and health issues on government budgets; 5) the inability of students to afford the tuition rates needed for fiscal stability; and 6) misallocation of available financial resources, such as the provision of free or highly subsidised accommodation and food for students. These challenges are still relevant several decades later. Addressing these challenges requires a comprehensive approach that includes increased public investment, improved governance, innovative funding models, and enhanced collaboration between educational institutions and industry to ensure sustainability and growth in higher education across the continent.

How universities are funded and the quantum of the funding available is important for the attainment of universities' cherished goals, viz. teaching, research, community (public) service, and other contextually

determined goals (Wangenge-Ouma & Cloete, 2008). This means it is important that innovative approaches for funding must be continuously sought. This paper contributes to the workshop by tackling the difficult topic of how universities are funded, with an attempt to propose innovative approaches that can adequately address the many challenges that they face. We discuss the funding landscape of Africa's universities, and the dilemma of the funding models, and explore the issue of institutional autonomy and the extent to which it has affected university funding. Finally, we show how the African Research Universities Alliance (ARUA) is innovating to address these issues.

The Funding Landscape of African Universities – the traditional sources

African universities have relied on different models to fund their infrastructural and research needs. The options have varied from the reliance on *taxpayer-funded models* to the use of *cost-sharing arrangements* and the more recent options of *block grants*, *scholarships* and *loans*, as well as *research grants*, etc. The *taxpayer-funded model*, which was prevalent in the post-colonial period, involved universities receiving funding directly from the state. As discussed by Oketch (2016), the main intention of the state funding universities was to guarantee that higher education was accessible to all citizens. The approach aimed to build a skilled workforce to replace departing colonial administrators and promote national development. Emphasis was on ensuring equity and justice in terms of education access. This model, however, had several difficulties. It has been criticised as being unsustainable because of the growing demand for higher education in post-colonial Africa, stagnant economic growth (implying lesser government resources) as well as the reality in many

¹ <https://www.project-syndicate.org/commentary/how-to-finance-higher-education-africa-by-celestin-monga-2024-02>

advanced economies where funding from the state is limited to certain expenditures. It is challenging for governments to sustain this model in the long term due to inadequate tax revenues. The model effectively supports the elite and a small number of universities, with a focus on fiscal rigour (Oketch, 2016).

In response to the challenges of relying solely on the state to fund universities, some *cost-sharing arrangements* were adopted in the early 1990s (Hall Martin, 2011). Under this arrangement, the full cost of education is shared between the students and the state. Typically, students contribute to their education costs through tuition fees or other forms of financial support. This shift aimed to alleviate the financial burden on governments while promoting greater institutional autonomy. Oketch (2023) argued that this approach gained prominence across multiple countries in Africa. Indeed, the earlier model was not immediately abandoned. Rather, it coexisted with this new framework where traditional free higher education for state-funded students is maintained, effectively coexisting with the parallel track that involves cost sharing. This model had issues with equity and access, particularly for students from lower socio-economic backgrounds (Hall Martin, 2011; Oketch, 2023).

Aside from these two predominant models, some countries have experimented with different models. For instance, Ghana experimented with the *block grant*, where the government provided a fixed amount of funding to universities annually. This method allowed universities in Ghana some flexibility in budgeting but also required accountability for spending (Fredua-Kwarteng, 2022). Kenya also introduced a new Higher Education Funding Model in 2023 that emphasises *scholarships and loans* based on financial need rather than blanket government funding (Munene, 2024). Many countries have also implemented *student loan programs and financial aid systems* to support those in need. These programs aim to provide financial assistance to students who may not afford tuition fees upfront but can repay loans after graduation when they secure employment (Oketch, 2023). More recently, universities are being encouraged to generate their 'own' revenue through *research grants, partnerships with industries*, and other innovative funding mechanisms. This model reflects a broader trend toward diversifying funding sources beyond government support. The focus on research as a way of enhancing the visibility of the university 'brand' through rising global ranking

systems, attracting research funding and international staff and students largely accounts for the reliance on research grants (Swartz et al. 2019). Typical research universities in Africa are now able to attract large grants for research from different funding sources. Most of these external funds directly go into infrastructure and research funding (Harrak, 2014).

In the face of limited state funding for higher education, there has been a need for many universities to generate 'third-stream' income to supplement the institution's income from student fees and government subsidies. Some universities increased their intake by developing *distance education* and *online programmes* as well as other *specialised programmes* that charged full fees towards tuition (Teferra & Altbach, 2003; Mohamedbhai, 2014; and Mve, 2021). Indeed, online programmes became very popular following the COVID-19 pandemic, when most institutions started using virtual platforms.

The models of funding higher education in Africa have thus evolved in response to economic pressures and demands for increased access. While taxpayer-funded models laid the foundation for higher education post-independence, the sustainability of these approaches is increasingly questioned. The move towards cost-sharing, block grants, entrepreneurial initiatives, and student loans reflects a necessary adaptation to the changing educational landscape in Africa. As countries strive for more robust and equitable systems of higher education financing, ongoing dialogue among stakeholders will be crucial in shaping future policies.

The Dilemma of the Funding Models and Africa's Research Culture

The traditional sources of funding for African university's infrastructure and research have never been adequate. Many African governments still struggle to allocate adequate funding for higher education due to limited tax revenues and competing demands from other sectors. This has led to a funding crisis in universities, where essential resources like laboratory equipment and teaching materials are often lacking (Teferra & Altbach, 2004). Due to low government investment, universities often turn to donor agencies for financial support. The reliance on these sources can compromise academic autonomy as funding from these sources usually comes with specific conditions that may not align with local

educational needs. The World Bank/IMF have often been criticised for advocating austerity measures that further limit educational funding, undermining the ability of universities to fulfil their mandates (Swartz et al. 2019).

The limited funding for research and infrastructure in Africa is reflected in most African universities not contributing much towards global knowledge production. Currently, African researchers contribute less than 3% of global knowledge production (Figure 1). Most of this research is from South Africa. The top research areas in Africa remain Environmental Sciences and Public, Environmental and Occupational Health (Figure 2). Publications in these areas are mostly funded with support from international

organisations. Rarely do African universities publish in typical. Science, Technology, Engineering and Mathematics (STEM)-related fields. Gross Expenditure on R&D (GERD) in Africa remains well below the world's average – less than 0.45% of GDP as against the world average of 1.7% and AU target of 1% (Figure 3). Africa has one of the lowest numbers of researchers per million inhabitants. The continent has about 94 researchers per million inhabitants as of 2021 (Figure 4). This cannot be compared to the more than 4000 per million inhabitants in North America and Western Europe. When it comes to female researchers as a percentage of total researchers, Africa has only 32 female researchers as a percentage of total researchers (Figure 5).

Figure 1: Africa World Share and Publication Output (articles and reviews only)

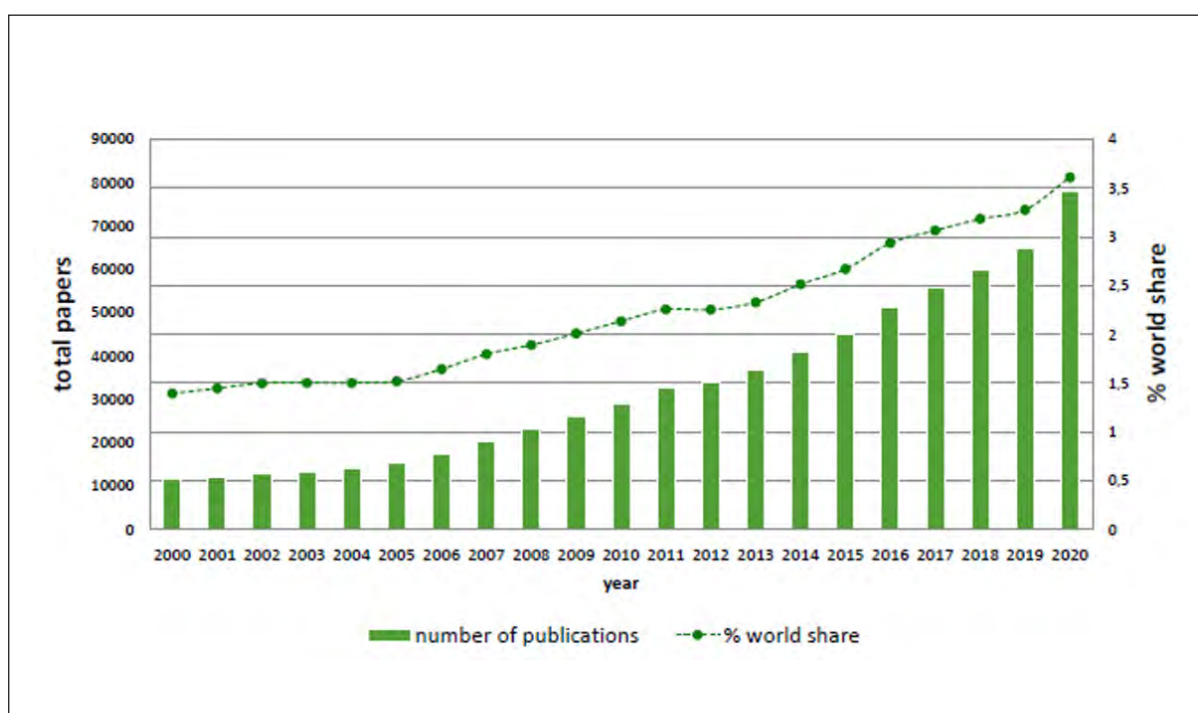


Figure 2: Top 30 Research Areas in Africa (Web of Science Documents)

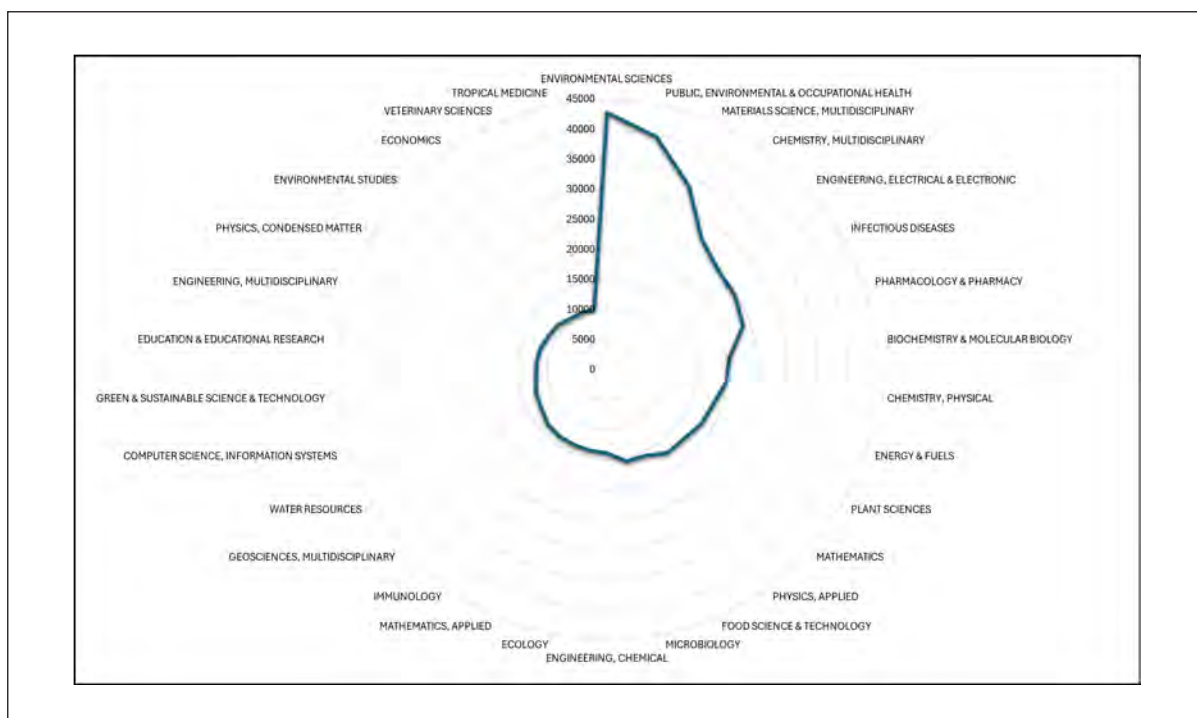
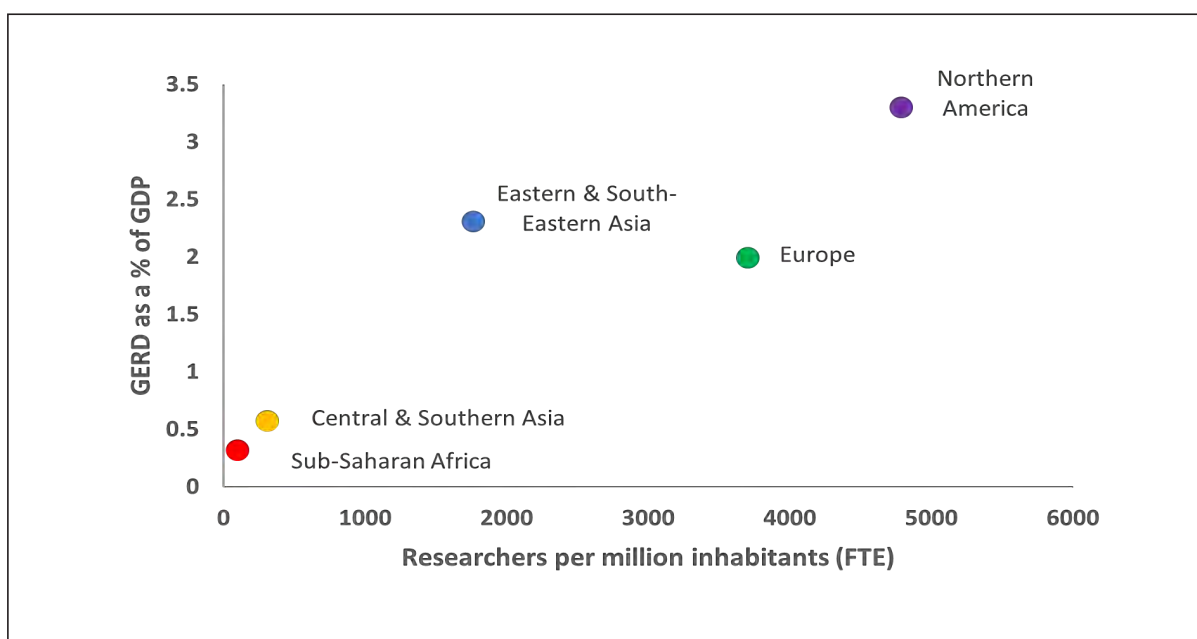
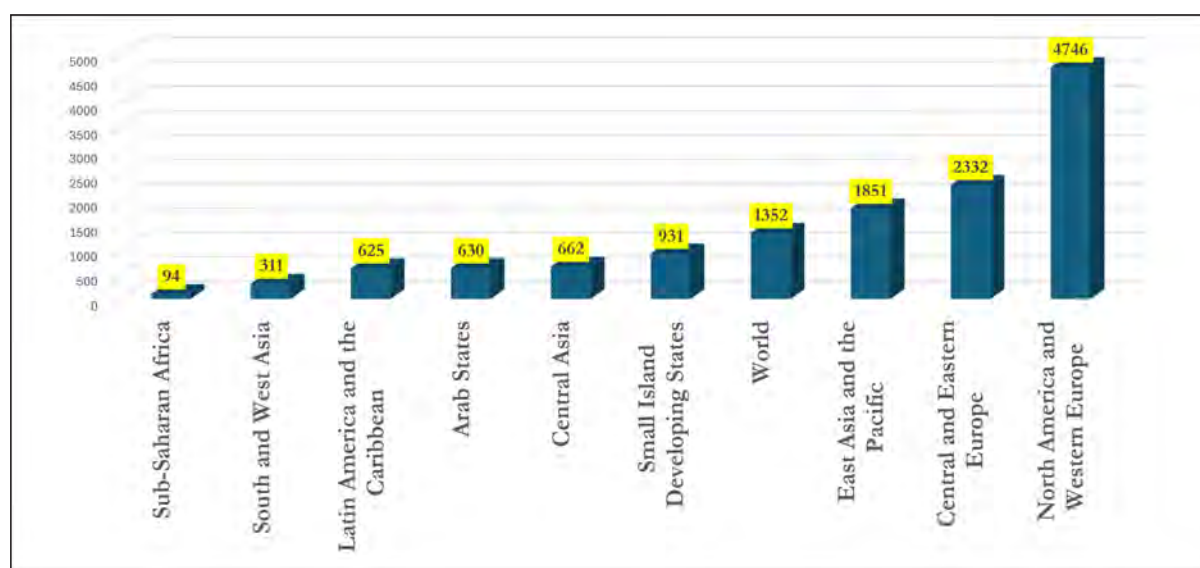


Figure 3: R&D spending vs number of researchers



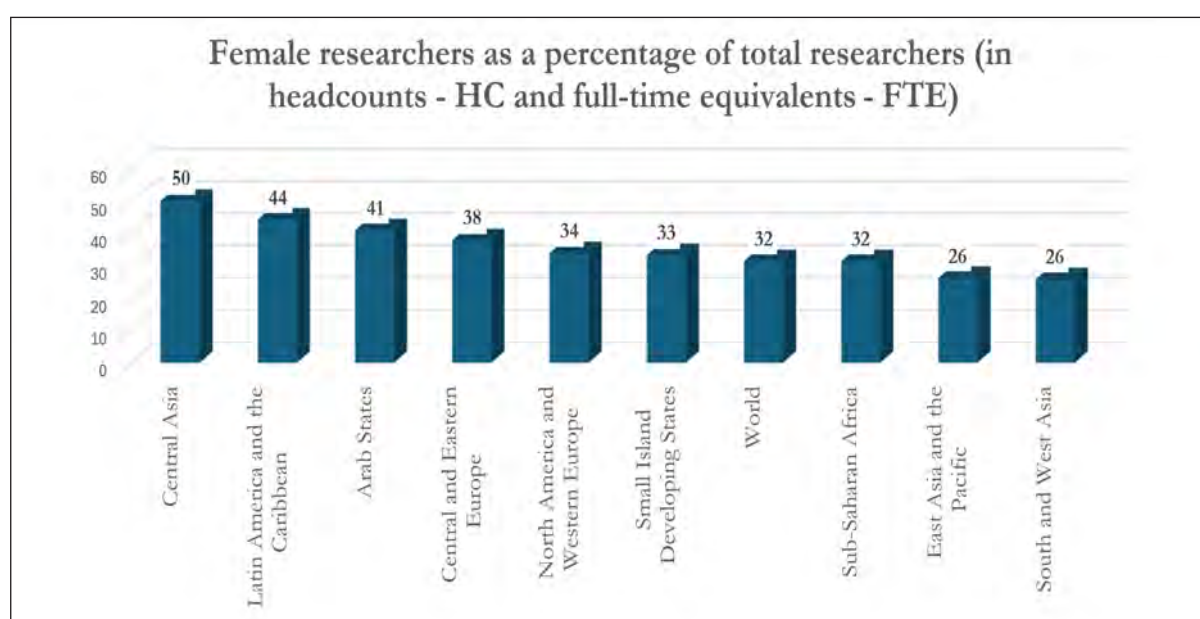
Source: UNESCO data

Figure 4: Sub-Saharan Africa: Researchers (FTE) per Million Inhabitants in 2021



Source: UNESCO data

Figure 5: Female Researchers (% of Total Researchers)



Source: UNESCO data

The challenge with funding universities in Africa has often resulted in most universities compromising the quality of research (Lakati & Masibo, 2023). Navigating the funding landscape for universities in Africa requires a multifaceted approach that balances sustainability, accessibility, and quality. Engaging stakeholders – from government to the private sector and the community – is crucial for developing effective funding models that can support the growth and development of higher education across the continent.

Institutional Autonomy of African Universities

It is important to first indicate that there has been an important history regarding the degree of self-governance and independence of many African

universities from external control, particularly government influences. During the post-colonial period, it was common for the president or other high-ranking government officials to serve as the chancellor of universities in Africa. This practice often reflected the centralised governance structures

inherited from colonial rule and emphasised the state's influence over educational institutions. During this time, universities were simply not independent. This has changed subsequently, where some form of autonomy has been defined in the areas of governance and financial management (Wangenge-Ouma & Kgosithebe, 2020).

In the case of Ghana, the 1992 Constitution explicitly recognises academic freedom, making Ghana one of the few African nations to do so. This provision ensures that universities can operate independently without undue interference from the government. Specifically, it prohibits the President from serving as chancellor of any public university, thereby maintaining a separation between state authority and academic governance. The Constitution allows universities to appoint some representatives in the governing councils, which are responsible for internal management and governance. This autonomy is crucial for fostering an environment conducive to academic excellence and innovation. Most public universities have their own legal status that grants autonomy in terms of governance and financial management.

Although universities are expected to be independent, it is generally difficult to show this to be the case in many African universities. Government influences in these universities are usually based on executive suasion related to financial power. For example, a government may exert influence through its legislative authority to appoint members of the governing body, or it may exert influence over such matters as the salaries and conditions of academic staff, not because of any legal authority but simply because it provides most of the income and can threaten to withhold funding unless its conditions are met. Government influence by 'steering from a distance' using financial authority, and this is typical in many African universities.

Alternative Funding Models

Various alternative funding models exist to fund university infrastructure and research. Given the limitations of public funding, the more innovative models include (1) the reliance on knowledge clusters, where universities can co-fund projects by putting together their limited resources, (2) leveraging funding from regional groups, like the AU and EU, to support long-term partnerships for infrastructural development, (3) relying on Public-Private Partnerships, where universities can

collaborate with industry and other stakeholders to market intellectual property, monetising patents and developing incubators or accelerators is another option (4) working with the African Diaspora to co-create and co-fund large development research, (5) relying on National Research Councils and (6) other philanthropic organizations.

The intention behind the **creation of knowledge clusters** is motivated by the understanding that pockets of excellence are associated with different universities, and there is a need to attain a certain critical mass to be able to tackle specific persistent development challenges (ARUA, 2023). This is a feat that is not easily possible in traditional academic units of universities that are ordered according to specific disciplines, where there is little or no room for persons outside them. It is the understanding that knowledge clusters are tools for undertaking enhanced collaborative and interdisciplinary work, leveraging local and regional resources, fostering innovation ecosystems and attracting funding from different sources. Knowledge clusters facilitate interdisciplinary collaboration among researchers from various fields, allowing universities to tackle complex societal challenges more effectively. This collaborative environment can lead to innovative solutions that attract external funding from government grants, private-sector partnerships, and international collaborations (ARUA, 2023). By pooling resources within a cluster, universities can maximise their impact with limited funding. Universities will have access to shared facilities, expertise, and administrative support, which reduces operational costs and enhances research capabilities. Successful clusters often build on existing local strengths and resources, which can lead to increased competitiveness for funding opportunities. Clusters have shown potential in attracting significant external funding by aligning their research goals with those of national and global priorities. This can enhance their visibility and appeal to funders (ARUA, 2023).

Another innovative approach to funding infrastructure and research in African universities is by **leveraging funding from regional groups, like the AU and EU, to support long-term partnership programmes** (ARUA, 2023). The African Union and the European Union have both established frameworks aimed at fostering collaborative research and ensuring their translation into impactful initiatives (Mugwagwa et al, 2019). Each of these institutions often aligns their strategies to some regional initiatives such

as the SDGs. Indeed, the African Union and the European Union have together adopted the AU-EU Innovation strategy that emphasises enhanced research, development of knowledge clusters and capacity building through joint master's and doctoral programs, as well as postdoctoral training initiatives and joint innovation initiatives. African universities can benefit from this partnership by forming strategic partnerships with universities in Europe to significantly enhance their infrastructural and research needs. The funding initiatives under this partnership include the Horizon-Europe-Africa Initiative (€350 million was allocated for 2021-2022), the ARISE Pilot Programme and the Erasmus+ programme. Funding from these initiatives can be critical in facilitating cutting-edge research in various fields in Africa (ARUA, 2023).

Public-private partnerships (PPPs), where universities can collaborate with industry and other stakeholders to market intellectual property, monetise patents and develop incubators or accelerators, are increasingly recognised as a viable strategy for addressing the funding needs of infrastructure and research in universities. These partnerships leverage private sector resources and expertise and allow universities to build, finance, and manage infrastructure more effectively. PPPs can mitigate risks associated with project delivery and ensure that facilities meet high-quality standards. PPPs enable educational institutions to tap into private capital, which is crucial given the constraints on public funding. This approach can help universities avoid taking on debt that might affect their credit ratings, as projects can be financed off the university's balance sheet (Monga, 2024). With a single contract governing the partnership, universities can simplify management and division of responsibilities. This structure allows institutions to focus more on academic missions rather than operational complexities. Additionally, utilising private sector expertise can lead to faster project delivery and potentially higher quality outcomes compared to traditional public funding methods (Monga, 2024).

The **African Diaspora** can also be a useful source in co-creating and co-funding large development research (Thondhlana et al, 2021). Several examples exist. For instance, the Carnegie African Diaspora Fellowship Program (CADFP) is a very good example. This program facilitates partnerships between African institutions and scholars from the diaspora to work

on educational and research projects. The program allows the hosting of African-born scholars in many African universities. This is a potential source of enhancing research capabilities and fostering collaboration on significant development issues. Another example is the African Diaspora Finance Corporation (ADFC), which has been endorsed by the African Union and aims to harness diaspora resources through innovative financial mechanisms like Diaspora Bonds and Mutual Funds. ADFC intends to channel savings into impactful ventures in Africa, with profits reinvested into development projects via grants and soft loans. Such mechanisms can create a sustainable funding source for research initiatives.

National Research Councils (NRCs) play a crucial role in promoting and coordinating scientific research across various countries. These institutions typically focus on enhancing scientific knowledge and fostering innovation to address national and global challenges (Redhead, 2000). These institutions are better able to raise revenue from national Governments as well as other competitive grant schemes because of their strong institutional framework (Redhead, 2000). Several examples abound globally, a good example in Africa is that of the National Research Foundation of South Africa. Established in 1991, NRF has been one of the most important success stories of how South African Universities have remained the most competitive in global research from Africa. The NRF plays a pivotal role in advancing South Africa's scientific capabilities by funding research, facilitating high-end infrastructure, and promoting public engagement in science. Its strategic initiatives are designed to enhance the nation's competitiveness in various fields of study while supporting sustainable development goals. NRF mobilised almost US\$120 million to support research in 2022/23 (NRF, 2024).

There are several other innovative funding sources, and this includes **philanthropic organisations** such as the Bill & Melinda Gates Foundation, Mastercard Foundation, Carnegie Corporation of New York, Spencer Foundation, Education Trust and African Development Bank. These are some of the best examples of philanthropic organisations that have supported the infrastructural and research needs of African universities in one way or the other.^{2, 3}

It is important to mention, however, that African universities must strategically position themselves

2 <https://theconversation.com/what-is-the-influence-of-american-foundations-on-universities-in-africa-92964>

3 <https://www.africagrantmakers.org/blogposts/philanthropy-and-higher-education-in-africa>

to fully benefit from such funding. For instance, universities must build important relationships with such institutions and demonstrate their impact on local communities. It is again important that universities adopt flexible financial models that allow them to allocate resources effectively according to their priorities. This includes implementing annual block grants that give institutions more control over their budgets. Also, universities must establish research management offices that can apply for and manage the funds from such institutions.

ARUA's Approach to Addressing Funding Challenges

Recognising the challenging landscape of funding for infrastructure and research, the African Research Universities Alliance (ARUA), a network of 23 leading research universities in Africa, was established with a vision to make African researchers and institutions globally competitive while contributing to the generation of knowledge for the socio-economic transformation of the region. Amongst the many objectives of the network is the need to explore alternative funding models that can allow universities to undertake their cherished goals, viz. teaching,

research, community (public) service, and other contextually determined goals. The Alliance decided to address many of the challenges associated with the funding of research and infrastructure in African universities by adopting many of the models described in Section 5.

In line with the creation of knowledge clusters, ARUA established thirteen (13) Centres of Excellence (CoEs) (see Box 1 for the list of CoEs) to be its main vehicle for attaining its objectives. These CoEs were formed using a hub and spoke model, where one university leads as the *hub university* and brings together several other universities as *spoke universities*. The Alliance prioritised attaining the Sustainable Development Goals (SDGs) as the main goal of the CoEs. Each of the CoEs was expected to undertake research and capacity-building related to their scope. With initial support from the UK Research and Innovation (UKRI), the Alliance received £20 million as a seed grant to build capacity for science research across African universities and provide opportunities for African research teams to co-create new projects that build on current investments by GCRF and ARUA. These CoEs, therefore, are cross-country teams, networks, and connections that can work on various projects related to the SDGs.⁴

Box 1: The thirteen (13) ARUA Centers of Excellence

1. Water Conservation (Rhodes University)
2. Climate & Development (University of Cape Town)
3. Inequalities Research (University of Cape Town)
4. Unemployment and Skills Development (University of Lagos)
5. Urbanization and Habitable Cities (University of Lagos)
6. Food Security (University of Pretoria)
7. Materials, Energy & Nanotechnology (COE-MEN) (University of Witwatersrand)
8. Migration & Mobility (University of Witwatersrand)
9. Energy (Stellenbosch University)
10. Good Governance (Addis Ababa University)
11. Non-Communicable Diseases (University of Nairobi)
12. Notions of identity (Makerere University)
13. Post-conflict society (Addis Ababa University)

Leveraging on an existing partnership with the Guild of European Research-Intensive Universities, ARUA used its CoEs as an instrument to co-create a much larger universe of knowledge clusters that involves researchers from Africa and Europe. Formerly known as the Africa-Europe Clusters of Research Excellence (CoREs), these knowledge clusters were framed in line with the AU-EU innovation agenda. Altogether, 21 CoREs (Box 2) were

⁴ <https://arua.org/uk-research-and-innovation-ukri/>

established to address societal and scientific challenges framed by the AU-EU Innovation Agenda (Public Health, Green Transition, Innovation and Technology, as well as Capacities for Sciences). The CoREs are structured in a way similar to the ARUA CoE model, but in this case, there are academic leads from both Africa and Europe and several other supporting universities.

The CoREs are a new form of collaboration between some of the best researchers from both continents, striving for equitable partnerships in an unequal world. Their launch has been enabled by resources committed by individual institutions to address the SDGs through excellent research, education, capacity building, mobility and innovation. The CoREs were proposed by academics and selected according to the excellence of their 10-year collaborative plans, which contribute to the four priority areas of the EU-AU Innovation Agenda. Whilst the CoRE initiative is led by ARUA and The Guild, participation is open to organisations beyond the two networks, bringing together partners from over 120 institutions across 42 countries. Since the creation of the CoREs, individual institutions have made some important funding commitments. On average, some CoREs are receiving up to a maximum of US\$200,000 from their member universities. In the case of third-party funding, the CoREs, in the first year of their operation, have together obtained almost US\$85 million. These clusters are being leveraged to develop collaborative doctoral programmes as well as other programmes. The CoREs will pursue long-term infrastructure projects.

Box 2: The Twenty-one (21) Africa-Europe CoREs

- 1.01 Translational Research in Infection, Immunity and Inflammation (Makerere & Radbound)
- 1.02 Migration and Health (Witwatersrand & Uppsala)
- 1.03 Health, Gender and Sexualities (Pretoria & Oslo)
- 1.04 Multimorbidity (Ghana & Warwick)
- 1.05 Preparedness and Response to Pandemics and Shocks (Makerere & Universite Cathelique de Louvain)
- 1.06 Genomics for Health in Africa (Stellenbosch & Bern and Tubingen)
- 1.07 Food Environment Actions for the Promotion of Health (Cape Town & Uppsala)
- 1.08 Advanced Infectious Diseases Research and Training (Ghana & Glasgow and Tubingen)
- 1.09 Non-Communicable Diseases and Multimorbidity (NCDMM) (Nairobi, Ibadan, Cape Town, UCAD & Glasgow, Jagiellonian and Universite Paris Cite)

- 2.01 Nature-based Solutions for Climate Adaptation and Mitigation (Stellenbosch and Cape Town & Bologna)
- 2.02 Renewable Energy (Stellenbosch & Ghent)
- 2.03 Sustainable Water and Land Resource Management for Human Well-being (Addis Ababa & Bern)
- 2.04 Water Resources Management for a Sustainable Just Future (Rhodes & Ljubljana)

- 3.01 Sustainable Food Systems (Pretoria & Bologna)
- 3.02 Artificial Intelligence, Data Science, and Theoretical and Computational Thinking (Stellenbosch & Uppsala)
- 3.03 Engineering for the Future (Pretoria & King's College London)
- 3.04 Creative Economies: Cultures, Innovation and Sustainability (Rhodes and Lagos & King's College London)
- 3.05 Mathematics (Makerere & Uppsala)

- 4.01 Building Capacities for Interdisciplinary Peace, Research: Exploring Conflict, Environment, Technology, Inequality, and Identity in Africa (Addis Ababa & King's College London)
- 4.02 Promoting Impactful Research and Education on Inequalities, Poverty, and Deprivation Across Africa (Cape Town & Groningen)
- 4.03 The Politics of Sustainable Development (Pretoria & Oslo)

ARUA has again engaged several philanthropic organisations to support its member university's research, and this includes the Carnegie Corporation of New York, NRF and Open Society Foundation. There are at least two significant projects that ARUA has initiated with support from some of these organisations to boost the research and innovation ecosystem in Africa. The first is the institution of an *Early Career Researcher Programme*. With support from the Carnegie Corporation of New York and the NRF, ARUA initiated the Early Career Researcher Programme to provide opportunities for young faculty in ARUA universities to spend time away from their home institutions and work very closely with the ARUA CoEs and undertake publishable research. The intention is to strengthen the capacity of ECRs by providing dedicated time for research, fostering collaboration with senior researchers, enhancing international research standing, and encouraging the dissemination of research findings through publications and presentations. The programme has largely been successful and this is reflected in the number of applicants, which is an average of almost 150 per year. The program has existed for the past three years, and on average, 25 awards have been given.

The ARUA Early Career Research Fellowship initiative was born out of the observed lack of systems and structures that support postdoctoral positions as an integral part of most African university systems and the inadequate support for postdoctoral programs in Africa. ARUA believes that postdoctoral study programs remain critical in gradually shifting the focus of universities toward postgraduate study while strengthening academic staff's research capabilities and preparing them to offer high-quality supervision to graduate students. Through the initiative, ARUA seeks to eliminate the barriers to the mobility of researchers as well as deepen collaboration and interdisciplinary research between researchers in Africa. The project's overall objective was to strengthen the capacity of early-career researchers at African universities by giving them time away from teaching responsibilities at their home institutions while working with very senior and accomplished researchers. The ARUA Centers of Excellence (CoE) were the main institutions hosting the fellows, and each CoE was expected to admit one research fellow from a country other than where the CoE is located.

The second is the data-gathering and benchmarking project, which aims to enhance the research capacity

of African universities through systematic data collection and analysis. The project gathers data in terms of student and staff enrolments, research capacity, and institutional capacity, amongst others, to build profiles of ARUA member universities. ARUA intends to harness member universities' collective resources to improve training and support for PhD and master's students, build capacity to enhance research management and foster collaborative research. While it will take time to develop such capacity, incremental needs to be tracked. This will help the alliance's governing body to (a) monitor progress and impact, (b) decide on interventions or policy changes required to steer member universities towards ARUA's ultimate goals (c) determine criteria for institutions to be part of ARUA (for example, the minimum criteria to be considered a research-intensive university) and (d) advocate for funding.

Through these multifaceted initiatives, ARUA is not only advocating for increased funding but is also laying the groundwork for sustainable research collaborations that can significantly enhance Africa's research landscape. By fostering equitable partnerships and demonstrating the potential impact of funded research, ARUA aims to secure necessary financial resources for its member institutions and the broader academic community.

Conclusion

The funding mechanisms and the size of funding allocated to universities are crucial for achieving their esteemed objectives, mainly teaching, research, community service, and other contextually defined aims. In this paper, we have identified some of the most innovative approaches to funding as well as some potential funding sources. We have again demonstrated the extent to which ARUA has relied on these innovative approaches to obtain some significant funds to undertake research related to the SDGs as well as the AU-EU Innovation Agenda.

It is important to mention that the evolving landscape of funding for African universities presents both challenges and opportunities that must be addressed to enhance the continent's research and innovation capabilities. As African universities seek to break free from traditional funding models that foster dependence on national governments, the exploration of innovative business models becomes essential. By leveraging knowledge clusters, fostering regional partnerships, and engaging with diverse funding sources such as Private- Public Partnerships and

philanthropic organizations, universities can create a more robust and autonomous research ecosystem.

ARUA exemplifies this proactive approach by utilizing its Centres of Excellence and collaborative research clusters to attract varied funding streams. This strategy not only aims to strengthen the research infrastructure but also aligns with broader societal goals outlined

in the AU-EU Innovation Agenda. Ultimately, the success of these initiatives will depend on a collective commitment from universities, governments, and international partners to prioritize and invest in Africa's research landscape, ensuring that it meets the pressing challenges of today while paving the way for sustainable development in the future.

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INTERNALLY GENERATED FUNDS AND FINANCIAL SUSTAINABILITY OF GHANAIAN PUBLIC UNIVERSITIES: UNPACKING THE NUANCES

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Abstract

This study explores Internally Generated Funds (IGF) strategies in two Ghanaian public universities through the lens of Resource Dependence Theory. Using a qualitative multiple case study approach, the research examines Kwame Nkrumah University of Science and Technology and Kumasi Technical University - to understand their IGF strategies and effectiveness toward financial sustainability. Data was collected through semi-structured interviews with key financial officers and document analysis. The findings reveal five key IGF strategic approaches: student-based revenue strategies, infrastructure monetization, commercial ventures, external partnerships, and staff-driven revenue generation. While these strategies show promise for reducing dependence on government funding, their implementation faces significant challenges including regulatory constraints, limited institutional capacity, and resource limitations. The study contributes to the theoretical understanding of resource dependency in higher education contexts and provides practical implications for university administrators and policymakers. The findings suggest that successful IGF implementation requires a balanced approach that considers both immediate revenue needs and long-term sustainability goals while maintaining academic quality. This research offers valuable insights for higher education institutions seeking to enhance their financial sustainability through diversified funding sources.

Keywords: Internally Generated Funds, innovative strategies, public universities, financial sustainability, Ghana.

Introduction

Higher education continues to be one of the bedrocks of socio-economic development. Unterhalter et al. (2020) emphasize the pivotal role of higher education in socio-economic development, suggesting that it not only equips individuals with necessary skills but also propels societal advancements. However, Salmi (2020) extends this argument by specifically linking higher education to the achievement of the United Nations' Sustainable Development Goals (SDGs). Salmi argues that without the foundational knowledge and skills provided by higher education, efforts towards SDGs such as poverty reduction and economic growth (SDG 1 and SDG 8) would be significantly hampered. This perspective is particularly relevant as it highlights the broader implications of educational advancements, not just for individual economic benefits but for global sustainability goals. The interconnection drawn by Salmi between educational output and sustainable development challenges the traditional view that sees education merely as a pathway to employment, urging a broader conceptualization that includes its role in societal transformation. This raises a critical question about the adequacy of current educational policies and funding, which are often narrowly focused on immediate economic returns rather than long-term societal benefits.

In spite of higher education's pivotal role in socioeconomic development, funds allocated to higher education by governments have declined (Tefera, 2013). Many higher education institutions (HEIs) including those in Ghana have, thus, been affected by the decline in state funding and concomitant rising cost of higher education. This is partly attributable to factors such as economic recession and the increasing pressure on public funding (Mensah, 2019; de Wit & Altbach, 2021). The COVID-19 pandemic was also likely to prevent projected increases in education investment in low and middle-income nations (including Ghana) (Al-Samarrai et al., 2020). In addition, Al-Samarrai et al (2020) believe that general education spending is expected to stagnate in most countries and may even fall in some countries. This was because they thought that some countries would reduce their education funding to make room for other sectors such as health and social protection.

Given the role higher education plays in development across the globe, and because funding to the sub-sector keeps dwindling, higher educational managers are implored to find alternative sources of funding their activities as a means to cut down on the over-reliance on central governments (Wolhuter & Jacobs, 2021; Ibrahim, 2022). In Ghana, one major means of providing funding for HEIs apart from government sources has been internally generated funds (IGF) (Kwasi-Agyeman et al., 2021). In the opinion of Onuoha (2013), IGF become an inevitable and alternative source of funding tertiary education amid dwindling government support.

In recent years, the financial landscape for Higher Education Institutions (HEIs) in Ghana has undergone significant changes, prompting a shift in funding

strategies. Amidst growing concerns over the sustainability of public universities, the Government of Ghana has issued a directive that underscores the urgency of diversifying funding sources (Kwasi-Agyeman et al., 2021). This directive mandates all HEIs to intensify their efforts in mobilizing Internally Generated Funds (IGF), a move aimed at reducing over-reliance on government allocations which have been dwindling (Kwasi-Agyeman et al., 2021). The directive reflects a broader recognition of the challenges posed by static or reduced public funding, and it aligns with global trends towards enhancing financial autonomy in higher education (Wolhuter & Jacobs, 2021; Ibrahim, 2022). By focusing on internal capacities to generate revenue, the directive seeks to instil a culture of financial self-sufficiency that could shield educational institutions from economic fluctuations and ensure their long-term sustainability.

In response to the recent Government of Ghana directive for Higher Education Institutions (HEIs) to intensify their Internally Generated Fund (IGF) mobilization efforts. However, there is dearth of studies on how Ghanaian public universities' IGF strategies and their effectiveness to make them financially sustainable. Thus, this study employs a qualitative approach to explore the IGF strategies of Ghanaian public universities. This study does not only map the landscape of IGF in Ghanaian public universities but also provides nuanced insight into the IGF strategies and their effectiveness towards financial sustainability of the universities.

As this study unfolds, it first delves into a comprehensive literature review that examines existing research on Internally Generated Funds (IGF) and their role in the financial sustainability of higher education institutions globally. This review

highlights key strategies that have been successful, as well as common challenges faced by universities in diversifying their funding sources. Following the literature review, the methodology section describes the qualitative methodology used in this study, including interviews with university administrators and policymakers in Ghana. The finding section presents the emerging themes on the current state of IGF mobilization efforts within selected Ghanaian public universities, offering insights into both successful initiatives and areas needing improvement. Finally, the discussion synthesizes these findings in the context of the broader literature, proposing actionable strategies for enhancing the financial sustainability of these institutions. The paper concludes with a summary of the findings, implications for policy and practice, and suggestions for future research in the field of higher education finance.

Review of Relevant Literature

The funding landscape of higher education institutions (HEIs) has undergone significant transformation globally, particularly in developing economies. As Ozili and Arun (2023) and Ibrahim (2022) observe, declining public funding has forced educational managers to seek alternative financing sources. This shift occurs against the backdrop of higher education being the most resource-intensive educational sector, characterized by complex governance structures and substantial capital requirements (Marinoni et al., 2020; Ifeanyi et al., 2021). The reliance on alternative financing sources raises critical questions about the sustainability of funding models and the potential impacts on the governance of HEIs. As institutions navigate this complex financial landscape, it becomes imperative to critically assess how these changes affect their operational stability and funding strategies. This discussion delves deeper into the specific alternative financing methods being employed and their implications for the future of higher education.

The literature reveals two predominant ideological approaches to higher education funding: government-funded (public) and market-based (liberalized) models (Johnstone, 2006). These models exist along a continuum, with most contemporary institutions adopting hybrid approaches (Lamprey, 1994; Omona, 2012). In the public funding model, governments allocate resources through budgetary mechanisms, providing institutions with operational autonomy. However, this approach faces significant challenges including delayed fund disbursement,

funding shortfalls, budget deficits, and donor dependence issues (Boateng, 2002; Omona, 2012). The market-based approach, advocated by scholars like Oketch (2003) and Shaturaev (2021), emphasizes commercial principles in higher education financing. This model promotes institutional self-sustainability, enables student/parent contribution, and facilitates resource generation from multiple stakeholders. However, critics label this approach as “academic capitalism,” arguing it compromises education’s role as a public good (Shore, 2020; Billings, 2021).

Financial sustainability in higher education represents an institution’s capacity to maintain long-term financial health while fulfilling its educational mission (Ozili & Irember, 2024). This encompasses revenue generation adequacy, operational efficiency, resource allocation effectiveness, and infrastructure development capability (Johnstone, 2006; Adams & Simnett, 2011). Montenegro de Lima et al. (2020) emphasize that understanding financial sustainability challenges in higher education is more crucial than ever, given factors such as government funding instability, competitive funding priorities, and complex political influences.

In response to these challenges, Internally Generated Funds (IGF) have emerged as a critical alternative funding source. Amutuhare (2022) defines IGF as any efforts aimed at raising funds from alternative sources, particularly from within the HEIs themselves. This includes revenue from school levies, tuition fees, investment income, grants, donations, endowments, and consultancies (Ukpong & Uzoigwe, 2019). Lamprey (2020) further expands this definition to include any income-generating activities that complement government funding.

The historical evolution of higher education funding in Ghana provides a compelling case study of these funding transitions. In the post-colonial era, higher education enjoyed substantial government support, with approximately 90% of funding coming from public sources (Teferra, 2007). This period was characterized by free tuition, government-provided accommodation, and student allowances (Sawyer, 2001). However, the economic crisis of the 1980s prompted significant changes in this funding approach (Woldegiorgis & Doeverspeck, 2013).

The transition to cost-sharing in Ghana’s higher education system marked a significant shift from the free education era. This change, introduced in 1990, aimed to expand educational facilities while

distributing the financial burden between government and stakeholders (Kwasi-Agyeman, 2020). Johnstone (2003) describes this cost-sharing approach as a strategic shift from exclusive government funding to a shared responsibility model involving parents and students. This transition manifested through various mechanisms, including the introduction of fees in previously free institutions and reduced government financial support.

The implementation of cost-sharing, however, faced considerable resistance. Notable protests included the 1999 “mmobrowa struggle” (the struggle of the poor), which emerged in response to the introduction of academic facility user fees (AFUF) and residential facility user fees (RFUF) policies (Annan, 2018). These protests highlighted the socioeconomic challenges of implementing cost-sharing in a context where income levels were relatively low (Dadzie, 2009). Despite these challenges, the cost-sharing model has successfully generated additional funding to supplement insufficient government subventions (Materu, 2007).

A distinctive feature of Ghana’s higher education funding model is the “fee-paying students” system. While regular students in public institutions pay only facility user fees, fee-paying students contribute full tuition costs (Swanzy & Potts, 2017). This system operates through a cut-off points mechanism, where highly qualified candidates enter as regular students, while others who meet minimum requirements can enroll as fee-paying students (Adu & Orivel, 2006; Plamper et al., 2023). The internationalization of higher education has further enhanced this funding stream, as international students pay full tuition in foreign currency (Newman & Duwiejua, 2015).

The evolution of Ghana’s higher education funding has increasingly embraced public-private partnerships (PPPs) as a crucial component of financial sustainability. Tilak (2010) describes these partnerships as contractual agreements enabling private sector participation in specific educational projects, with shared costs, risks, and benefits. The growth of PPPs in Ghana’s higher education sector, particularly in infrastructure development, represents a strategic response to dwindling public funding (Owusu-Manu et al., 2020). While these partnerships have successfully provided additional infrastructure such as dormitories and hostels (Bennell, 2022), they also present challenges including locked-up capital and potential debt overhang for institutions (Kukah et al., 2022).

The current revenue diversification era represents the most recent phase in Ghana’s higher education funding evolution (Kwasi-Agyeman, 2020). This approach extends beyond traditional cost-sharing to encompass multiple funding streams, including tailor-made programs, research commercialization, and consultancy services (Ziderman & Albrecht, 2013). However, Johnstone (2002) raises concerns about the potential distraction from core academic mandates as institutions pursue entrepreneurial ventures. Despite these challenges, revenue diversification has become increasingly vital amid declining public funding (Atuahene, 2006; Kwasi-Agyemang, 2021).

The establishment of the Ghana Education Trust Fund (GETFund) through Act 581 of 2000 represents another significant development in Ghana’s higher education funding landscape. Funded through Value Added Tax (VAT), GETFund has contributed substantially to infrastructure development, scholarships, and research support (GETFund, 2022a). However, the Earmarked Funds Capping and Realignment Act of 2017 has limited GETFund’s revenue, further emphasizing the need for diversified funding sources.

The contemporary landscape of higher education funding in Ghana reflects a complex interplay of traditional and innovative financing mechanisms. As Newman and Duwiejua (2015) observe, the funding matrix now encompasses central government allocations, GETFund contributions, development partner support, internally generated funds, student fees, and private sector investments. However, Effah (2018) argues that Ghana still requires a more refined funding formula that can foster healthy competition among institutions while rewarding efficiency and effectiveness.

The evolution of student loan schemes further illustrates the ongoing challenges in sustainable higher education funding. The transition from the initial Ghana Commercial Bank scheme to the SSNIT student loan program, and subsequently to the Students Loan Trust Fund (SLTF), demonstrates continuous efforts to improve financial access to higher education. Despite reforms such as the “no guarantor policy” implemented in the 2021/2022 academic year, these schemes continue to face challenges including poor loan recovery rates, graduate unemployment, and administrative inefficiencies (Chapman & Lounkaew, 2010).

Al-Samarrai et al. (2021) emphasize the critical need for improved efficiency in both generation and utilization of diversified revenue streams. This requires new management approaches prioritizing transparency, accountability, and efficiency. As Zumeta et al. (2021) note, strengthening the link between educational outputs and inputs becomes increasingly crucial in this context. The literature thus suggests that the future of higher education funding in Ghana lies not merely in identifying new funding sources, but in developing more sophisticated, integrated approaches to financial sustainability that balance multiple stakeholder interests while maintaining educational quality and access.

This comprehensive review of literature reveals that while Ghana has made significant strides in developing diverse funding mechanisms for higher education, continued innovation and refinement of existing models remains essential. The challenge lies in creating a sustainable funding ecosystem that can support quality education while ensuring broad access and institutional stability in an increasingly complex economic environment.

Theoretical Stance

The theoretical foundation of this study is anchored in the Resource Dependence Theory (RDT), first proposed by Pfeffer and Salancik (1978) in their seminal work “External Control of Organisations: A Resource Dependence Perspective.” This theoretical framework provides a compelling lens through which to examine the complex relationships between higher education institutions (HEIs) and their external resource environments. The theory’s central premise, that organizations are not self-sufficient entities but rather interconnected with their external environment, particularly resonates with the current challenges facing higher education funding.

RDT’s application to higher education is particularly relevant as it illuminates the intricate power dynamics between HEIs and their resource providers, primarily government and its agencies. The theory posits that organizations must develop strategic approaches to manage their resource dependencies and reduce uncertainties in their operating environment (Pfeffer & Salancik, 2015). This theoretical perspective is especially pertinent when examining how HEIs navigate their external environments and strategically manage their resource dependencies to ensure financial sustainability.

Gordon (2022) extends this theoretical framework by emphasizing the importance of HEIs understanding the significant influence of external forces on their resource inputs. This understanding becomes crucial as institutions seek to develop strategies for reducing their dependence on external funding sources while maintaining operational effectiveness. The power relationship inherent in resource dependency, as outlined by Pfeffer and Salancik (2015), creates a complex dynamic where HEIs must balance their need for external resources with their desire for autonomy and sustainable operations.

The application of RDT to higher education funding reveals three critical dimensions: the fundamental dependence of HEIs on external environments for crucial resource inputs, the resulting power relationships that emerge from this dependence, and the imperative for institutions to develop strategies that enhance their independence in pursuing their objectives. This theoretical framework thus provides a valuable analytical tool for understanding how HEIs can work toward financial sustainability while managing their external dependencies. The theory’s emphasis on organizational adaptation and strategic resource management aligns well with the current trends in higher education funding, where institutions increasingly seek diverse funding sources to reduce their dependence on traditional funding streams.

The application of RDT to Ghanaian higher education institutions’ IGF strategies offers particularly valuable insights into institutional responses to funding challenges. Through the RDT lens, the pursuit of internally generated funds can be understood as a strategic organizational response to reduce resource dependencies and enhance institutional autonomy. This theoretical perspective helps explain why Ghanaian HEIs are increasingly seeking to diversify their revenue streams beyond traditional government funding sources.

RDT’s emphasis on power relationships and resource control is especially relevant when analysing how Ghanaian HEIs navigate their funding environment. As Pfeffer and Salancik (2015) argue, organizations must actively manage their external dependencies to ensure survival and growth. In the context of Ghanaian higher education, this manifests in institutions developing various IGF initiatives, from fee-paying programs to commercial ventures, as mechanisms to reduce their vulnerability to fluctuations in government funding. This theoretical framework helps explain why institutions that historically relied primarily on

government subventions are now actively pursuing alternative funding sources.

The theory's focus on organizational adaptation and strategic response to environmental constraints provides a robust framework for understanding the evolution of IGF strategies in Ghanaian HEIs. Gordon (2022) suggests that organizations must develop mechanisms to ameliorate uncertainties and over-reliance on external forces. This theoretical perspective helps explain the increasing sophistication of IGF strategies in Ghanaian institutions, from simple fee collection to more complex entrepreneurial ventures and public-private partnerships.

Furthermore, RDT's emphasis on the interplay between organizational autonomy and external dependencies offers valuable insights into how Ghanaian HEIs balance their academic missions with financial sustainability imperatives. The theory suggests that organizations must manage these dependencies without compromising their core objectives, a challenge particularly relevant to higher education institutions seeking to maintain academic quality while pursuing financial sustainability through IGF initiatives.

Having established Resource Dependence Theory as the theoretical framework guiding this investigation into higher education funding mechanisms, particularly its insights into how institutions manage external dependencies and pursue financial sustainability, attention now turns to the methodological approach employed in this study. The next section presents a detailed examination of the research methods utilized to investigate how Ghanaian higher public universities navigate their resource environments and develop IGF strategies. This methodological framework was carefully selected to align with both the theoretical underpinnings of RDT and the practical realities of examining financial sustainability strategies in the Ghanaian higher education context.

The Study Setting and Methodology

Study setting

This study explores public university funding in Ghana, focusing on the Kwame Nkrumah University of Science and Technology (KNUST) as one of its primary sites. Established in October 1951 and achieving full university status in 1961, KNUST is located in Kumasi, the capital city of the Ashanti

Region. It boasts a student population of 86,459 and a diverse staff of 3,551. As a leader in science and technology education in Ghana, KNUST has a vision to rank among the top ten universities in Africa. The university has navigated shifts in funding from predominantly government sources to a more diversified portfolio that includes significant internally generated funds, grants, and donations. This financial evolution supports its mission to advance knowledge through research, quality teaching, and community engagement, making it a pivotal institution for this study.

Kumasi Technical University (KTU) serves as the second site for this study. Initially founded as Kumasi Technical Institute in 1954 and later converted into a technical university in 2016, KTU is strategically positioned a few kilometers from Kumasi on the main Kumasi-Accra highway. With a current enrolment of about 12,000 students and 657 staff members, KTU focuses on providing high-quality technical education in fields such as engineering, science, and technology. The university's transition to a technical university has been accompanied by an enhancement in its funding strategies, moving from reliance on government subventions to embracing more robust mechanisms including tuition fees, partnerships, and industry collaborations. This shift aims to foster a sustainable financial model that supports its vision to become a world-class technical university devoted to science, technology, and entrepreneurship education.

Study Methodology

This study employed a qualitative methodology grounded in social constructivism to explore internally generated funds (IGF) and financial sustainability in Ghanaian public universities. This approach allowed for an in-depth examination of how university financial officers construct meaning from their experiences with institutional funding mechanisms (Lincoln and Guba, 1985; Creswell, 2021).

A multiple case study design was adopted, focusing on two public universities in Ghana with similar characteristics in terms of curricula, governance structures, and geographical location. This design facilitated a deeper exploration of university-specific approaches to internal funding while enabling cross-institutional comparison (Hunziker and Blankenagel, 2024). The selection of these institutions was based on their shared focus on science and technology education, similar governance structures, and

comparable historical transitions from colleges to university status.

Key informants were purposively selected based on their roles and expertise in university financial management. Participants included Budget Officers, Final Accounts Officers, College Finance Officers, Internal Auditors, and Treasury Officers from both institutions. Data collection involved semi-structured interviews lasting 30-45 minutes each and document analysis of institutional financial records, including annual budget statements, fee schedules, and strategic plans (Flick, 2022).

Data analysis followed Miles and Huberman's (1994) model, involving verbatim transcription of interviews, manual coding, and thematic analysis. Key themes were developed around funding sources, IGF generation strategies, and financial sustainability challenges. The analysis was strengthened through triangulation with institutional financial documents and cross-case comparison (Kiger & Varpio, 2020).

The study ensured trustworthiness through Lincoln and Guba's (1985) criteria of credibility, dependability, confirmability, and transferability. This was achieved through prolonged engagement with participants, triangulation of data sources, detailed documentation of research procedures, and member checking. Ethical considerations were addressed through institutional review board approval, informed consent, and protection of participant confidentiality (Creswell and Creswell, 2017).

Findings of the study

The analysis of data revealed five major strategic approaches to internally generated funds (IGF) in the two public universities. These strategies, while showing promise, face various implementation challenges and regulatory constraints.

Student-based revenue strategies emerged as a primary approach to IGF generation. Both institutions rely heavily on fee collection mechanisms and international student recruitment, though with varying degrees of success. As one senior administrator from KNUST noted, "KNUST was investigating reasons for the decline in the university's international student numbers affecting IGF (ST 2)." Also, to enhance fee collection efficiency, both institutions have established specialized units, exemplified by Student Financial Services Offices in the institutions, which aim to "support students to pay their fees" (KNUST Policy-Fin and KTU Policy-Fin).

Infrastructure monetization represents another significant IGF strategy, though its implementation faces considerable challenges. The universities' work to maximize returns from their physical assets through facility utilization and resource sharing. A participant from KTU explained, "My university runs a multi-campus system and so infrastructural facilities must be replicated on all campuses" (TU 1), highlighting the complexity of balancing infrastructure development with revenue generation."

Commercial ventures constitute the third strategic approach, encompassing production units and business initiatives. However, these efforts often face resource constraints. As illustrated by one participant's observation:

"For lack of seed capital, the water production and bottling company of the university has been on the drawing board for some years now" (ST 1). This reflects the broader challenge of initiating commercially viable projects within academic institutions.

External partnerships, including public-private collaborations and alumni engagement, form the fourth strategic dimension. However, these efforts appear underdeveloped, as evidenced by the observation that

"even though both institutions have alumni associations, there seems to be poor engagement that results in weak relationships, making alumni contribute less financially to the universities" (ST 2). This suggests significant untapped potential in external partnership development.

Finally, staff-driven revenue generation emerges as a critical yet underutilized strategy. The research reveals limited incentive systems and consultancy frameworks. As one participant noted, "The ability to generate revenue for the university was not part of the criteria for many positions in the case institutions. This was also serving as a disincentive for staff to generate any IGF (ST 1)." This highlights the need for better alignment between institutional revenue goals and staff incentive structures.

Discussion

The findings of this study, when examined through the lens of Resource Dependence Theory (RDT), reveal complex dynamics in how Ghanaian public universities pursue financial sustainability through

IGF strategies. This discussion contextualizes the five identified IGF strategies within the broader theoretical framework and existing literature.

The emphasis on student-based revenue strategies aligns with the market-based approach described by Oketch (2003) and Shaturaev (2021). However, the implementation faces challenges that reflect the tension between market principles and public good considerations identified by Shore (2020) and Billings (2021). The decline in international student numbers and fee collection challenges demonstrate what Pfeffer and Salancik (2015) describe as the need for organizations to actively manage their resource dependencies. The establishment of specialized units like KNUST's Student Financial Services Office represents an institutional response to these challenges, consistent with RDT's emphasis on developing mechanisms to reduce external dependencies.

The pursuit of infrastructure monetization strategies reflects the evolution from traditional government funding to more diversified revenue streams, as documented by Kwasi-Agyeman (2020). However, the multi-campus system challenges highlighted by participants demonstrate the complexities of balancing resource generation with institutional mission, a tension that Montenegro de Lima et al. (2020) identify as crucial in higher education financial sustainability. This strategy aligns with RDT's emphasis on organizations developing alternative resource channels to reduce dependency on primary funding sources.

The development of commercial ventures, though hampered by seed capital limitations, represents what Ziderman and Albrecht (2013) describe as essential diversification strategies. However, these initiatives face the challenge Johnstone (2002) identifies regarding potential distraction from core academic mandates. This tension exemplifies RDT's central premise about organizations needing to balance resource acquisition with mission fulfillment.

The underutilization of external partnerships, particularly in alumni engagement and public-private collaborations, reflects the broader challenges in Ghana's higher education funding landscape described by Owusu-Manu et al. (2020). The findings suggest that while PPPs offer potential benefits, regulatory constraints and weak alumni relationships limit their effectiveness, illustrating what Gordon (2022) describes as the need for institutions

to understand and navigate external forces affecting resource acquisition.

The limited success in staff-driven revenue generation, particularly in consultancy services, highlights the institutional challenges in aligning individual incentives with organizational sustainability goals. This aligns with RDT's emphasis on internal organizational adaptation to external resource constraints, as discussed by Pfeffer and Salancik (2015).

Implications for Theory and Practice

Theoretical Implications

This study extends Resource Dependence Theory's application in the higher education context, particularly in developing economies. The findings demonstrate that RDT's core principles about organizational dependency and adaptation are highly relevant to understanding how public universities navigate financial sustainability challenges. Specifically, the study enriches RDT in three ways:

First, it reveals that resource dependency in higher education is more nuanced than previously theorized. While Pfeffer and Salancik's (1978) original framework emphasizes binary dependencies, our findings suggest a complex web of interdependencies among government funding, market-based revenues, and institutional autonomy. This complexity is particularly evident in how universities must balance regulatory compliance with innovative IGF strategies.

Second, the study extends RDT by highlighting the role of internal organizational dynamics in managing external dependencies. The findings about staff resistance to IGF initiatives and bureaucratic constraints suggest that internal organizational factors significantly mediate the effectiveness of external resource management strategies, an aspect not fully explored in traditional RDT literature.

Third, the study contributes to RDT by demonstrating how institutional legacy and historical context influence resource dependency relationships. The transition from colonial-era full government funding to current market-based approaches shows that historical funding patterns create path dependencies that affect current strategic options.

Practical Implications

The research findings present crucial implications for various stakeholders in higher education management and policy. For university administrators, the priority lies in developing comprehensive IGF strategies that effectively balance immediate revenue requirements with long-term sustainability objectives. This includes creating robust incentive systems for staff participation, investing in professional development, strengthening external partnerships, and implementing efficient fee collection systems. Meanwhile, policymakers must focus on reviewing regulatory frameworks to grant universities greater autonomy in IGF initiatives while maintaining accountability, developing clear guidelines for public-private partnerships, and establishing mechanisms for sharing best practices across institutions.

The broader implications for higher education stakeholders emphasize the importance of a balanced approach between public funding and market-based revenue generation. This requires recognizing the need for diversified revenue streams while maintaining academic quality and engaging in constructive dialogue about IGF's role in institutional sustainability. Success in implementing IGF strategies ultimately depends on aligning theoretical understanding with practical application, particularly within the unique context of Ghanaian higher education. This necessitates a coordinated approach that considers both resource dependency theories and real-world implementation constraints.

Conclusion

This study has examined the complex landscape of Internally Generated Funds (IGF) strategies in

Ghanaian public universities through the lens of Resource Dependence Theory. The investigation of two major public universities reveals both the potential and challenges of IGF as a pathway to financial sustainability in higher education.

The findings demonstrate that while IGF strategies offer promising avenues for reducing dependence on government funding, their implementation faces significant challenges. The five key strategic approaches identified - student-based revenue strategies, infrastructure monetization, commercial ventures, external partnerships, and staff-driven revenue generation - each present unique opportunities and constraints. The success of these strategies is heavily influenced by regulatory frameworks, institutional capacity, and the broader socio-economic context of Ghana's higher education sector.

A critical insight emerging from this study is the delicate balance the universities must maintain between pursuing financial sustainability through IGF and fulfilling their core academic missions. The research reveals that effective IGF strategies require not only innovative approaches to revenue generation but also careful consideration of institutional values, stakeholder interests, and educational quality.

The study's theoretical contribution lies in its extension of Resource Dependence Theory to the specific context of higher education funding in developing economies. It demonstrates how universities' efforts to reduce resource dependencies through IGF are shaped by complex interactions between institutional capabilities, regulatory environments, and market forces.

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PARALLEL SESSIONS 2

DECOLONIZING CURRICULUM AND THE INTEGRATION OF THE SCIENCES AND HUMANITIES FOR KNOWLEDGE PRODUCTION EFFECTIVENESS

Date & Time: 29/11/24 11 am-1:00 pm

Session Chair: Prof. Akosua Adomako Ampofo, *Ghana Academy of Arts and Sciences*

Speakers: Hamidu Damba; Hasiyatu Abubakari;
Emmanuel Sasu Boakye and Francis Awuah; and Robert Agboyi

This session had four (4) presentations. The first presentation by Hamidu Damba, focused on the need to decolonize higher education to enhance employability of African university graduates using the University for Development Studies (UDS), Third Trimester Field Practical Training Program (TTFP) as a case study. The paper argued that the early introduction of students to decolonization issues could foster critical thinking which is successful for work success. The concludes that for universities to enhance the employability of their graduates they need to include theories in practical training.

The second presentation by Hasiyatu Abubakari, highlighted the challenges and opportunities of an approach that aims to bridge the gap between Science, Technology, Engineering, and Mathematics (STEM) and Social Sciences, Humanities, and Arts (SSHA). The paper noted that Ghana's Ministry of Education desired STEM to Humanities ratio is 60:40. The paper concluded that this notwithstanding, enrolment in higher education continues to witness a reverse as more students are enrolled and graduate in SSHA as compared to STEM.

The third presentation by Emmanuel Sasu Boakye and Francis Awuah, highlighted the exclusion of visually impaired students' (SVIs) from STEM-related courses, particularly mathematics and information technology, in Ghanaian HEIs. The presenters argued that this exclusion severely limits the interdisciplinary potential of visually impaired students and restricts their academic and professional advancement. The presentation concluded that policy reforms and inclusive teaching practices are urgently needed to ensure equal educational opportunities for all students.

The fourth presentation by Robert Agboyi was on the evolving landscape of digital skills demand within African Technical and Vocational Education and Training (TVET) programmes. The presentation identified in-demand digital skills and competencies necessary for employability in the contemporary workforce and highlighted strategies to align curricula with industry needs to enhance graduate preparedness for the digital economy and ensure the relevance of higher education in an increasingly digital world.

The full papers from Parallel Session Two are presented below.

DECOLONIZING HIGHER EDUCATION AND EMPLOYABILITY: PERSPECTIVES FROM A GRADUATE STUDENT AND A TEACHER OF AFROCENTRIC DEVELOPMENT

Hamidu Mohammed Damba

University for Development Studies, Tamale - Ghana

Abstract

Scholars in sub-Saharan Africa agree that there is a need to decolonize higher education, particularly university education, because these universities mimic European ones, are not fit for purpose, and cannot guarantee graduate employability. Studies on decolonization of higher education have overlooked how decolonization could impact graduate employability. This paper addresses how decolonization of higher education impacts graduate employability, focusing on the University for Development Studies' (UDS) Third Trimester Field Practical Training Program (TTFPP) in Tamale, Ghana. Reflecting on my experiences as a graduate student and a teacher of Afrocentric Development at UDS, this paper critically examines the TTFPP as a measure of decolonization and its impact on employability. It concludes that introducing students early to decolonization issues fosters critical thinking, which is essential for work success. Blending academic (theories and concepts) with field practical training programs such as the UDS TTFPP enhances graduate employability because of the skills and knowledge gained while on the field.

Keywords: Decolonization, University for Development Studies, TTFPP, employability, Higher Education, Universities.

Introduction

I have always asked why there is a need to decolonize higher education in Ghana or Africa. Mbembe (2016) submits the reason by arguing that Western perspectives influence higher education in Ghana or Africa. What does it mean for the institutions to be “Westernized”? Mbembe points out that African higher education institutions are local examples of a predominant academic model based on a Eurocentric body of knowledge. A Eurocentric canon is a collection of knowledge that only acknowledges Western ways of producing knowledge while disregarding other knowledge traditions. It also attempts to depict colonialism as a normal social relationship between people, rather than recognizing it as a system of exploitation and oppression. For these reasons, there is an increasing agreement that our institutions need to decolonize both knowledge and the university as an institution (Mbembe, 2016).

Amuzu (2019) argues that contemporary universities in Ghana and Africa originated from colleges established during colonial times and affiliated with European universities. These institutions were primarily staffed by European academics or Africans educated in the West. The main goal was to train individuals to support the colonial administrative systems. Amuzu adds that the university represented the pinnacle of the Western education system and greatly interested Africans. While there were various reasons for the struggle to establish university colleges, the overwhelming desire was to emulate Europe. As a result, the university colleges and subsequent universities mirrored the education system of the colonial powers in terms of content, structure, governance, curriculum, and teaching methods. Since education should be rooted in a cultural context, the cultural foundations of university education in Ghana were European.

Atuahene (2011) limited Information and Communication Technologies (ICTs) echoes similar comments by indicating that higher education was initially established in Africa to serve colonial and metropolitan interests, perhaps due to the need to decolonize it. If higher education in Ghana and Africa at large mimics the European education system and serves colonial and metropolitan interests, will higher education be able to serve the interests of students in Africa since the societies are entirely different? Mampane et al. (2018) argue that many African students are dissatisfied with higher education due to inadequate funding, high dropout rates, post-school employment, and a mismatch between graduates' skills and the demands of the labor market. The authors advance the point that decolonization acknowledges the impact of colonization and reference that colonization is associated with political, socioeconomic, cultural, and educational dominance (Mampane et al., 2018). This could also mean that for higher education to serve the interests of students and other stakeholders, decolonization is essential.

It is essential to recognize that colonialism affects not only lands and bodies but also the mind through Eurocentric scholarship. Eurocentric scholarship targets colonized cultures, myths, history, and philosophy, leading the colonized to lose their identity and direction ((Sesanti, 2019) both in the continent and the diaspora against European slavery and colonialism, was an expression of an African Renaissance (rebirth, reclamation. Therefore, there is a need to decolonize higher education institutions in Africa and Ghana. Eurocentrism is defined as prioritizing European cultures as a civilizational reference point while marginalizing other cultural values through Eurocentric education (Sesanti, 2019).

The era of land colonization may be over, but Western pedagogy still dominates the linguistic and academic spheres. Developing a curriculum that nurtures the kind of citizens the state requires is crucial. While it may seem trivial to those unfamiliar with the field of education, the curriculum plays a vital role in shaping and cultivating people's minds. Therefore, true decolonization should begin here. (Guoddar & Ennam, 2024).

What then constitutes decolonization? Decolonizing development involves disrupting deeply-rooted hierarchies, asymmetric power structures, universalizing Western knowledge, privileging whiteness, and the taken-for-granted othering of the majority world (Sultana, 2019). The decontextualized learner emerges due to epistemic impositions that define institutional cultures, making students who need to possess the cultural capital of Western epistemic frameworks deficient (Kumalo, 2023). Decolonizing higher education will mean uprooting or dismantling features of education that resemble or mimic the European education system.

Can decolonizing higher education in Ghana or even Africa impact employability? However, first, what

constitutes employability? For this article, York's (2006) definition of employability is adopted:

A set of achievements—skills, understanding, and personal attributes—makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community, and the economy (York, 2006, p. 8).

Are studies being conducted on decolonizing higher education and graduates' employability? My literature search found many writings on decolonization and Afrocentricity related to higher education in Africa. For instance, in Walker (2024), a 'capabilitarian' framework was highlighted to steer the decolonization of the curriculum, focusing on students' capabilities as a gauge of educational success. The study utilized theoretical analysis to investigate the merging of capability theory and decolonization. It was found that enhancing students' capabilities can empower them and improve their academic journey. Tavernaro-Haidarian (2019) examined the connection between decolonization and development, proposing reevaluating educational concepts. The study conducted a conceptual analysis of the educational framework from a colonialism perspective. It advocated for a redefined approach to conceptualizing education for development, emphasizing the importance of indigenous knowledge in a more inclusive manner. Távara and Moodley (2017) responded to the need for participatory approaches in decolonizing the academy by utilizing community engagement and focusing on social justice. The study employed reflective analysis using practical examples and community involvement. The findings highlighted the significance of community engagement in efforts to decolonize and enhance inclusivity in academic environments. Sultana (2019) explores development education from a decolonizing perspective and advocates for justice-oriented approaches. The study utilized a thematic analysis approach to development education within decolonial frameworks. Decolonizing development education can contribute to more equitable social outcomes and foster critical consciousness among students. Sesanti (2019) emphasized the significance of centering African women's experiences in educational narratives and practices. The study used qualitative analysis to examine educational frameworks that prioritize Afrocentric perspectives. It argued that integrating African women's voices is essential to

comprehensively understanding African identity and heritage. None of these studies have explored how decolonization impacts graduates' employability using the University for Development Studies (UDS) as a reference point.

This article explores how the decolonization of African higher education impacts graduate employability using UDS as a reference point. The paper is structured as follows: it explores the decolonization theory and concept of employability (York, 2006), the Method of analysis, personal reflection, decolonization and impact on employability, how universities are addressing the issue of decolonization, the conclusion, and the future of higher education in Africa.

Decolonizing theory

The evolution of decolonial theory (DT) has provided the tools to challenge the dominance of Eurocentrism in the curriculum and to establish a more inclusive understanding of knowledge and truth. DT questions the reliance on Western knowledge and curriculum, aiming for freedom and justice. It envisions knowledge within a new realm of possibilities that requires a renewal of epistemology, theory, and methodology (Govendar & Naidoo, 2023). One of DT's key contributions is its response to the ongoing effects of colonialism after the end of direct colonial rule and apartheid.

Decolonizing development involves disrupting deeply-rooted hierarchies, asymmetric power structures, universalizing Western knowledge, privileging whiteness, and the taken-for-granted othering of the majority world (Sultana, 2019). It has been argued that for decolonization to be effective, research into the depth of the construct has to be conducted to develop curricula relevant to students' needs and life experiences (Mampane & Omidire, 2018).

Decolonizing the university is a practical project: it aims to achieve epistemic justice and implement a pedagogical practice deeply rooted in its context (Lau & Mendes, 2024). Decolonization efforts are often described as strategies that seek to 'de-link,' 'dismantle,' 'reject,' 'contest,' or 'struggle against' existing norms. They may employ conflictual approaches (Booysens, 2016, as cited in Tavernaro-Haidarian, 2019).

Concept of Employability

York's (2006) definition of employability is used for this paper. According to York (2006), employability refers to:

Achievements in skills, knowledge, and personal traits improve graduates' employment and career success, benefiting individuals, the workforce, the community, and the economy (York, 2006, p. 8).

This definition highlights that employability is about performing on the job rather than acquiring the job.

The author goes on to make some assumptions about employability. For instance, argues. Yorke (2005) argues that:

- There is no guarantee or assurance that one possesses some characteristics that will translate employability into employment, as there are many extraneous variables, such as socioeconomic variables (national, regional, or even local).
- Skills and knowledge should not be appreciated in a narrow sense.
- Gaining graduate jobs and succeeding in them should be separate. Higher education, in particular, describes the graduate student's past performance.
- Students exhibit employability concerning a job if they can demonstrate some achievement.
- The curricular process may facilitate the development of appropriate employment prerequisites but does not guarantee them. Therefore, it may be inappropriate for students to be highly employable based on curricular provision alone. Curricular provision may be necessary, but more is needed for employability.
- Employability and employment are not the same. Employability implies the capacity of the graduate student to perform or function in a job, while employment is the acquisition of a job, whether graduate or otherwise.

Decolonization and its Impact on Employability

It has been established that in Ghana and many parts of Africa, higher education and universities mainly mirror Western universities or are established along the lines of Western Universities (Amuzu, 2019; Mbembe, 2016). Higher education in Ghana and Africa mirrors the Western education system, meaning that knowledge, curriculum, pedagogy, and methods in Africa's higher education also mirror the Western education system. However, there is a connection between European higher education's knowledge, methods, and pedagogy and their society. This connection enhances graduate employability in Western countries since the knowledge is context-based. In Africa, higher education content does not reflect society since it was established along the lines of the European education system. This phenomenon produces graduates who are decontextualized and not fit for African society, reducing employability. Decolonizing higher education in Africa and Ghana may impact employability only when students can successfully apply what they have learned in school in their society and their jobs. This may also require an understanding of their society and a bridge between academic and fieldwork. The University for Development Studies Third Trimester Field Practical Training Program (TTFPP) may be one of the ways universities address decolonization and its impact on graduate employability.

University for Development Studies

The University for Development is a university dedicated to serving underprivileged communities. It was established as one of the first universities in Northern Ghana by the Government of Ghana through PNDC Law 279 on May 15, 1992. One of the university's main goals is to integrate academic learning with community engagement to foster mutual growth and development in Northern Ghana and the entire country. The university stands out for its community-technical interface program, which combines academic coursework with hands-on community-based practical training, known as the third-trimester field practical program (uds.edu.gh).

Method

Reflection is a vital resource in the research process. It must not be something one should be ashamed of, bracket, or a bias in the research process (Braun & Clarke, 2022). In this paper, I use my reflection as a teacher of Afrocentric development and a graduate student who has moved through the academic journey on how decolonizing higher education could impact graduate employability with particular reference to the UDS.

Personal Connection

I started working with the National Commission for Civic Education (NCCE), where I worked for almost seven years. In 2016, the Births and Deaths Registry employed me as an Assistant Registrar of Births and Deaths. The University for Development Studies (UDS) employed me in 2020 as an Assistant Lecturer. In 2012, I began a Master's program, which I completed in 2014. Educationally, I completed the University for Development Studies in 2007. Between 2009 and 2010, I completed a Diploma in Education. I began my Master's in 2012 and completed my 2014 and am presently a PhD candidate at one of the universities in Ghana.

As a young scholar and a PhD candidate, I understood decolonization in my philosophy class when I was introduced to critical theory. I also understood decolonization in my adult education class when Afrocentricity was introduced as part of the coursework. Fortunately, in my school at the University for Development Studies, Faculty of Sustainable Development Studies, Department of Development Management and Policy Studies, I was assigned to teach Afrocentric Development as a course. These developments opened me up to issues of African development from the lens of decolonization and Afrocentricity. I began to appreciate issues affecting Africa broadly and not from a narrow perspective. I learned to discard issues on the fact that 'Africans are lazy' and many of the reasons attributed to Africa's development and not only to higher education.

As an aspiring scholar, I began to question many of the courses being taught at the universities. For instance, I recall being introduced to Rostow's theory of development, which sought to place Africa at the last stages of development. The theory essentially is a European theory imported into higher education in UDS, wholly decontextualized from society, and

cannot enhance employability. The implication is that courses at least must reflect what pertains to society, or better still, the university should provide mechanisms for students to apply what has been learned in society, thereby enhancing their employability. Note that the universities mimic the European education system where the society (European) is different from African society.

How is the University for Development Studies Addressing the Issue?

First, unlike myself, where I began to understand decolonization at the PhD level, in UDS at the Faculty of Sustainable Development Studies, Department of Development Management and Policy Studies, the Afrocentric Development course is being taught at the undergraduate level. This phenomenon allows students to understand decolonization from an Afrocentric perspective and to foster personal decolonization. In a nutshell, critical thinking is enhanced and fostered, an essential ingredient for being successful at work.

In the University for Development Studies, one way of decolonizing its curriculum and promoting the employability of its graduates is to combine academic work (theories and concepts learned in the classroom) with field practical training, labeled as the Third Trimester Field Practical Training program (TTFPP). After learning theories for the first and second trimesters, students are deployed to rural communities in an integrated fashion as part of the third trimester to stay in the communities for six to eight weeks. It is integrated because Agric students, education students, development students, and even midwives are integrated to remain in one community for a duration. While these students stay in the community, they apply their theories and identify problems by engaging with community leaders, chiefs, and opinion leaders. They undertake community entry programs, and at the end of the stay, they write a comprehensive report. Note also that because these students come from different backgrounds, they learn to live together, teamwork is fostered, there is cooperation, and they learn to resolve conflicts. Generally, these students tend to understand rural and community life since some have lived in urban communities. These elements that students learn while in the program cannot be found in the curriculum and go a long way to enhancing employability. For instance, when I had my first

job with the National Commission for Civic Education (NCCE) in 2009, many assigned tasks were familiar, and I could write good field reports. My functionality was enhanced through the fieldwork rather than through the academics, even though it may have played a role. These experiences enhanced my functionality when I joined the Births and Deaths Registry in 2016.

Conclusion

Introducing students early to decolonization issues fosters critical thinking, essential for work success. Blending academic (theories and concepts) with field practical training programs such as the UDS TTFFP

enhances graduate employability because of the skills and knowledge gained while on the field.

Future of Higher Education

For Universities in Africa to achieve their objective of providing the needed power to solve societal problems, they need to blend their academics with those of the community. Note that Africa's society is different from Europe's, and understanding the society will help students solve problems, create jobs, and function effectively in these jobs. The future of higher education can only be bright when efforts are made to decolonize by including students in the decolonization process.

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BRIDGING THE GAP BETWEEN STEM AND SSHA IN HIGHER EDUCATION IN GHANA: THE INTEGRATED APPROACH

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Abstract

The world, in recent times, emphasizes Science, Technology, Engineering, and Mathematics (STEM) education, relegating studies in Social Sciences, Humanities, and Arts (SSHA) as secondary. This research investigates the challenges and opportunities of an approach that aims to bridge the gap between STEM and SSHA in higher education in Ghana. Although the Ministry of Education has a target of a 60:40 STEM to Humanities ratio, enrolment in higher education continues to witness a decline as more students are enrolled and graduating in SSHA compared to STEM. This desktop conceptual study explores both grey and academic literature in analyzing current trends and proposing an integrated approach to higher education in Ghana. The finding shows that the current target of a 60:40 STEM: Humanities ratio may be unachievable anytime soon, considering current enrolment figures. Instead, the paper proposes an integrated curriculum where students take core courses across disciplines. The proposed approach trains STEM graduates with skills in ethical leadership and critical thinking, while SSHA graduates also acquire knowledge in innovation and technology. The proposed model suggests a curriculum structure that ensures all graduates acquire a holistic skill set, irrespective of their majors. The integrated approach is consistent with global trends in interdisciplinary education aimed at addressing the complex, multifaceted challenges of the 21st century. The study concludes that graduates, when trained with the integrated curriculum, will be well-rounded, employable in diverse work environments and can contribute effectively to sustainable development.

Keywords: STEM, Social Sciences, Humanities, and Arts, integrated approach, Ghana.

Introduction

Higher education is currently undergoing a major transformation worldwide as a result of rapid technological advancement and global interconnectedness. Universities are confronted with the challenge of preparing students who have the right skill sets for a future characterized by complex, multifaceted problems that go beyond the simple categorization into traditional academic disciplines (Hobbs et al. 2018; Trytler 2020, among others). This global trend has called for the re-evaluation of the balance between Science, Technology, Engineering, and Mathematics (STEM) fields and Social Sciences, Humanities, and Arts (SSHA) in higher education curricula. Ghana, like many developing nations, has placed significant emphasis on STEM education in recent years. This focus is driven by the belief that a strong foundation in these fields is crucial for national development, economic growth, and global competitiveness (Mohammed et al. 2022; Sam-Amoah 2020; GPRS II-2006-2009; GoG, 2005). The Ministry of Education in Ghana has set an ambitious target of achieving a 60:40 ratio of STEM to Humanities enrolment in higher education institutions (SEP 2018-2030). However, this goal, with a 12-year maturity period, is about 6 years old and appears 'elusive', with universities consistently enrolling and graduating more students in the humanities compared to the applied sciences.

The continuous imbalance between STEM and SSHA fields in Ghanaian higher education raises important questions about the effectiveness of current educational policies and the underlying factors that contribute to this trend. This also calls for the need for a more balanced approach to educational reform that recognizes the value of both STEM and SSHA disciplines and their potential contributions in any attempt aimed at producing graduates with the relevant skill set for sustainable development. The main objectives of the current study are to (i) demonstrate the relevance of both STEM and SSHA for sustainable development. (ii) Analyse current enrolment trends and challenges in meeting the 60:40 STEM: Humanities target, and (iii) propose an integrated approach for STEM-Humanities education in higher education to offer students more holistic training

The concept of an integrated approach to higher education, as proposed in this study, offers a promising alternative to the binary STEM vs. SSHA paradigm. This approach advocates for a curriculum that blends elements from both domains, which allows students to develop a diverse skill set regardless of their primary field of study (Akon-Yamga et al. 2024; Sanders, 2012; Martín-Páez et al., 2019; Bertrand and Namukasa, 2020, cf. Akon-Yamga et al 2024; Tetteh et al. 2019; Essegbey et al. 2021). The model aims to produce graduates who are not only technically efficient but also culturally aware, ethically grounded, and capable of critical thinking. This will be achieved by incorporating core courses from both disciplines as an integral part of the curriculum. The findings and recommendations of this study open new possibilities for reimagining the role of higher education in shaping the future of Ghana and beyond. This research not only contributes to the ongoing

discourse on educational reform in Ghana but also offers insights into the broader question of how higher education can evolve to meet the complex demands of our interconnected world. It also challenges the privileging of STEM as a singular engine of national growth and development and argues that this is a colonial legacy that marginalises the humanities, social sciences and arts. The proposed integrated model ensures equal value of different knowledge systems.

The paper is structured as follows: The next section gives a background discussion on STEM-Humanities education in higher education in Ghana, reviewing relevant existing literature. Section three (3) is the methodology, while four (4) is the findings and a brief discussion. Section five (5) examines the proposed integrated approach to STEM-humanities education in Ghana. Finally, section six (6) discusses the implications of the findings and offers conclusions and recommendations for policymakers and educational institutions.

1. STEM vs. SSHA education in Ghana

The quest for STEM education in Ghana began with Ghana's Vision 2020, a coordinated programme of economic and social development policies in 1995. This propelled the need to promote Science and Technology (S&T) culture at all levels of education and production for the acceleration of economic growth and to improve the quality of life of the citizenry (Sam-Amoah 2020). Ghana's Growth and Poverty Reduction Strategy (GPRS II -2006-2009) (GoG, 2005) also emphasized the promotion of S&T as a key strategic support for the enhancement of productivity in agriculture and agro-industry.

Ghana's position on STEM-Humanities fields in higher education is currently highlighted in the Strategic Education Plan (SEP) 2018-2030, which is a strategic education document of the Ministry of Education (MoE), Ghana (Ministry of Education, n.d.). The core mission of the MoE, as stated in the SEP 2018-2030:13, reads:

“To provide relevant education, with an emphasis on science, information, communication, and technology, to equip individuals for self-actualization and peaceful coexistence, as well as skills for the workplace for national development.”

The MoE places a premium on having more students trained in STEM compared to SSHA. This is further traceable in the key objectives of the Education Strategic Plan (ESP) 2018-2030 as presented below:

- i. Improved equitable access to and participation in inclusive education at all levels,
- ii. improved quality of teaching and learning, and STEM at all levels,
- iii. sustainable and efficient management, financing, and accountability of education service delivery. (SEP 2018-2030, MoE n.d.)

Although the Strategic Education Plan (SEP) 2018-2030 of the MoE, Ghana, indicates a quest to achieve a STEM-Humanities ratio of 60:40, the reverse is the current reality, with a low enrollment of students in science at the SHS level cited as the major hindrance (Mohammed et al, 2022:10 cf. GTEC). The three (3) key objectives of SEP are targeted at achieving SDG 4, Quality education for all. However, SDG 4 has several sub-objectives. While SDG 4.4 emphasizes the need to equip graduates/learners with relevant skills “including technical and vocational skills, for

employment, decent jobs, and entrepreneurship”; SDG 4.7 emphasis skills needed for sustainable development and sustainable lifestyle, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and culture's contribution to sustainable development”. SDG 4 has not specifically identified STEM over Humanities, as it recognizes the important contribution of the courses in the humanities in providing SDG 4.7, as well as all the others. Both on the surface and with deep analytical lenses, one sees SDG 4 as giving equal strength to courses in both the humanities and STEM. This translates to a balanced approach of a 50:50 STEM: humanities ratio, or it is in line with the call for an integrated curriculum in higher education in Ghana.

Portillo-Blanco et al. (2020) present a robust systematic review that examines the principles and characteristics that define integrated STEM education. Their study shows that although there is increased interest in STEM education, there is little consistency in the way its theoretical basis is interpreted. This lack of cohesion makes it difficult to understand, implement and evaluate STEM initiatives in practice. After reviewing 27 articles, they identified 16 core principles of integrated STEM education, including integration, problem-based learning, design, real-world context, inquiry, teamwork, engineering centrality, student-centred learning, mathematical thinking, 21st-century skills, assessment, hands-on, modelling, STEM-career, technology literacy, and STEM practices. They explain that 26 out of 27 articles used in their study admit that ‘integration’ and ‘problem-based’ approaches are most critical, followed by design, and real-world context, among others. Table 1 summarizes these findings.

Table 1: Characteristics table for integration principle

1.1	At least two disciplines	[7,36,42,48,50,63,65–68]
	Specific and shared learning goals	
1.2	- Identify which discipline you are using, for what, and how - Retain the unique perspectives and thinking styles of each discipline	[7,33,66,71]
	At least two disciplines should have similar importance	
1.3	- The presence and combination of the disciplines involved should be constantly revised to ensure they have similar presence	[43]
	Integration of content, procedures, and competences	
1.4	- ¹ Allow the learner to realise which content and skills are needed	[11,32,61,66,67,69], [71] ¹ , [72–74]
	Content integration	
1.5	- Connected nature of the disciplines - Support of one discipline content to understand other - The decisions made during the project should be based on the combination of the content of different disciplines - ¹ Content coherent with the curriculum	[7,17,27,28,48], [60] ¹ , [68,70], [71] ¹
	Context integration	
1.6	- Disciplines to give context - Connections via problems - Context options: client or science problem to understand the context - Social context to give purpose to the project	[7,11,17,28,36,42,43,48,60,64]
	Explicit integration: students do not integrate spontaneously the concepts of different disciplines	
1.7	- Use different representations (concept mapping, diagrams, etc.) - Strong teacher facilitator	[7,27,36,48,60]
	What/how integrate	
1.8	- More integration is not necessarily better - Use also non-STEM disciplines (social context, arts, etc.) - Use of cross-cutting concepts	[7,70]
1.9	Learner has the autonomy to decide the disciplinary knowledge to use every time	[64]

Adopted from “A systematic literature review of integrated STEM education: Uncovering consensus and diversity in principles and characteristics.” By Portillo-Blanco, A., Deprez, H., De Cock, M., Guisasola, J., & Zuza, K. 2024. Education Sciences, 14(1028), p.9. <https://doi.org/10.3390/educsci14091028>

Table 1 emphasizes three key areas of integration: content integration, context integration, and what/how to integrate. Portillo-Blanco et al. (2020: 9) advocate for the integration of connected disciplines and the need to support one discipline contact to understand another. This requires interdisciplinary approaches to content creation. For instance, one can deploy a problem-based oral narrative on environmentalism to teach climate change, adaptation, and mitigation. This same approach can be further developed to create an appropriate context for the lesson, as described in 1.5 in Table 1. Point 1.8 goes further to advocate the need to integrate social contexts, arts, etc. The learner-centred approach and the 21st-century skill are fully realisable in courses, content, and approaches that are related to the humanities. The findings of the systematic review by Portillo-Blanco et al. (2020) demonstrate the need for an integrated STEM education across levels of the educational spectrum.

1.1 Current realities of enrolment in HE in Ghana

Mohammed et al (2022) is a country report on Ghana’s Tertiary Education (TEIs) with data from 265 accredited public and private Tertiary Education Institutions. The report also used information from the Ghana Tertiary Education Commission (GTEC) in addition to other relevant agencies under the sector Ministry. They follow provisions in SEP 2018-2030, which advocate for a 60:40 ratio of STEM: Humanities in Ghana but observe that the achievement of this target is a challenge due to the low intake of science students in the SHS.

In their work, they present enrolment figures in Science and Arts-Related programmes in tertiary education institutions in Ghana. They explain that in the 2020/2021 academic year, 225,847 students were admitted to science-related (i.e., Applied Science, Technology, Agriculture, Engineering, etc.) programmes, while 354,904 students were admitted to arts-related (i.e., Business, Social Science, Humanities, etc.) programmes. These

figures presented in Table 2 below were obtained from the *Data Management Department, GTEC* and reported by Mohammed et al. (2022: 10). They clearly reveal that the intended 60:40 STEM-Humanities ratio is the reverse in actual practice.

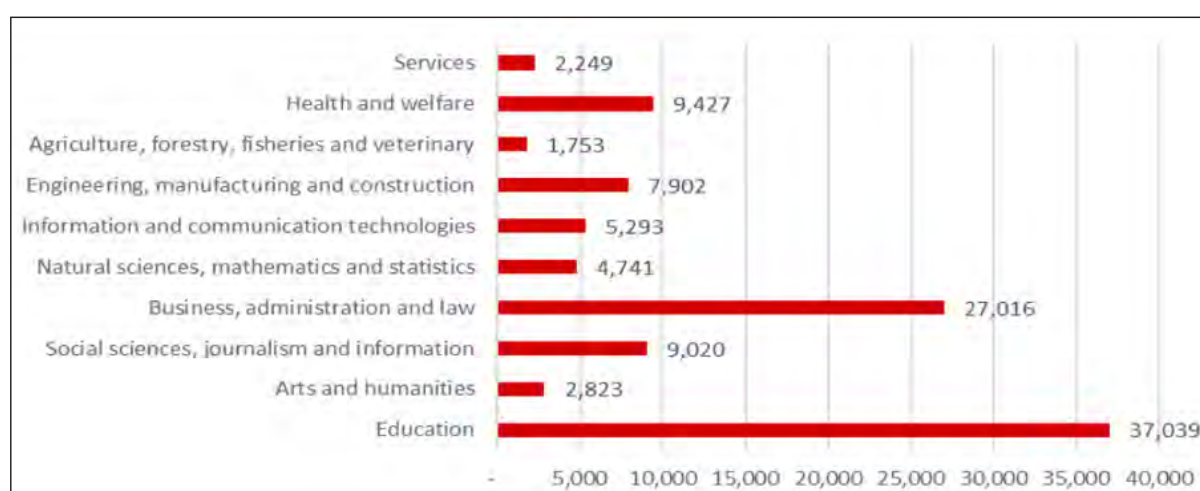
Table 2: Enrolment in Science and Arts-Related Programmes

	Science	Arts
Total, Enrolment	225,847	354,904
%Norm	60	40
%Actual	39	61

Note. Adopted from Mohammed et al. (2022, p.10), UNESCO Higher Education Report: Ghana.

They equally present figures to show the number of students who graduated in the year under review using the International Standard Classification of Education (ISCED) field of education. They are quick to add that the numbers keep increasing year-on-year. They credit the *Data Management Department of GTEC* as the source of their information.

Fig. 1. Graduate Students by ISCED Fields of Education



Note. Adopted from Mohammed et al., (2022, p.12), UNESCO Higher Education Report: Ghana.

Additionally, a report published by the African Research Universities Alliance (ARUA) in 2022 reveals that the social sciences, humanities, and arts (SSHA) continue to be more popular compared to other fields of research, in terms of postgraduate enrolment (Ogega et al. 2023:2; Waruru 2022). However, there are existential gaps and challenges in the provision of research support in the SSHA fields across the African continent. Ogega et al. (2023) identify the challenges as ranging from inadequate availability and access to research funding to limited research support systems, in areas including mentorship, publications, and protected time for research. Funding support for research from African governments and other funding institutions remains

very disproportionate, with SSHA suffering more compared to other fields. Only 42.4% of surveyed scholars had received some kind of funding from their universities. They add that these challenges have resulted in substantial regional differences in research capacities and outputs; while Africa contributes only 5% of global SSHA scholarship, Southern Africa alone contributes over 50% of publications, with Francophone and Lusophone countries contributing only about 5%. As a form of recommendation, the authors recommend the establishment of a dedicated platform to offer research support for SSHA across Africa. There is a need to increase investment in knowledge generation and dissemination in SSHA,

and SSHA should also align their research agenda with local, regional, and global development priorities.

While emphasizing the need for a comprehensive understanding of the political, socio-cultural, and economic contexts that affect higher education in Africa, Bekele (2022) emphasises the need for a comprehensive understanding of the political, socio-cultural, and economic contexts that affect higher education in Africa. The author asserts that the key factors stifling critical thinking in HE includes (i) colonial legacy through Western education, which prioritized colonizer's needs over critical reflection, and (ii) post-colonial stress disorder, which occurred after independence, when new power structures continued to suppress critical thinking in academia. (iii) modernization discourse which encourages the uncritical adoption of Western knowledge systems and practices in universities in Africa. (iv) sociocultural conditions which include cultural norms that discouraged challenging authority or senior figures among others. Bakele further argues that it is reductionist to attribute the lack of critical thinking solely to academics and students. To resolve this problem, Bakele recommends the strategic integration of critical thinking into university governance, teaching, learning, and assessment while guaranteeing institutional autonomy and academic freedom. In all, there is a need for a paradigm shift in African HE.

Scoping through the websites of the College of Humanities, University of Cape Coast, one finds the following:

“The College offers inter-disciplinary programmes equipping its products with creative abilities for the job market and critical thinking to make the graduate of the College fully suited to adapt to any modern social environment they may find themselves. Thus, the College, instituted on August 1, 2014, can boast of numerous graduates, both undergraduate and post-graduate, who have attained success in the business, industry, and the public sector in Ghana and abroad.” (College of Humanities, UCC - <https://chls.ucc.edu.gh>)

The College of Applied Sciences, University of Ghana also has the following to say:

“The College of Basic and Applied Sciences (CBAS) has been at the forefront of applied

research, teaching and learning, and human-centred innovations. We run a diverse array of programs in applied and basic sciences and engineering at the graduate and undergraduate levels, supported by modern laboratory infrastructure. Some of our products are revered industry captains, blazing the trail of innovations, transforming the landscape of leadership in the minerals and extractive sector, agriculture, engineering, drug discovery, renewal energy, waste management, information technology, artificial intelligence, and many more.....” CBAS, UG (<https://cbas.ug.edu.gh/message-provost>)

The missions of these two colleges, although they have their strengths, reveal individual weaknesses when it comes to offering holistic education. The College of Humanities has a mission that is heavily focused on creative and critical thinking without interest in scientific and technological proficiency which may negatively impact the ability of graduates in areas such as IT and engineering. Although it mentions interdisciplinary programmes, little is said of collaboration with STEM fields. Similarly, CBAS, University of Ghana, also places very minimal emphasis on critical and ethical reasoning. While it prides itself in producing technically skilled graduates, it does not place a premium on developing the ethical, cultural, communication, and thinking skills of these graduates which are essential for responsible leadership and social engagement.

Several reasons are advanced for the prioritization of STEM in education in Ghana. Some of the reasons include positive economic impact, the ability to address global challenges, the development of 21st-century skills, a catalyst for Africa's development, and workforce preparation among others. For instance, Takyi-Bondzie et al. (2022) explain that excellence in STEM education offers a positive impact on “productivity, and fosters competitiveness in multiple sectors and fields including health, technological innovation, and advancement, manufacturing, the distribution of information, political processes and cultural change” (Peters, 2006; Asunda, 2014; Takyi-Bondzie et al (2022: 41). They further add that STEM education helps students to develop 21st-century competencies including critical thinking, and problem-solving skills. The World Bank (2014) report highlights the under-research capacity of STEM education in Sub-Saharan Africa and demands

a conscious attempt to offer skills and education including STEM which could serve as a strategy for Africa's socioeconomic transformation and poverty reduction (Takyi-Bondzie et al 2022). The African Union Agenda 2063, "projects African nations to be amongst the best-performing countries in global measures by the year 2063". This is to be achieved through strategies that include "investments in science, technology, and innovation"

Following the global conscious attempt by governments and higher education institutions, to strengthen STEM fields over SSHA, the late Pope Francis underscored the relevance of literature at a time when universities are cutting down on programs in the humanities and focusing on STEM education. Pope Francis's missive speaks directly to SDG 4.7 as the literature serves as a tool for both personal and spiritual growth. The Pope emphasizes the fact that literature can widen perspectives, develop empathy, and enhance understanding of the human condition in association with the divine world.

According to Pope Francis, literature provides an "oasis" during challenging moments in our lives. They serve as emotional support for inner peace and expand the worldview of readers. These propel personal formation and growth. Additionally, books require greater engagement from readers inspiring them to "rewrite" their own experiences and memories through imagination. Pope Francis explains that literature connects people to their culture and faith. People, enter dialogue with the culture of their time and live and experience their people with their culture. C.S Lewis puts this by saying "In reading great literature I become a thousand men and yet remain myself. ...". It equally allows people to develop a sense of empathy towards one another. Readers develop skills that help them understand complex situations which in turn make them patient, humane, and sensitive to the plight of others. Another crucial benefit is its ability to train people to be discerning. Thus, reading offers "training in discernment" as it helps people to gain insight into their interior world. It serves as a telescope that reflects "the immense distance" that separates the totality of human experience from our perception of it." Literature serves as a language that expresses the diversity of humanity and the varieties of cultures without undermining anybody. It allows for moral and ethical reflections since it is not relativistic and does not strip us of values. The symbolic representation of good and evil, truth and falsehood prevent us from being

morally judgmental of others and also prevents us from blind or superficial condemnation.

The relevance of both STEM and humanities educations cannot be overemphasised for which reason a balanced education offers greater opportunities for students to gain holistic training than a focus on STEM which may later produce students who have deficiencies in what may primarily have been the focus of the humanities.

2. Methodology

This study used the desktop conceptual research approach to explore existing literature and identify gaps in our current understanding of STEM: Humanities fields in higher education in Ghana and the need to propose a mitigating integration approach that can provide graduates with a holistic education for sustainable development. This study approach made possible the broad exploration of topics without the need for primary data collection. This helped in scrutinizing trends and policies in higher education in Ghana and some parts of Africa.

The study conducted a systematic search using academic databases including Scopus, Google Scholar, ERIC, and African Journals Online, among others. Key search terms included: STEM education in Ghana, Humanities enrolment in Ghana, integrated STEM-humanities in higher education in Ghana, STEM SSHA integration, the relevance of STEM in Ghana and Africa, and the role of literature in Higher Education among others. Papers were selected based on their relevance quality of peer review and date of publication. Papers that have these themes were not so extant. The most dated are about 10 years old. Additionally, grey literature was also used. These included policy documents, strategic plans, and reports from Ghana's Ministry of Education.

The main data sources are institutional websites. Data were taken from the University of Ghana CBAS website and the University of Cape Coast College of Humanities website. The Ministry of Education's report titled Strategic Education Plan 2018-2030 (MoE n.d.) was used, and international reports from UNESCO (Mohammed et al. 2022) among others were resourceful.

The data was analyzed using the thematic and comparative analyses approaches. Themes that are discussed include (i) Current enrolment trends in STEM and SSHA fields in Ghana, (ii) challenges

in achieving the target number of 60:40 STEM-Humanities ratio, (iii) benefits of implementing an integrated curriculum in higher education, and (iv) global best practices. The comparative analysis approach compared Ghana's approach to STEM and SSHA education with international trends and best practices to identify areas for improvement and innovation.

Based on the outcome of the analyses, a conceptual framework for the integration of STEM and SSHA in higher education in Ghana was developed, taking cognizance of both local and global trends.

3. Findings

3.1 Enrolment figures show the continued popularity of the humanities program in HE

The data presented by Mohammed et al. (2022, cf. GTEC 2022 report) shows persistently higher numbers of enrolment in the humanities and social sciences compared to STEM. This observation differs from the main objective of the SEP agenda of the MoE of Ghana. According to the report, the 2020/2021 academic year saw the number of students admitted to the humanities as 354,904 (Business, Social Science, Humanities, etc) compared to a figure of 225,847 for STEM programmes (Applied Science, Technology, Agriculture, Engineering, etc.). The persistent higher enrolment in the humanities is not only recorded in undergraduate programmes.

The African Research Universities Alliance (ARUA) REPORT OF 2022 also shows a trend where the social sciences and humanities continue to remain more popular in terms of enrolment figures in universities across Africa (Ogega et al., 2023; Waruru, 2022).

3.2 Challenges in meeting the 60:40 STEM: Humanities ratio

The current emphasis on STEM over the humanities is already a challenge since that tends to produce graduates who stand the risk of lacking critical skills that make them socially unfit and unacceptable in the communities where they are supposed to work. The hype of technical skills over ethical and communal values will, in the long run, call for another strategy that will seek to reverse the 60:40 in favour of STEM to one in favour of the humanities. The question remains, why not a 50:50 ratio or a target that ensures all graduates have relevant technical and ethical skills that offer them holistic training?

The main challenge in the low figures in STEM has its root in the 12% enrolment of science students in SHS (Mohammed et al. 2022). Thus, the higher intake of students at that level will possibly have a replicating effect on the enrolment figures in higher education. What is equally noteworthy is the fact that science students in SHS can offer to read courses in the SSHA at the university, but the reverse is not the case. This is supported by the admission requirements of the University of Ghana, quoted below in Table 3.

Table 3: University of Ghana admission requirements

STEM Programmes		SSHA Programmes	
Bachelor of Science in Engineering Sciences (Material Science & Engineering Option)	Entry Requirements Core: Credit passes in English, Core Mathematics, Integrated Science & Social Studies Electives: Credit passes in Physics, Chemistry, and Elective Mathematics, with at least a B3 in Elective Mathematics	Bachelor of Laws (LLB)	Entry Requirements Core: Credit passes in English, Core Mathematics, Integrated Science & Social Studies Electives: Credit passes in any three elective subjects

Bachelor of Veterinary Medicine	Entry Requirements Core: Credit passes in English, Core Mathematics, Integrated Science & Social Studies Electives: Credit passes in Biology, Chemistry, and either Physics or Elective Mathematics	Bachelor of Science in Business Administration	Entry Requirements Core: Credit passes in English, Core Mathematics, Integrated Science & Social Studies Electives: Credit passes in any three elective subjects
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Note. Adapted from the University of Ghana. (2025). Undergraduate entry requirements. (<https://admissions.ug.edu.gh/undergraduate/entry-requirements> [Retrieved on Oct.4, 2025])

This means that the increased intake of students for science at SHS does not automatically mean an increase in STEM numbers in higher education. This fear is supported by limited resource allocation for STEM at both SHS and HE. Limited resources will hurt student performance at SHS, which will automatically affect their chances of getting admitted into STEM programs at the university. The need to re-examine the 60:40 goal for a more balanced goal between STEM and SSHA is a critical one.

3.3 Discussion

The data attests to an increasing interest of students in programmes in the humanities, posing a challenge to the target of a 60:40 STEM: humanities ratio in higher education in Ghana. The skill sets obtained from the field of humanities are as critical as those acquired from STEM for which reason a more balanced curriculum or a target of an equal ratio of 50:50 STEM: Humanities stands to serve Ghana better. With the current reality of increasing numbers of graduates from the humanities and the stagnant 12% intake of science students in SHS, the proposal for an integrated approach aimed at offering a holistic education to all graduates irrespective of their areas of specialization offers a better solution. Thus, STEM students acquire critical thinking and ethical leadership training, while humanities students acquire skills in innovation, among others. Selected courses in the humanities, such as philosophy, literature, and cultural studies, can be made required courses for STEM students, while students in the humanities can be made to take courses in innovation and engineering as required courses.

The integrated approach aligns with the growing recognition that the challenges facing modern society, from climate change to social inequality, require solutions that draw upon diverse knowledge bases. The proposed model breaks down the silos between academic disciplines as it recognizes that career paths are increasingly becoming non-linear. It offers students the opportunity to adopt and adapt

to a wide range of situations they may encounter in their professional lives. An education that provides a broad foundation across STEM and SSHA fields can enhance career flexibility and lifelong learning capabilities.

The implementation of an integrated curriculum in Ghanaian higher education institutions presents both opportunities and challenges. It requires a fundamental rethinking of educational structures, faculty collaboration across departments, and potentially, changes in resource allocation. However, the potential benefits in terms of producing more versatile graduates and fostering innovation make this a compelling direction for educational reform.

4. Proposed Integrated Approach

Following the findings of this study, an integrated approach to higher education is suggested for Ghana to bridge the gap between STEM and SSHA fields. The suggested approach is intended to produce graduates who are well-rounded and equipped with both technical and humanistic skills and who are better prepared to tackle the complex societal challenges we are confronted with. Both STEM and SSHA fields should be seen as equally relevant since graduates, irrespective of their major, can advance the agenda of sustainable development.

The proposed integrated STEM-SSHA approach is one driven by ideas including the following: (i) interdisciplinary core Curriculum, (ii) Cross-

Disciplinary Majors, (iii) Flexible Minor Programs, and (v) Integrated Research Opportunities.

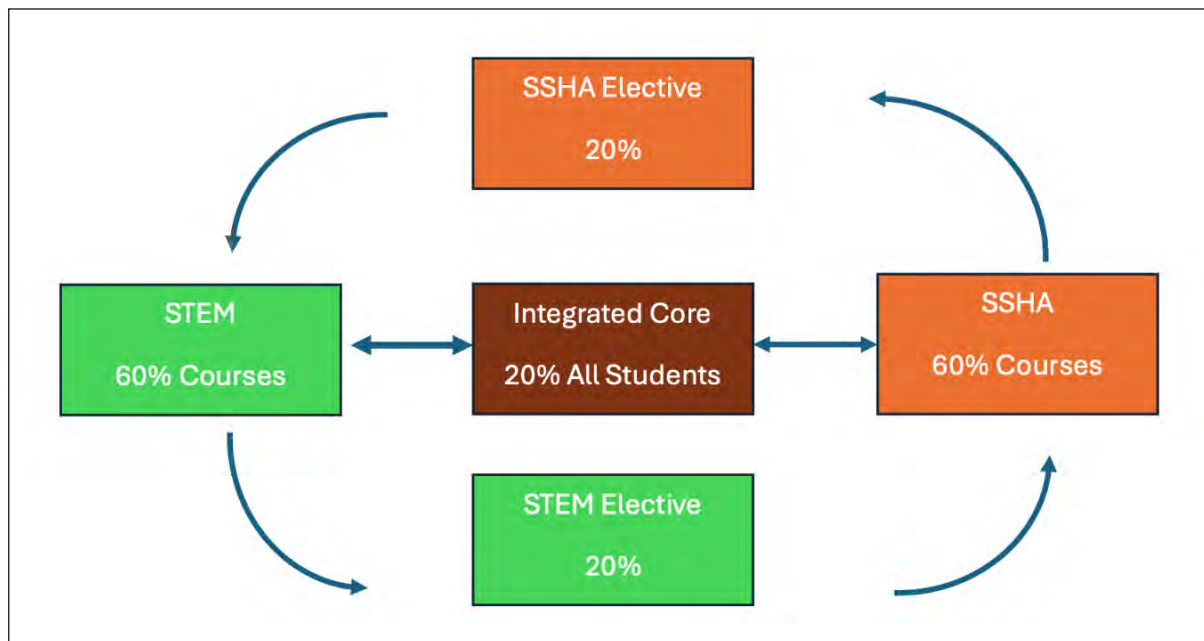
- i. *Interdisciplinary Core Curriculum:* This type of curriculum integrates knowledge from several disciplines; it is designed around overarching themes and allows students to navigate complex topics and develop unique learning outcomes (Repko 2007; Holley 2024). Every student, irrespective of their majors, would be required to take a set of interdisciplinary core courses that blend both STEM and SSHA perspectives. Some possible courses may include: “Ethics in Technology”, “Science Communication”, “Cultural Contexts of Innovation”, and “Quantitative Methods for Social Sciences”.
- ii. *Cross-Disciplinary Majors:* This combines courses and insights from various fields and trains students to tackle complex problems that are unsolvable through a single discipline; it enhances students’ research competence and prepares them for the real world and its challenges (Ramachandran et al. 2022). Instead of advocating for a 60:40 ratio of STEM: Humanities, programmes that offer Cross-Disciplinary Majors could also be a way to create a balance between STEM: Humanities in higher education. Such programmes may include Digital Humanities, Sustainable Development Studies, and Science, Technology and Society. Graduates from these fields will have the requisite skills that blend both STEM and humanities, making them employable in a wide range of areas for sustainable development.
- iii. *Flexible Minor Programs:* Another strategy involves encouraging students in the humanities and social sciences to pick minors in STEM fields and vice versa. For example, a student offering Computer Engineering as a major can pick Philosophy as a minor. A student offering Literature in English Language can pick Data Science as a minor.

- iv. *Integrated Research Opportunities in the STEM-SSHA Approach:* This approach brings together students and faculty from both STEM and SSHA fields to engage in collaborative research on complex social issues (Ramachandran et al. 2022). This is one approach that recognizes that the complex problems of today’s world need insights and methodologies from multiple disciplines for a comprehensive solution. In a typical scenario, let’s assume a topic such as Climate Change Adaptation in a Coastal Community in Ghana. The teams for such a project will need to include: an environmental scientist who will study the physical impact of sea-level rise, a sociologist who assesses community perception and behaviours, an engineer who designs adaptive infrastructure solutions, and an economist who analyses the cost-benefit ratios of different adaptation strategies. This team will help members come out with a comprehensive, culturally sensitive adaptation strategy. The figure below illustrates a model for an integrated STEM-SSHA education in higher education in Ghana.

4.1 A Visual model of the integrated approach for HE in Ghana

This diagram in Fig. 2 represents the suggested integrated approach for STEM and SSHA in higher education in Ghana. It presents the structure of the curriculum for both STEM and SSHA. The 60% in the extreme rectangles means that students will spend 60% of their study time on their majors. The 20% middle circle is the proposed integrated courses, which are required courses for all students irrespective of their majors. Its central location shows its prominence. The topmost SSHA Elective of 20% and its counterpart bottom rectangle with STEM Elective of 20% are courses that can be taken by STEM and SSHA students, respectively. Thus, while STEM students can take 20% electives in SSHA, SSHA students can also take 20% STEM Elective courses. This design ensures equal footage given to both STEM and SSHA students for a more balanced study experience and skills development.

Fig. 2: The integrated approach to HE in Ghana



Note. Created by the author

4.2 Potential Benefits of an Integrated Approach

The proposed integrated approach has several benefits. Three of these are discussed. To begin with, it offers holistic skill development as graduates acquire comprehensive skill sets that combine technical proficiency with critical thinking and ethical leadership (Portillo-Blanco et al., 2020). The approach makes them balanced and suitable to handle complex challenges in their communities and the world at large. All graduates can perform tasks that require multiple skills, boosting their confidence in addressing issues they may be confronted with. Secondly, the integrated approach produces graduates with enhanced employability. These graduates with interdisciplinary skills have a higher chance of being more adaptable in the job market compared to others. This aligns with SDG 4.4, which underscores relevant skills for employment and entrepreneurship. The goal then shifts from focusing on only STEM students for the achievement of SDG 4.4, to ensure that all graduates have this relevant skill for sustainable development. Finally, the integrated approach ensures programs in higher education are both culturally and ethically relevant to suit the demands of the community. The incorporation of elements of humanities and STEM education enhances cultural sensitivity and ethical considerations in scientific and technological development. This supports SDG

4.7, which emphasises sustainable development and global citizenship.

4.3 Challenges in Implementing an Integrated Approach

As we identify opportunities from the integrated approach, we cannot turn a blind eye to the possible challenges that may hinder the implementation of such a proposal. An integrated approach will come with curriculum design requirements. An integrated curriculum that effectively blends STEM and SSHA elements needs careful planning and expertise. There should be a balance in depth and breadth of the curriculum, which will ensure that students acquire sufficient depth in their primary major while acquiring meaningful knowledge in other disciplines. This can be achieved through the creation of interdisciplinary curriculum development teams. Identifying core interdisciplinary courses is crucial to ensure that the concepts that will be introduced are truly essential for all students, regardless of their major. HE institutions should conduct extensive consultations with industry partners and alumni to identify key interdisciplinary skills needed for the job market. Another factor worthy of consideration is to ensure that the integrated approach will be relevant to the local context. The curriculum should be geared towards addressing Ghana's specific needs while paying attention to global relevance. Focus

should also be given to assessment techniques that can evaluate both interdisciplinary and disciplinary learning outcomes. It is recommended that integrated courses be piloted and iterated based on feedback. Government and educational institutions should be ready to invest in developing training programmes for faculty members who are major stakeholders in this. Developing an integrated curriculum that effectively blends STEM and SSHA elements requires careful planning and expertise. This then calls for professional development and support to prepare faculty to teach across disciplines. Further to this, there will be a need for institutional structures to be put in place to facilitate this integration. Existing departmental, faculty, and college infrastructures need to be reorganized to facilitate interdisciplinary teaching of this nature.

5. Global Trends and Best Practices

The proposed integrated curricula for bridging STEM and humanities fields and offering holistic education to students in higher institutions of learning in Ghana is not a new practice. Many leading global universities are implementing interdisciplinary programmes that combine elements of STEM and humanities. In line with the interdisciplinary core courses proposed in this study, Harvard University, for instance, has a required programme called General Education, and every student is required to take four courses there, irrespective of their major. These courses come from various disciplines, including both STEM and humanities. The required courses are interdisciplinary and one course each coming from Aesthetics & Culture, Ethics & Civics, Histories, Societies, Individuals, and Science & Technology in Society (<https://gened.college.harvard.edu>)

Another university is the Rochester Institute of Technology's "Liberal Arts and Sciences Exploration" programme, which requires students to take mandatory core courses in STEM under their "General Education" programme. This is like what is proposed for the integrated programme (<https://www.rit.edu/generaleducation/>)

Olin College of Engineering's Curriculum provides another context where the integrated approach is used. Olin's curriculum integrates engineering with entrepreneurship, design, and liberal arts. Although it is primarily an engineering institution, its approach embodies the spirit of STEM-SSHA integration. Source: Olin College of Engineering. (2023).

Olin's curriculum follows the liberal arts tradition that allows students to discover and try new things as they pursue their education.

"Our curriculum combines technical and engineering education with a strong emphasis on the Arts, Humanities, Social Sciences, and Entrepreneurship to prepare students for the challenges they will face as engineers in the real world." "Curriculum." <http://www.olin.edu/academics/curriculum/>

6. Conclusion

This study has explored the challenges and opportunities in bridging the gap between STEM and SSHA fields in higher education in Ghana. It has revealed a persistent imbalance in enrolment figures, with humanities and social sciences programs consistently attracting more students than STEM fields. This trend challenges the Ministry of Education's target of achieving a 60:40 STEM to Humanities ratio, raising strong concerns about the need for a more strategic approach to educational reform. It argues that the 60:40 ratio hierarchy is a colonial legacy of knowledge which sought to marginalize local knowledge traditions, oral literature, philosophy and the arts. The proposed integrated approach offers a promising solution to this challenge. It suggests an interdisciplinary approach that blends elements of both STEM and SSHA in selected core courses. The suggested model aims to produce well-rounded graduates equipped with the diverse skill sets needed to address complex societal issues. The key components of this approach include interdisciplinary core curricula, cross-disciplinary majors, flexible minor programs, and integrated research opportunities that align with global best practices observed in leading institutions worldwide.

The integrated approach offers potentially significant benefits relevant to sustainable development. These include equipping graduates with a combination of technical proficiency, critical thinking skills, and ethical leadership capabilities. This aligns closely with the United Nations' Sustainable Development Goal 4, particularly targets 4.4 and 4.7, which emphasize the importance of relevant skills for employment and sustainable development. Additionally, the suggested model ensures that programs are culturally and ethically relevant, addressing a crucial need in the Ghanaian context.

However, there are some anticipated challenges in the implementation of this model. These include (i)

the requirement of careful curriculum design, (ii) faculty training, and (iii) institutional restructuring. To overcome these obstacles, there is a need for sustained commitment from policymakers, educators, and institutions, as well as substantial investment in resources and professional development.

Below are some recommendations based on the findings:

- i. Policymakers should reconsider the current 60:40 STEM to Humanities for a more balanced one that places equal value on both fields.
- ii. The integrated approach should be piloted starting with interdisciplinary core courses. The feedback should inform the rollout of the approach.

- iii. Resources should be allocated for faculty development training to equip them to handle interdisciplinary teaching.

- iv. Institutions should establish partnerships with industry to ensure that integrated curricula align with labour market needs.

Although there are potential challenges in implementing the integrated approach in higher education in Ghana, the potential benefits cannot be underestimated. A programme that aims at producing graduates who are technically proficient, ethically grounded, and culturally aware is a transformative one that can significantly contribute towards the country's sustainable development goals. Since Ghana strives to position itself as a knowledge-based economy and a leader in African education, the adoption of this integrated approach could serve as a model for other developing nations facing similar challenges in their higher education systems.

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EXCLUSION FROM STEM: IMPLICATIONS FOR INTERDISCIPLINARY EDUCATION AND THE FUTURE OF VISUALLY IMPAIRED STUDENTS IN GHANA

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Abstract

STEM education is globally recognized as a key driver of economic and societal development, equipping learners with essential skills such as problem-solving, critical thinking, and innovation. These competencies are crucial not only for STEM but for interdisciplinary collaboration with the humanities, where complex societal issues are addressed through a holistic approach. However, in Ghanaian higher education institutions (HEIs), visually impaired students (SVI) face significant exclusion from STEM-related courses such as mathematics, information technology, and research methods. This study investigated the impact of this exclusion on the academic and professional development of students with visual impairment, particularly in interdisciplinary areas that combine STEM with the humanities. The current study pioneers in costing the cost of excluding vision-impaired students from STEM education, emphasising on impact on career and professional development. The study was grounded in the interpretivist paradigm and employed a qualitative case study approach. Thirteen (13) key informants from two higher education institutions in Ghana, including principals, heads of departments, curriculum experts, SVI, and lecturers at a college of education and university, were interviewed. The findings revealed that the exclusion of vision-impaired students from STEM courses severely limits the interdisciplinary potential of visually impaired students and restricts their academic and professional advancement. The study concludes that policy reforms and inclusive teaching practices are urgently needed to ensure equal educational opportunities for all students.

Keywords: Exclusion, vision-impaired students, STEM, higher education, humanities.

Introduction

STEM (Science, Technology, Engineering, and Mathematics) education is recognized globally as a crucial driver of innovation, economic development, and societal progress. The increasing reliance on STEM fields for problem-solving, critical thinking, and technological advancement has established it as a cornerstone for modern economies (African Union, 2015; National Science Foundation, 2020). The importance of STEM goes beyond specialized knowledge. It equips learners with essential and transferable skills such as fostering creativity, critical analysis, and collaborative innovation (Partnership for 21st Century Skills, 2019; Beers, 2011).

In the 21st century, the need for interdisciplinary approaches integrating STEM with the humanities has gained considerable attention. This interdisciplinary collaboration between STEM and the humanities is vital for addressing these multifaceted global issues. Complex societal challenges, ranging from climate change to ethical dilemmas, require scientific knowledge as well as an understanding of human behaviour, ethics, and cultural contexts (National Research Council, 2014; UNESCO, 2017; Klein, 2010).

However, despite the recognized importance of STEM, access to it remains unequal for students with disabilities. In Ghana, visually impaired students in higher education institutions (HEIs) face systemic barriers (Odame et al., 2019; Abosi, 2007) that exclude them from participating in STEM-related courses. These courses include science, mathematics, information technology, research methods and quantitative techniques. Students with visual impairment are excluded from these courses because the design is not structured as accessible to them. As a result, these students are barred from engaging with critical knowledge areas foundational to STEM and its intersection with the humanities. For example, below is an excerpt from a policy document of a prominent Ghanaian university:

Students with visual impairment shall not be offered courses in Mathematics and its cognate courses like statistics, research methods, data management, etc. Subsequently, they shall be exempted from university examinations in such courses. – a prominent Ghanaian University

Hence, this study investigates the exclusion of visually impaired students from STEM education in Ghanaian HEIs and explores the broader implications of this exclusion for their academic and professional development. It examines how the lack of access to STEM fields not only limits their opportunities within STEM but also restricts their engagement in interdisciplinary fields that combine STEM with the

humanities. This exclusion represents a significant barrier to their full participation in both academic and societal discourse, raising concerns about educational equity and the future role of visually impaired students in a knowledge-driven society.

Literature Review

Global Perspectives on Inclusive STEM Education

Integrating students with disabilities into STEM education has garnered increasing attention globally. Research highlights that inclusive education systems are essential for ensuring that all students, regardless of their physical abilities, have access to the benefits of STEM education. In many developed countries, policies have been enacted to promote accessible STEM curricula. For instance, the U.S. has pioneered assistive technologies and inclusive teaching methods that make STEM subjects more accessible to visually impaired students using tactile materials, braille coding languages, and audio-based tools (National Science Foundation, 2020). Similarly, in European nations, legislative frameworks mandate adapting teaching environments to meet the needs of all learners (European Agency for Special Needs and Inclusive Education, 2018).

Despite the global and continental emphasis on inclusive education outlined by organizations such as UNESCO (2017) and the African Union Commission (2015), there are significant gaps in implementation in developing nations like Ghana. Studies have shown that while policies may exist on paper, there is often a lack of resources, training, and institutional will to enforce these inclusive practices (Hollings, 2021; Odame et al., 2019; Abosi, 2007).

This gap disproportionately affects students with disabilities, especially those in STEM fields, where resources like specialized teaching materials are crucial for understanding complex concepts.

STEM and Humanities Integration

The interdisciplinary integration of STEM with the humanities is increasingly recognized as essential for tackling the complex societal challenges of the 21st century (Klein, 2010; Jones, 2009). Some scholars have argued that solving global issues like climate change, social inequality, and technological ethics requires a collaboration between the technical precision of STEM disciplines and the critical, human-centred perspectives provided by the humanities (Burnard et al., 2022; Beers, 2011). This integration aims to cultivate individuals who can bridge the gap between technology and society, making informed decisions considering technical feasibility and ethical implications (Partnership for 21st Century Skills, 2019).

The exclusion of visually impaired students from STEM fields does not solely limit their potential within these technical areas, this might hinder their contribution to interdisciplinary spaces where STEM and the humanities converge (Beardmore, 2023; Beardmore et al., 2022). Data from research on interdisciplinary education underscores the importance of diverse perspectives, including those of marginalised groups, in fostering innovative solutions to global challenges (Nasir, 2021; Lyall, 2015). The exclusion of students with disabilities from STEM represents a significant loss to these interdisciplinary efforts.

Challenges for Visually Impaired Students in Higher Education

The challenges faced by visually impaired students in higher education are well-documented in both global and Ghanaian contexts (Abosi, 2007; Odame et al., 2019). A study by Abosi (2007) on the state of disability education in sub-Saharan Africa highlights that visually impaired students often encounter systemic barriers, ranging from inaccessible learning materials to a lack of institutional support. In Ghana, students with visual impairments are excluded from subjects like mathematics and the sciences, primarily due to the perceived difficulty of adapting these subjects to their needs (Odame et al., 2019).

Further research indicates that many institutions lack the necessary resources such as braille textbooks, screen readers, or trained support staff to support visually impaired students in STEM subjects (Rahman, 2022; Kisanga & Kisanga, 2022; Moon et al., 2012). These have contributed to a persistent gap in the inclusion of visually impaired students, with many opting for courses perceived as more “accessible,”

such as the humanities and social sciences. While these fields offer valuable opportunities, the exclusion from STEM may restrict the range of professional and academic prospects available to these students, exacerbating educational and social inequities (Salazar, 2024; Dawson, 2019; Odame et al., 2019).

Teacher Preparedness to Teach Visually Impaired Students in STEM

Teachers are a crucial resource in mainstreaming STEM education for vision-impaired students. According to Transforming Teacher Education and Learning's [T-TEL] (2022), the National Teacher Education Curriculum Framework (NTECF) expects that teachers are trained to cater to diverse learners, including students with disabilities. However, research shows that many teachers in Ghana are ill-prepared to teach visually impaired students in STEM fields.

The NTECF highlights the importance of inclusive education but lacks specific guidelines on how STEM instructors should adapt their teaching strategies for visually impaired learners. Studies reveal that while teachers are aware of the need for inclusion, they are under-equipped to handle the specialized requirements of visually impaired students in STEM subjects (Nketsia et al., 2016). This lack of preparedness could stem from inadequate training during their teacher education programs, which often focus more on general pedagogical strategies than on specific adaptations for students with disabilities (Nketsia, 2016; Nketsia, 2011).

The lack could equally be attributed to the inexistence of professional development programmes to teach students that build teachers' capacity on the issue (Worlanyo, 2012). Moreover, many teachers lack access to assistive technologies and resources that could facilitate STEM learning for visually impaired students, such as tactile diagrams, braille versions of mathematical and scientific texts, and adaptive laboratory equipment (Shresthra, 2023). As a result, even well-meaning educators struggle to provide the necessary accommodations for visually impaired students, further contributing to their exclusion from STEM fields.

Policy Gaps and Institutional Practices in Ghana

In Ghana, while inclusive education is mandated by legislation and policies such as the Inclusive Education Policy, Persons with Disability Act, and the Education Strategic Plan (ESP), its implementation

is not felt in the higher education space, in its higher education space. A study by Odame et al. (2019) shows that Ghanaian higher education institutions (HEIs) struggle to implement inclusive policies due to resource constraints and a lack of comprehensive training for educators. Also, many HEIs are not well-resourced with the needed tools or strategies to accommodate visually impaired students in STEM fields (Acheampong, 2018), leading to de facto exclusion despite formal inclusivity policies.

These institutional struggles coupled with rigid curriculum designs are impermissible to alternative learning and assessment methods. Without structured efforts to adapt STEM courses to the needs of visually impaired students, these students are marginalised within the academic system. Research has consistently shown that inclusive curricula benefit all learners (Imaniah & Fitria, 2018), not just those with disabilities, by promoting diverse ways of thinking and problem-solving. However, the absence of such frameworks in Ghana's HEIs perpetuates a cycle of exclusion for visually impaired students in STEM fields.

Research Approach and Design

This study adopts a qualitative approach within the interpretivism paradigm (Willis, 2007). The choice of a qualitative design is driven by the need to investigate what accounts for the exclusion and its impact on the academic and professional aspirations of students with visual impairment. A case study was employed as the research design for this study. The case study method allows for a comprehensive exploration (Yin, 2018) of the systemic exclusion faced by visually impaired students within two higher education institutions (HEIs) in Ghana. This approach enables the investigation of the complex interplay between institutional practices, curricular designs, and individual experiences (Knapp, 2017).

Study Context and Key Informants

The study focused on one HEI in Ghana, selected for its significant population of students with vision impairment and researchers' knowledge of the higher education as an institution for excluding vision-impaired students from STEM. The study involved 13 participants which included five students with visual impairment, four lecturers, two heads of departments and two curriculum experts, and administrators such as principals and registrars. These participants

were sampled due to their direct involvement in, or experience with, the education of visually impaired students in the institution. These participants were purposively selected because they are information rich about the phenomenon under study (Patton, 2002). The two curriculum experts involved in designing the syllabus of STEM programmes, who play a role in enforcing policies and ensuring the inclusivity of programs.

Data Collection Methods

Semi-structured interviews and documents were used as data collection methods for the study to gather rich, qualitative data.

Semi-Structured Interviews

Semi-structured interviews were conducted with all 13 key informants. This method was chosen because it allows for flexibility in probing deeper into certain issues while ensuring that key areas related to STEM exclusion and interdisciplinary education are covered (Osborn & Grant-Smith, 2021). The interviews focused on participants' perspectives on excluding visually impaired students from STEM courses, their views on the impact of this exclusion on students' academic and professional futures, and recommendations for fostering an inclusive educational environment in STEM fields. Interview guides were developed specifically for students, lecturers, and curriculum experts to gather appropriate data from each participant (Kallio et al., 2016). The interviews' duration was set to forty-five minutes per session. The shortest duration of an interview elapsed seventeen minutes and the longest elapsed thirty minutes. This did not result from the participants' lack of information but due to their straight-on-the-dot responses.

Document Analysis

In addition to interviews, relevant institutional policy documents were analysed to garner supplementary data (Cohen et al., 2017, Cresswell, 2013). These included curriculum frameworks, accessibility policies, and institutional policy reports on the inclusion of students with disability and STEM education. The NTECF and institutional strategic plans to address issues on the inclusion of visually impaired students in STEM education were reviewed. This analysis helped identify gaps between policy intentions and actual practice within HEIs. Though it is believed that documents are windows into the realities

of an organisation, we were careful in gathering data from these documents and making meaning of them.

Data Analysis

The data collected from interviews and document analysis were analysed using thematic analysis. This approach involves identifying, analysing, and reporting themes within the data, allowing for a detailed description of the key issues around STEM exclusion and interdisciplinary education for visually impaired students (Castleberry & Nolen, 2018, Braun & Clark, 2017).

1. Coding Process:

The data were first coded manually, with emergent codes based on recurring themes from the interviews and documents. Codes were grouped into categories such as “barriers to inclusion,” “teacher preparedness,” “impact of exclusion on interdisciplinary participation,” and “policy gaps”.

2. Theme Development:

The codes were then organized into broader themes that align with the research objectives. Key themes that emerged included “Lack of accessibility in STEM curricula”, “Teachers’ insufficient preparedness to handle the needs of visually impaired students”, “The long-term impact of exclusion on career prospects and academic progression”, “Institutional policy gaps” and the “mismatch between formal policies and practical realities in HEIs”.

Ethical Considerations

Ethical approval for the study was obtained from the Humanities and Social Science Research Committee (HuSSREC) of the Kwame Nkrumah University of Science and Technology, and access was gained through appropriate channels in participating institutions of the participating HEIs. Permissions were sought through gatekeepers such as principals, heads of departments and heads of centres to get access to respondents. Informed consent was sought from all participants, who were assured of the confidentiality and anonymity of their responses (Crow et al., 2006; Miller et al., 2002). Participants were informed of their right to withdraw from the study at any point without facing any consequences. The data collected were securely stored, and only the research team had access to the recordings and transcripts (Speer & Stoke, 2014).

Findings

The findings from the interviews and document analysis reveal several critical issues related to the exclusion of visually impaired students from STEM education in Ghanaian higher education institutions. The results are presented under six main themes: no STEM learning experience in pre-tertiary education, lack of accessibility in STEM curricula, teachers’ preparedness, the impact of exclusion on interdisciplinary participation, institutional policy gaps, and the impact on further learning opportunities.

Little to No Learning Experience in Pre-Tertiary Education

In a prominent Ghanaian University, students with visual impairment are excluded from these STEM programmes and courses because they were not taught these subjects in their pre-university educational settings because of a lack of resources.

A policy document revealed that,

...The argument is that “Visually Impaired students enrolled in pre-university Educational institutions were not taught mathematics and science subjects because facilities for teaching were not available.”

A lecturer put it this way,

They lack the requisite and foundational learning expertise for the STEM courses from their senior high schools as they were exempted from all STEM-related subjects. Hence, students cannot be assigned courses they have no requisite knowledge to read.

Lack of Accessibility in STEM Curricula

A significant barrier to the inclusion of visually impaired students in STEM courses is the inaccessibility of the curricula. The study found that:

STEM materials are primarily visual based, including graphs, diagrams, and mathematical notations, which are not adapted for visually impaired learners. Interviewed students reported that the absence of braille versions of these materials, or alternative teaching methods, left them at a disadvantage compared to their sighted peers.

A student with visual impairment shared that,

They lack reference materials in STEM courses and the same with courses in the non-STEM courses they are registered to read. While their sighted peers have books to read from the library or purchase from the bookshops, they have no reading material in braille or any other accessible format.

Another student also iterated,

I initially joined the mathematics classes because I loved Mathematics and was glad to learn. ... I slugged behind in the lessons because the concepts were very complex and required visual aids to comprehend.

This inaccessibility meant that many visually impaired students opted out of STEM courses altogether, perceiving them as insurmountable obstacles due to the lack of accommodations.

Teachers' Preparedness to Teach STEM Courses to Visually Impaired Students

Findings from interviews with lecturers, curriculum experts and students revealed that many STEM teachers are underprepared to teach visually impaired students. Key findings include:

Lack of specialized training: Although the National Teacher Education Curriculum Framework (NTECF) emphasizes inclusive education, teachers reported receiving no training on how to adapt STEM lessons for visually impaired students. Most of their training focused on general pedagogical strategies, with very limited attention given to the unique needs of students with disabilities in STEM contexts.

A lecturer shared that,

As a teacher, I don't think I have the experience to teach SVI mathematics which I have taught for 9 years, because, I have not received any special training to do so.

A curriculum expert reviewed that,

The National Teacher Education Curriculum Framework is weak and closing this gap, in teacher training universities that include Special Education courses in their programmes only introduces students to the field but gives them no relevant training on special cases and how to modify instruction to accommodate vision-impaired students.

Dependence on traditional teaching methods: Students indicated that they primarily relied on traditional, sight-dependent teaching methods such as using the blackboard, projecting slides, or distributing printed handouts. They acknowledged that without the proper tools (such as braille textbooks or screen readers), it was difficult to provide equal learning opportunities to visually impaired students.

A student with visual impairment shared,

Our teachers only use the board and chalk and slides projection teaching approach, which is solely visual. This teaching method keeps us behind from grabbing certain concepts.

Another student indicated,

Our teachers, I believe are abled teachers who can instruct and teach STEM courses to our understanding, but for us to appreciate what is being taught, we must get access to some tactile materials or artefacts.

Need for assistive technologies: Several lecturers mentioned that the absence of assistive technologies in their institutions hampered their ability to include visually impaired students in their courses. While some were aware of tools like screen readers or tactile learning aids, these were either unavailable or stated they lacked the skills to effectively use them even if they were available.

A lecturer supported this by saying,

...Without intensive investment in braille, screen readers, closed circuit television and embossers, we as teachers cannot provide the necessary learning experience in STEM for the students.

Other responses were like,

...If our institutions could provide the needed technologies and equipment, we would be a step further to closing the gap between the vision impaired and their sighted counterparts in STEM.

Our vision-impaired resource centre is empty regarding assistive technologies which are needed to support the students [visually impaired] and put them on par with their sighted peers.

Institutional Policy Gaps and Mismatch between Policy and Practice

Document analysis and interviews with institutional heads revealed a disconnect between policy frameworks and actual practice in Ghanaian higher education institutions. Key issues include:

Lack of institutional support: Although national policies like the Education Strategic Plan (ESP) mandate inclusive education, many HEIs do not have the infrastructure or resources to accommodate visually impaired students in STEM courses. Lecturers acknowledged that while inclusion was a stated priority, the funding necessary to implement inclusive STEM programs such as purchasing assistive technologies or training staff was lacking.

Curriculum inflexibility: Excerpts from interviews with curriculum experts highlighted that STEM curricula are not designed with flexibility in mind. The rigid structure of these courses, coupled with the absence of alternative teaching methods, meant that visually impaired students were often sidelined. Efforts to adapt STEM lessons were limited to a few initiatives, mostly driven by individual instructors rather than institutional policy.

One curriculum expert noted,

We talk about inclusion, but the curriculum does not reflect this. There is no space or provision for alternatives that cater to visually impaired students, especially in STEM fields.

Impact of Exclusion on Interdisciplinary Participation

The exclusion of visually impaired students from STEM courses not only affected their immediate academic progression in STEM but also had broader implications for their engagement in interdisciplinary education. The findings showed:

Loss of interdisciplinary opportunities: Many students with visual impairments expressed a desire to engage in interdisciplinary fields that merge STEM with the humanities, such as digital humanities or ethical technology studies. However, their exclusion from foundational STEM courses (e.g., mathematics, statistics, research methods and information technology) prevented them from participating in these interdisciplinary programs, limiting their overall academic growth.

A student said,

Even with the social studies and RME, we are marginalised at some instances. In topics that are STEM-centred, we are not assessed on these areas like our sighted peers are. Mostly the teacher would say “You will not be tested on these areas because you won’t understand them”

Professional consequences: Students also felt that their exclusion from STEM would narrow their career prospects.

One student noted,

The exclusion feels like a dead end. Not only do I miss out on STEM fields, but I also lose opportunities in areas like data analysis, research methods, and even economics.

Another student shared that,

I aspired to be an electrical engineer before the disability stroke me in 2014, ... looking at how it is going with my academics and the current state of inclusive education I think I just have to give up the dream.

This finding highlights the cascading effect of exclusion, where missing out on STEM education restricts their ability to compete in both STEM and interdisciplinary job markets.

Impact on Further Learning Opportunities

One of the most significant findings of this study is the long-term impact of exclusion on the further learning opportunities of visually impaired students. The study found that:

Limited access to higher-level STEM courses: Students who were excluded from foundational STEM courses (such as introductory mathematics, physics, or information technology) are yet to face significant difficulties in advancing to higher-level courses. This hindered their ability to pursue specialized STEM programs at the graduate level or take part in interdisciplinary fields that require STEM competency, such as economics, data science, or environmental studies.

Barriers to postgraduate education: Many advanced degree programs, particularly those in research-intensive fields, require a strong foundation in STEM

subjects such as quantitative techniques and data analysis. The lack of this foundation, caused by their exclusion, effectively closes off opportunities for further education and professional growth in these areas.

A lecturer shared that,

I am concerned about how they will qualify for graduate studies without knowledge in data analysis and research methods, as these students are excluded from the courses at this level. As an admission officer, this exclusion will surely further limit their education opportunities and not only in STEM.

Restricted access to professional development: Beyond formal education, exclusion from STEM also limits access to professional development opportunities. Students noted that many careers in today's knowledge economy require ongoing learning in areas like quantitative analysis, research methods, and information technology. Without access to these learning pathways, visually impaired students are at a significant disadvantage when competing for jobs that require STEM-related skills.

A student said,

As I am learning to become a teacher, I wonder if I would be considered for a leadership role such as a headteacher among my sighted colleagues in the future. With little to no knowledge about budgeting which are essential skills for school management

Another student put it this way,

... No mathematics, science and ICT knowledge, where lies my fate in this ever-changing world.

In summary, exclusion from STEM education has a compounding effect on the learning opportunities available to visually impaired students. It not only limits their immediate academic progress but also creates barriers to further education and professional advancement, ultimately marginalizing them in the job market and broader societal participation.

Discussion

The exclusion of visually impaired students from STEM education, as revealed in this study, has far-

reaching consequences not only for their individual academic and professional trajectories but also for the broader efforts to promote inclusive education in Ghana. The findings underscore the need for comprehensive reforms that address the systemic barriers preventing visually impaired students from fully participating in STEM education. This section discusses these findings with existing literature and policy frameworks, emphasizing the importance of teacher preparedness, curriculum flexibility, and the provision of necessary resources and assistive technologies.

Barriers to Inclusive STEM Education

The inaccessibility of STEM curricula in Ghanaian HEIs reflects a broader pattern of exclusion that has been documented globally. Previous studies, such as those by Kamei et al., (2020), Abosi (2007) and Odame et al. (2019), point to the persistent lack of resources and institutional support for students with disabilities. This study confirms those findings, showing that visually impaired students are systematically excluded from STEM fields due to the visual nature of these subjects and the absence of alternative teaching methods.

While some countries such as Sweden, Norway, Finland and the United States of America have made strides in providing adaptive technologies and accessible teaching materials for students with disabilities (Goodill, 2017; Hayes & Bulat, 2017; Halvorsen, 2010), Ghana's higher education system has yet to adequately address these needs, particularly in STEM education. The lack of braille textbooks, tactile learning tools, and assistive technologies places visually impaired students at a significant disadvantage, contributing to their exclusion from these critical fields.

Teacher Preparedness and the Role of the Curriculum Framework

One of the key findings of this study is the lack of preparedness among teachers to effectively teach visually impaired students in STEM fields. Although the National Teacher Education Curriculum Framework (NTECF) emphasizes inclusive education, it falls short in equipping teachers with the specific skills and knowledge required to adapt STEM lessons for visually impaired learners. This finding aligns with the works Naami and Mort (2023) and Mumba and Chitiyo (2008), who argue that teacher training programs often focus on general pedagogical

strategies without providing the necessary training for teaching students with disabilities in specialized subjects such as mathematics and science.

The reliance on traditional teaching methods, which are predominantly visual, exacerbates the exclusion of visually impaired students from STEM fields (Moon, 2012). This highlights the urgent need for reforms in teacher education programs, particularly in inclusive STEM education. Teachers must be provided with training on how to use assistive technologies and alternative teaching methods to accommodate students with visual impairment. Without this training, the barriers to inclusion will persist, and visually impaired students will continue to be marginalised in STEM courses.

Implications for Further Learning and Professional Development

The exclusion of visually impaired students from STEM courses has significant implications for their further learning opportunities (Hayes & Proulx, 2024). As the results show, students who are unable to access foundational STEM courses are effectively barred from pursuing advanced degrees and professional development opportunities in STEM-related fields. This finding is consistent with research by Webster (2022), who note that students with disabilities face a compounded disadvantage when they are excluded from foundational subjects, as this exclusion limits their ability to engage in further education and professional growth.

The inability to pursue postgraduate studies in STEM or interdisciplinary fields that combine STEM and the humanities not only limits the academic and career prospects of visually impaired students but also has broader societal implications. As STEM fields increasingly dominate the global job market, the exclusion of visually impaired students from these areas widens the gap in employment opportunities and perpetuates socio-economic inequalities. This calls for urgent policy reforms that ensure visually impaired students have access to the same learning opportunities as their sighted peers, particularly in fields that are critical to the future job market.

Institutional Gaps and Policy Mismatches

The disconnect between policy and practice in Ghanaian HEIs further worsens the exclusion of visually impaired students from STEM education. While national policies such as the Persons with

Disability Act [Act 715] (2006), Inclusive Education Policy (2015) and the Education Strategic Plan [ESP] (2018) and the T-TEL's (2022) NTECF advocate for inclusive education, the reality is that many institutions lack the resources and support structures needed to implement these policies. This study reveals that the absence of adaptive technologies, insufficient teacher training, and rigid curricula contribute to the ongoing marginalization of visually impaired students in STEM courses.

These findings highlight the need for institutions to move beyond policy rhetoric and take concrete steps toward creating an inclusive learning environment. This includes investing in the necessary resources, such as assistive technologies and accessible learning materials, as well as providing continuous professional development for teachers. Without these changes, the exclusion of visually impaired students from STEM education will continue to undermine the goals of inclusive education in Ghana.

Recommendations for Policy and Practice

Based on the findings of this study, several key recommendations emerge for addressing the exclusion of visually impaired students from STEM education:

- 1. Teacher Training and Professional Development:* Teacher education programs must incorporate specific training on how to teach visually impaired students in STEM subjects. This includes equipping teachers with the skills to use assistive technologies and alternative teaching methods that make STEM subjects accessible to all learners.
- 2. Investment in Assistive Technologies:* HEIs must invest in the necessary technologies, such as braille displays, screen readers, and tactile learning aids, to support visually impaired students in STEM courses. These tools are essential for creating an accessible learning environment.
- 3. Curriculum Reform:* STEM curricula must be made more flexible to accommodate diverse learning needs. This could involve designing alternative pathways within STEM subjects that are less reliant on visual materials and more accessible to visually impaired students.
- 4. Institutional Support and Policy Implementation:* Institutions must ensure that policies advocating for

inclusive education are implemented in practice. This requires adequate funding, resources, and accountability mechanisms to ensure that visually impaired students are not left behind in STEM education.

Conclusion

This study highlights the systemic exclusion of visually impaired students from STEM education in Ghanaian higher education institutions and its broader implications for their academic and professional futures. The findings reveal that inaccessible curricula, lack of teacher preparedness, and institutional policy gaps significantly limit the ability of visually impaired students to engage in STEM courses. This exclusion not only hinders their immediate academic success but also restricts their further learning opportunities, particularly in postgraduate education and interdisciplinary fields that combine STEM and the humanities.

The exclusion of visually impaired students from STEM fields also has long-term social and economic

consequences, as these fields increasingly dominate the global job market. By denying visually impaired students access to foundational STEM education, higher education institutions perpetuate educational inequities and limit the potential contributions of these students to society. The study underscores the urgent need for inclusive reforms in STEM education, including targeted teacher training, investment in assistive technologies, and curriculum modifications to ensure that visually impaired students are not left behind.

Addressing the exclusion of visually impaired students from STEM is not only a matter of educational equity but also a strategic imperative for fostering a more inclusive and innovative society. Higher education institutions in Ghana must take concrete steps to remove the barriers faced by visually impaired students and provide them with the tools and opportunities they need to succeed in both STEM and interdisciplinary fields. Only by ensuring equal access to education for all students can Ghana fully realize its vision of inclusive development in the 21st century.

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ENHANCING EMPLOYABILITY: ASSESSING DIGITAL SKILLS DEMAND IN AFRICAN TVET PROGRAMS: A JOB MARKET ANALYSIS

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Abstract

This study investigates the evolving landscape of digital skills demand within African Technical and Vocational Education and Training (TVET) programs, emphasizing their critical purpose in strategizing the future of higher education in Africa. Through a comprehensive job market analysis, this research identifies in-demand digital skills and competencies necessary for employability in the contemporary workforce. The findings aim to inform TVET institutions and policymakers on strategies to align curricula with industry needs, thereby enhancing graduate preparedness for the digital economy and ensuring the relevance of higher education in an increasingly digital world.

Keywords: Employability, digital skills, TVET, Job market, African.

1.0 Introduction

The digital revolution has profoundly transformed African economies, amplifying the demand for a skilled workforce equipped with essential digital competencies. As African economies increasingly pivot toward digitalization, higher education institutions must adapt to prepare a workforce equipped with essential digital skills. TVET programs, as critical components of higher education, serves an important purpose in preparing graduates for these dynamic job markets. However, aligning TVET curricula with the in-demand digital skills is crucial for enhancing graduate employability. This study focuses on a job market analysis to pinpoint the specific digital skills required by employers across various sectors of Africa.

2.0 Literature Review

2.1 Introduction to Digital Transformation in TVET

Digital transformation in Technical and Vocational Education and Training (TVET) is increasingly recognized as essential for preparing students for a technology-driven workforce. This transformation is not only essential for current workforce demands but also for preparing students for future job markets that will increasingly rely on advanced digital competencies. The integration of digital technologies not only enhances educational outcomes but also aligns TVET programs with modern industry demands (UNESCO, 2022; Almalki, 2020). This transformation involves reshaping the educational framework to equip students with the skills necessary for a rapidly evolving job market. Recent studies indicate that incorporating innovative teaching methods, such as flipped learning alongside ICT, significantly improves academic achievement and student engagement (Seitan et al., 2020; Zhang et al., 2021).

2.2 The Technology Acceptance Model in TVET

The Technology Acceptance Model (TAM) makes available a high-end framework for understanding how educators and students accept new technologies in educational contexts. Research indicates that educators in technical and vocational education and training (TVET) are more likely to adopt new technology if they find it simple and straightforward. (Edeh et al., 2021; Naveed et al., 2022). Fostering positive attitudes toward technology is crucial for integrating these tools into teaching practices, and enhancing educators' digital competence is essential for successful adoption (Antonietti et al., 2022; Khan et al., 2023).

2.3 Gender and Experience in Technology Adoption

Gender and teaching experience can impact the technology adoption among educators. Studies reveal that male educators in general are more likely to adapt to technology than their female counterparts, often due to differences in confidence and exposure (Ali et al., 2021). Additionally, teaching experience has been positively correlated with attitudes toward technology integration, suggesting that targeted training can help mitigate these disparities (Sadiq et al., 2023).

2.4 ICT Skills and Employability

The demand for Information and Communication Technology (ICT) skills among TVET graduates is well-documented and increasingly viewed as a prerequisite for employment across various sectors (Houghton et al., 2021). Integrating comprehensive ICT training into TVET curricula is essential for enabling graduates to meet evolving job market demands effectively (Mansour et al., 2020). Furthermore, the role of soft skills, alongside technical competencies, has gained prominence, particularly in enhancing employability during the Covid-19 pandemic (Amzil, 2023).

2.5 Barriers to Effective ICT Integration

Despite the recognized benefits of ICT in TVET, several barriers hinder its effective integration. Common challenges include inadequate resources, insufficient training for educators, and cultural attitudes toward technology (Ertmer et al., 2020; Almalki, 2020). Addressing these barriers is crucial for maximizing the potential of ICT in educational settings, particularly in TVET, where innovative approaches like flipped learning can be beneficial (Seitan et al., 2020).

3.0 Methodology

This study investigates the digital skills required in the job market relevant to Africans through a structured methodology encompassing data collection, validation, stakeholder engagement, skills extraction, and comprehensive data analysis. This methodology not only assesses current job market trends but also serves as a foundational approach for developing future-ready curricula in TVET.

3.1 Data Collection

Job Posting Data Extraction

- **Source:** Job postings were exclusively collected from LinkedIn, a prominent professional networking platform. The focus was on jobs available not only in Africa but also globally, specifically targeting opportunities eligible for African candidates. This includes full-time, part-time, and remote positions across various industries such as manufacturing, IT, marketing, and healthcare.
- **Duration:** A six-month data collection period in 2024 was implemented to ensure a comprehensive and representative sample of job opportunities.
- **Data Points:** A total of 1,000 job postings were analyzed. Relevant information extracted from each job posting included:
 - Job title
 - Company
 - Location (including global postings eligible for Africans)
 - Required skills
 - Job descriptions

3.2 Data Validation

Cross-Referencing: To validate the reliability of data being collected, company names had to be verified through their official websites. The application processes for these job postings were also reviewed to confirm their legitimacy. Skills listed in the job descriptions were cross-referenced with the companies' profiles, ensuring alignment with industry requirements. Additionally, LinkedIn's feature displaying connections within a user's network working at specific companies provided an extra layer of validation.

Research Collaboration: Data collection was organized and managed by MTG IT Center, a research organization tasked with systematically compiling the information.

3.3 Stakeholder Engagement

Taxonomy Development: A taxonomy of digital skills was developed based on recurring themes identified in job descriptions across various postings. Data was also extracted from the websites of technical and vocational education institutions in Africa to capture the skills deemed important by educational stakeholders. This approach ensured that the skills identified in the job market are relevant to current educational offerings and aligned with industry needs.

3.4 Digital Skills Extraction

- **Systematic Review of Job Descriptions:** Each job description was meticulously reviewed to identify key digital skills and competencies demanded by employers.
- **Skill Categorization:** Extracted skills were categorized into broader groups to facilitate analysis. The categories included:
 - Data analysis
 - Programming
 - Digital marketing
 - Cybersecurity
 - Cloud computing
 - Artificial intelligence

Statistical methods were employed to analyze the frequency and distribution of digital skills across the job postings. This analysis aimed to identify trends and patterns in skill demands within the African job market, without incorporating qualitative analysis.

4.0 Data Analysis Technique

4.1 Frequency Analysis: Digital Literacy as a Prerequisite

The analysis of job postings reveals the overwhelming prevalence of basic digital literacy skills as a key requirement across various roles and industries. As shown in Figure 6, nearly 900 job postings explicitly require basic digital literacy skills, while a significantly smaller number do not. This underscores the importance of these foundational competencies. Figure 7 further supports this finding, indicating that job availability is skewed towards positions requiring

basic digital literacy, with almost 1,000 jobs listed as needing such skills. Additionally, Figure 8 confirms that over 400 unique job titles demand basic digital literacy, highlighting the fundamental nature of these skills across industries. The frequency analysis

indicates that employers prioritize basic digital literacy, with over 95% of job postings requiring these skills, as illustrated in the pie chart in Figure 9. This reflects the baseline competency expected in the modern workforce.

Figure 6: Distribution of Job Postings Requiring Basic Digital Literacy Skills

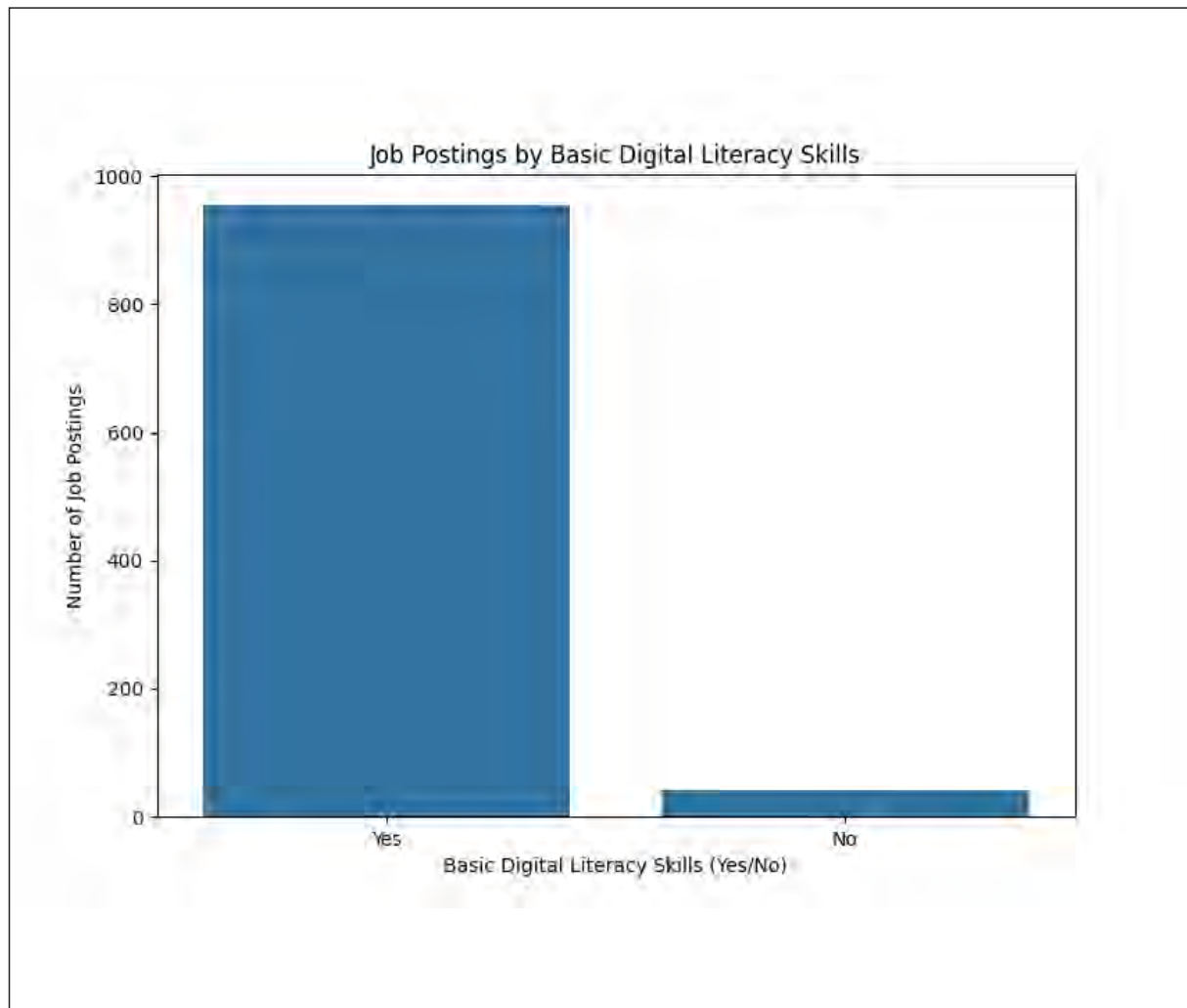


Figure 7: Job Availability Skewed Towards Digital Literacy Requirements

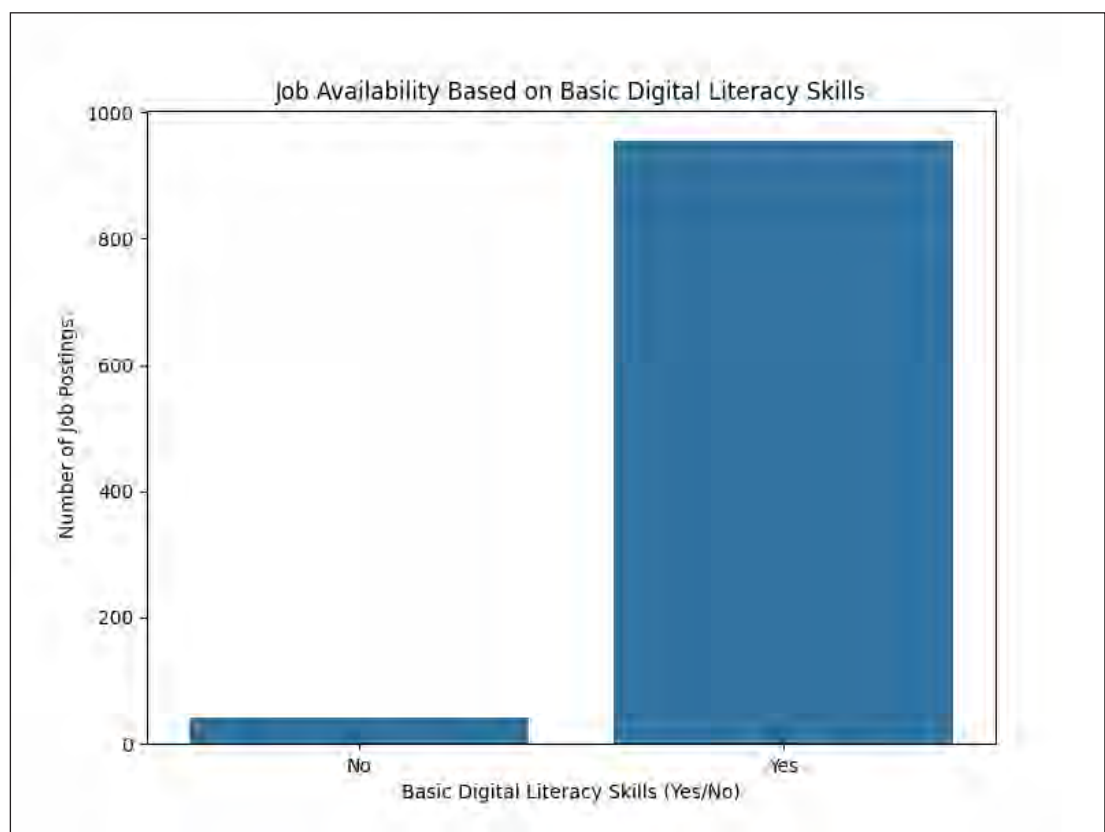
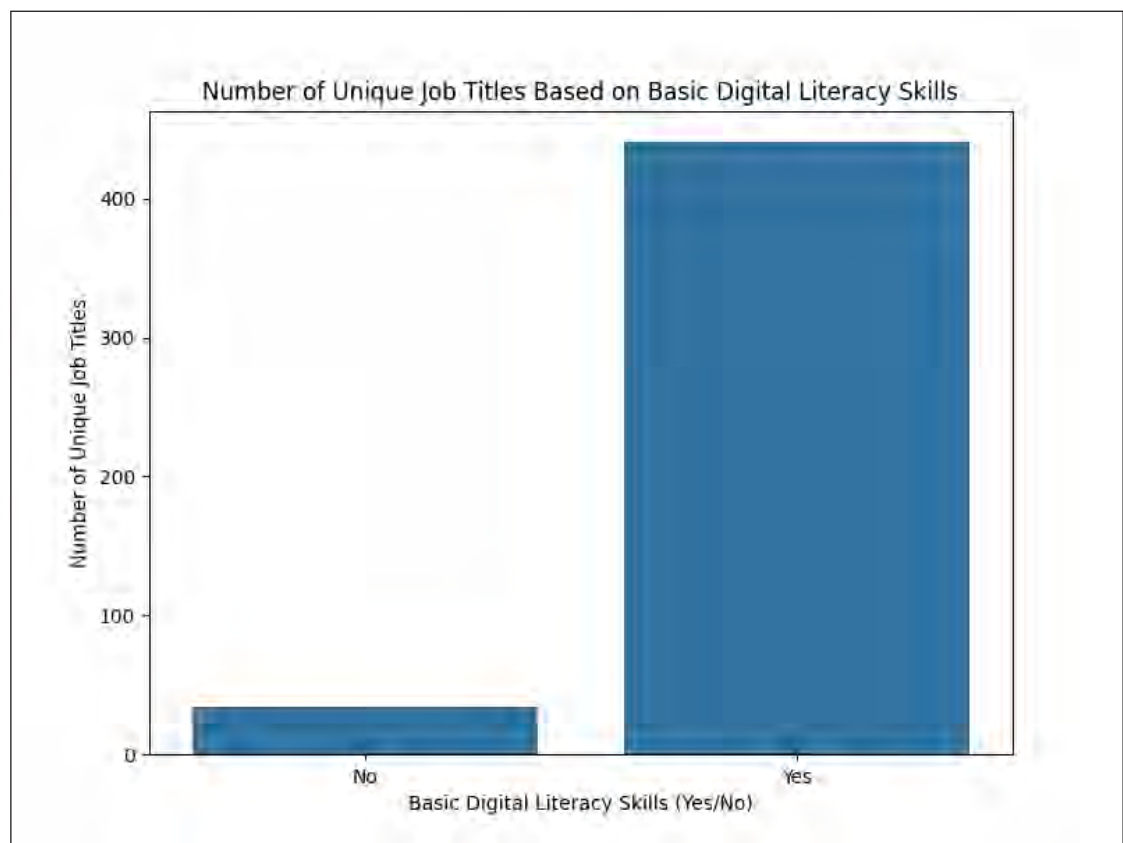


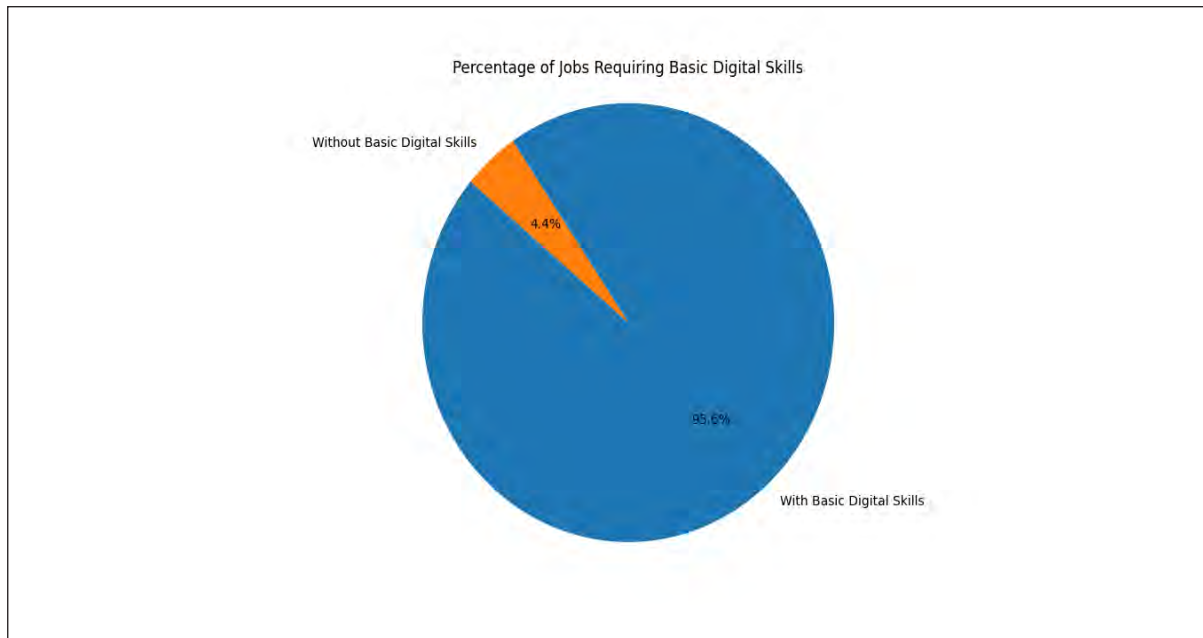
Figure 8: Unique Job Titles Requiring Basic Digital Literacy Skills



4.2 Number of Unique Job Titles Based on Basic Digital Literacy Skills

As evidenced in Figure 8, the amount of unique job titles that demands basic digital literacy skills exceeds 400, compared to a very limited number that do not. This further reinforces the notion that these foundational competencies are prerequisites for a wide array of job roles and responsibilities.

Figure 9: Unique Job Titles Requiring Basic Digital Literacy Skills



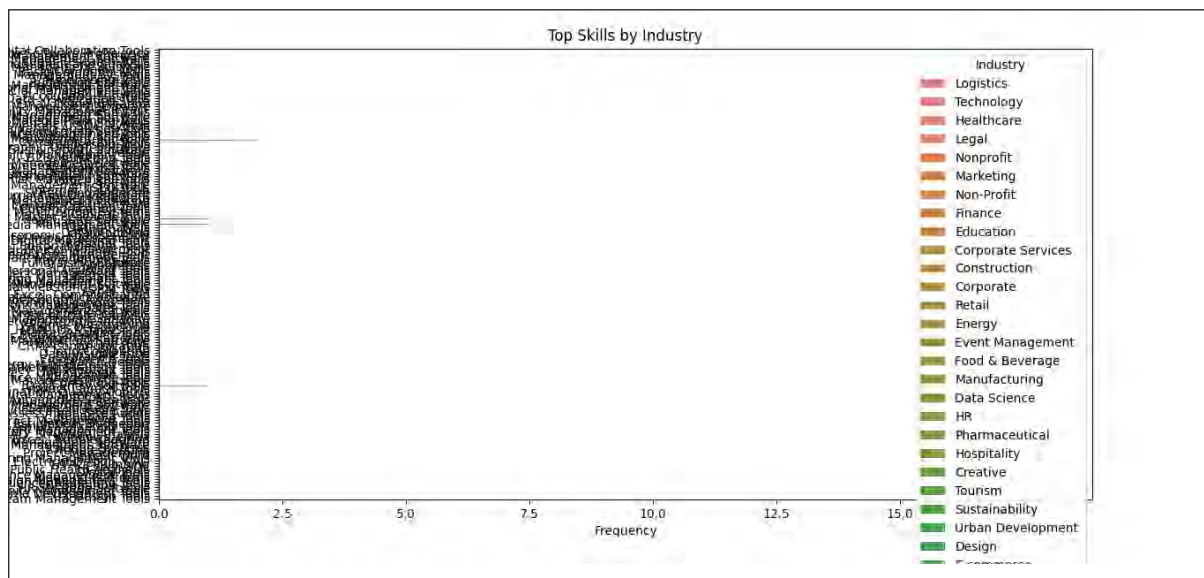
4.3 Skill Clustering: Tailoring Competencies to Industry Needs

To gain a deeper understanding of digital skill requirements, the analysis clustered the skills based on their relevance to specific industries and job roles. As shown in Figure 10, administrative roles demand basic digital literacy, with essential skills such as proficiency in office software and email communication. Technical roles require foundational digital literacy as a stepping stone for more specialized skills like basic coding, database management, and familiarity with cloud services. Service and retail roles increasingly require basic digital skills, including operating point-of-sale systems and managing digital inventories, along with familiarity with mobile apps for customer interaction. This clustering approach provides targeted insights into the unique digital competencies necessary for success in various fields, helping job seekers align their skill development with industry expectations.

4.4 Trend Analysis: Evolving Demands for Digital Competencies

The analysis of current digital skill demands, in comparison with existing literature, reveals several key trends. Specifically, the analysis indicates a shift toward more complex digital competencies, which emphasizes the need for TVET programs to evolve continually and prepare graduates for future roles in a digital economy. First, basic digital literacy skills have transitioned from being an additional asset to a fundamental requirement across job roles, from entry-level to specialized positions. Second, while basic digital literacy remains critical, the analysis indicates a shift towards more complex digital competencies such as data analytics, digital marketing, and cloud computing. Third, the COVID-19 pandemic has accelerated the transition to a digital economy, increasing the demand for digital literacy, with employers now expecting candidates to possess at least a basic understanding of digital tools and platforms. Finally, as shown in Figure 11, the top 10 most in-demand digital skills in the Technical and Vocational Education and Training (TVET) sector include digital literacy, communication, project management, negotiation, and strategic planning, emphasizing the diverse range of digital competencies sought by employers.

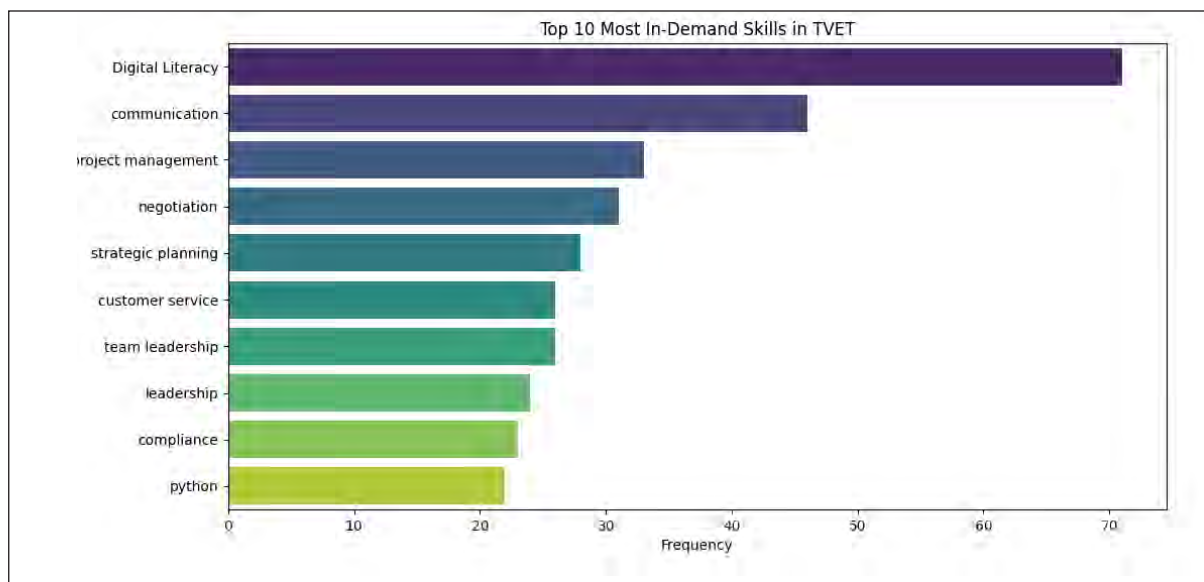
Figure 10: Clustering of Digital Skills by Industry



4.5 Number of Skills by Industry

The diagram in Figure 10 provides insights into the clustering of digital skills by industry. This chart illustrates the prominence of digital skills in sectors such as technology, data science, and design, offering additional context regarding the unique demands for digital competencies across different fields.

Figure 11: Percentage of Job Postings Requiring Basic Digital Literacy



4.6 Number of Skills Per Cluster

The final diagram, Figure 11, showcases the clustering of digital skills based on their relevance to specific job roles or skill groups. This information complements the industry-focused skill clustering and provides a more comprehensive understanding of the digital skill landscape.

The insights gained from this investigation can help job seekers and workforce development initiatives better align their skill development with the evolving demands of employers in the digital age.

5. Limitations

This study recognizes the following limitations that may impact the findings:

- **Exclusion of Non-English Job Descriptions:** The analysis focused solely on English job postings, which may limit the scope and representativeness of the findings. Incorporating job postings in other widely used languages in Africa, such as French, Arabic, or local languages, could provide a more holistic understanding of the digital skills landscape.
- **Lack of Longitudinal Data:** The absence of longitudinal data restricts the ability to analyze trends over time. This limitation constrains the understanding of how digital skill requirements may have evolved, making it difficult to capture the dynamic nature of the job market

6. Directions for Future Research

To expand on this study's results, future research could:

- **Inclusion of Non-English Job Postings:** Expanding the scope to include non-English job descriptions would enhance the comprehensiveness of the study. This approach would provide a deeper understanding of the digital skills in demand across various regions and industries within Africa.
- **Longitudinal Studies:** Conducting longitudinal research to track changes in digital skill requirements over time is essential. This would enable researchers to identify emerging trends and anticipate future skill needs, guiding the development of TVET curricula that remain relevant and responsive to the evolving job market.
- **Impact of Educational Programs:** Investigating the effectiveness of specific educational programs in enhancing employability, particularly regarding digital skills training, would provide valuable insights. Evaluating various TVET initiatives would inform targeted interventions and policy decisions.
- **Regional Variations:** Exploring regional or country-specific variations in digital skill demands within Africa could uncover unique challenges and opportunities for TVET institutions in different contexts.
- **Alignment of Skills:** Assessing the alignment between digital skills taught in TVET programs and those required by employers could identify gaps or misalignments that need to be addressed to enhance graduate employability.
- **Entrepreneurship and Self-Employment:** Examining the role of digital skills in fostering entrepreneurship and self-employment among TVET graduates could reveal new avenues for job creation and economic development in the digital economy.

7. Reporting and Recommendations

The findings from the data analysis will be synthesized to develop a comprehensive report on the digital skill landscape relevant to Africans. Recommendations will emphasize the development of basic digital literacy skills alongside industry-specific competencies. TVET institutions should prioritize the incorporation of emerging digital skills into their curricula, focusing on areas such as data analytics, AI, and digital marketing to ensure graduates are equipped for future job demands. This report will include:

Prioritization of Skills: Recommendations will emphasize the development of basic digital literacy skills alongside industry-specific competencies. This dual focus aims to enhance employability and support economic growth.

Importance of Digital Literacy: The report will highlight the universal relevance of digital literacy skills, underscoring their role in enhancing employability, adaptability, and collaboration. Additionally, it will address the significance of these skills in data-driven decision-making within various sectors.

8. Tools and Software

The analysis was conducted using Python, with the following relevant libraries employed for various tasks:

- pandas: For data manipulation and analysis.
- numpy: For numerical computations and handling arrays.
- scikit-learn: For data preprocessing, analysis, and visualization.

These tools facilitated a robust and efficient approach to analyzing the digital skills demand in the job market.

9. Conclusion

In conclusion, this study highlights the critical importance of aligning Technical and Vocational Education and Training (TVET) programs with the evolving demands of the digital economy in Africa. By identifying in-demand digital skills and competencies, the research underscores the need for TVET institutions to adapt their curricula to enhance the employability of graduates. As digital literacy shifts from a supplementary skill to a fundamental requirement across various job roles, it is imperative for educational stakeholders to prioritize the integration of both technical and soft skills in training programs. Addressing the barriers to effective ICT integration and fostering an environment conducive to technology adoption will be crucial in preparing a workforce ready for the challenges of a digital future. Ultimately, the insights gained from this analysis can guide policymakers and educators in shaping a responsive and relevant educational framework that meets the needs of both students and employers in the rapidly changing job market.

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PARALLEL SESSIONS 3

THE FUTURE OF UNIVERSITIES IN AFRICA

Date & Time: 29/11/24 11 am-1:00 pm

Session Chair: Dr. Fatmata Taqi, Fourah Bay College, University of Sierra Leone

Speakers: Adda Goudougou Marie Aimée; Abdul-Gafar Tobi Oshodi; Michael O. Faborode; and Eugenia A. B. Anderson

There were four (4) presentations in this session.

The first presentation by Abdul-Gafar Oshodi explored China's growing footprints in African higher education, with a focus on Ghanaian and Nigerian universities, as a specific illustration of China's growing influence in Africa. The presenter mentioned funding of courses, establishment of student clubs, exchange programmes, establishment of Confucius Institutes, equipping of labs with Chinese technology, to building of entire universities to support his observations. The presentation teased out two possible futures from the current situation- futures discussed as the statist and organic university imaginaries, and how African universities can respond, to bring forth a co-developed engagement and better futures and impacts for the universities and the communities in which they are located.

The second presentation Marie Aimee Goudougou explored the current trends, challenges, and potential future directions for higher education in Africa, with a particular focus on the role of innovation and policy in shaping evolution. The key argument of the presentation was that there is an increasing adoption of digital learning technologies, driven by the need for accessible and flexible educational opportunities. The presenter concluded that the future of higher education in Africa largely depends on the continent's capacity to leverage technology and foster innovation while addressing systemic issues.

The third presentation by Michael Faborode was on holistic perspectives on the progress and subsisting challenges of higher education in Africa and offered pragmatic suggestions on what can be done by all vested interests, appropriate authorities and stakeholders. The presenter specifically cited the Carnegie Corporation of New York from 2001-2010, Africa Centers of Excellence (ACEs), and the progress of the Association of African Universities (AAU). The Nigerian University Education Blueprint 2019-2023 was offered as template for other African nations to adopt.

The fourth presentation by Eugenia Anderson emphasized that higher education institutions do not just provide the human resources needed for development but serve as fertile grounds through which critical ideas are fostered. Focusing on Ghanaian student activism, the presenter argued that even though student political activism appears to have dwindled in the 21st Century, students' critical voice in university administration and leadership is still visible.

Full papers from the parallel session three presentations follow subsequently.

LOCATING CHINA IN THE FUTURE OF THE AFRICAN UNIVERSITY: NOTES FROM GHANA AND NIGERIA

Abdul-Gafar Tobi Oshodi
Lagos State University

Abstract

China is the largest trading partner with Africa and currently hosts the largest number of African students abroad after France – and this relationship is increasingly manifesting on the campuses of many African universities. Promises during the 2024 Forum on China and Africa Cooperation (FOCAC) in Beijing appears to double down on China's aspiration to expand its educational footprints in many parts of the continent. Given this phenomenon, the African University offers an important lens to deepen our understanding of Africa's relationship with China. From funding courses, establishing student clubs, exchange programmes, launching Confucius Institutes, equipping labs with Chinese technology, to building entire universities, Chinese growing footprints in Ghanaian and Nigerian universities are not in doubt. This paper will shed light on the evolution and manifestations of China on the Ghanaian and Nigerian university campuses. It will shed light on how the universities are responding. Most importantly, the paper will tease out two possible futures from the current situation; futures discussed as the statist and organic university imaginaries. This paper is based on research conducted between 2018 and 2024 in Tanzania, Ghana and Nigeria; and includes interviews with students and staff and management in Ghanaian and Nigerian universities.

Keywords: University, future, partnership, Africa, China, Ghana.

Introduction: A dragon's embrace

Africa's share of global trade is about three percent (World Bank, 2022), and China has been one of its top trading partners. China surpassed the United States as Africa's largest trading partner in 2009 (Usman, 2021), and it has remained in that position for the past 15 years. Not only in trade, but China is also a leading source of development finance in Africa. Chinese loans to Africa galloped from less than \$1 billion in 2000 to \$170 billion in 2022 with a total of 1243 loans by 39 Chinese lenders going to 49 African governments and regional institutions, equalling about 64 percent of the World Bank's \$264.15 billion sovereign loans over the same period (Moses, Jyhjong, Engel, & Bien-Aimé, 2023). In addition, Chinese companies are providing infrastructure across many countries on the continent, ranging from roads, bridges, railways, telecommunications, economic zones, seaports to airports among others. China is considered "the largest country-to-country lender in the world," and "largest supplier of infrastructural finance and second largest source of foreign direct investments (FDI) to Africa" (Hong, Lawal, & Sakariyahu, 2024). As will be highlighted in this paper, its footprints are also visible in the educational sector, especially on universities campuses. This will be illustrated with the Ghanaian and Nigerian example.

During the September 2024 triennial Forum on China and Africa Cooperation (FOCAC), the apex gathering of African and Chinese leaders, China in the event held in Beijing doubled down on her aspirations to expand its educational footprints in Africa. The country announced the "training of 40,000 teachers over the next three years, the China-Africa Technical and Vocational Education and Training Cooperation Programme and Consortium, and the Sino-Africa Science and Technology Backyard programme" (Wang & Manyukwe, 2024). This promise follows earlier Chinese interventions (King, 2018). On the sideline of the 24th FOCAC, nonetheless, a high-level meeting on higher education was also being held in China. As if to confirm the growing relevance of China in African universities, delegates¹ were from 35 African universities across 19 countries "including Tanzania, Nigeria, South Africa, Kenya, Ethiopia, Tunisia, Ghana, Uganda, Rwanda, Cameroon, Malawi, Benin, the Democratic Republic of Congo, Mozambique, and Somalia, along with delegates from over 50 Chinese universities, attended the event" (China.org.cn, 2024). On of the delegates, Professor Olusola Oyewole, Secretary General of the Association of African Universities (AAU), an organisation created in 1967 and with its secretariat in Accra, not only stated that "a database of over 100 universities in Africa with interest in collaborating with Chinese universities has been compiled," but added that at the meeting "direct memoranda of understanding were signed between some African universities and universities in China" (Wang & Manyukwe, 2024).

Given this dimension of Africa-China relations and Beijing's notable adoption of Summit diplomacy (a structure China meet actors as a collective than bilaterally), the African University offers an important lens to deepen our understanding of Africa's relationship with China. From funding courses, establishing student clubs, exchange programmes, launching Confucius Institutes, equipping labs with Chinese technology, to building entire universities, China's growing footprints is not in doubt. This paper is based on research conducted between 2018 and 2024 in Tanzania, Ghana and Nigeria. A reflection on interviews conducted in 2022-23 with students and staff and management in Ghanaian and Nigerian universities (for Oshodi, 2023), it builds on earlier works on China and the African university, for example, that interrogated China's engagement with African universities as a reflection of its Taiwan relations and one China policy (Oshodi, 2019; Oshodi, Moshood, & Ubabudu, 2022), as an expansion of Chinese global rise through Confucius Institutes (Oshodi. & Barnett, 2021), as a space for China-US digital competition (Oshodi, 2022), and as a potential channel for Chinese technology transfer to Africa (Oshodi, 2023). Specifically, the paper locates China in Ghanaian and Nigerian African universities by: (1) shedding light on the evolution and manifestations of China on the Ghanaian and Nigerian university campuses, (2) highlighting how the universities are responding, and (3) teasing out two possible futures from the current situation. Structurally, the rest of the paper is divided into three sections. Section Two locates the African University's response to China

1 The annual China-Africa Consortium of Universities Exchange Mechanism conference, with the theme "China-Africa Higher Education Cooperation and Development in the Digital Age," was organised by the Beijing Foreign Studies University (BFSU) and Beijing Waiyan Online Digital Technology Co., Ltd, with support from the AAU, Chinese Secretariat and Chinese Institute of the China-Africa Consortium of Universities Exchange Mechanism, and the China Association of Higher Education. It was held at the Beijing International Convention Center (China.org.cn, 2024).

within a ‘thick’ conceptualisation. Section Three highlights the manifestations of China on university campuses in Ghana and Nigeria. The last section discusses the imageries of two possible futures in the African University’s engagement of China.

On university ‘thickness’ and agency

Universities are not merely a space for “teaching, research, and community service (TRC),” their functionality can include shaping discourse, projecting power, circulating and circumventing ideologies, and/or replicating socio-economic realities in society (Oshodi, Moshood, & Ubabudu, 2022, p. 125). For instance, discussions about how universities address the question of what knowledge is, who produces knowledge, and through what process(es) all speaks to a broader conceptualisation of the functionalities of the institution as a space of contestations. Indeed, Ghanaian universities –given the visibility of youth groups of political parties – i.e. Tertiary Education Institutions Network (TEIN) and the Tertiary Students Confederacy (TESCON) respectively supporting the National Democratic Congress (NDC) and the New Patriotic Party (NPP)– will, perhaps, draw a suspicious look from a foreigner, who is used to a hierarchical and apolitical performance of the campus settings. In Belgium, a university was divided because of the inability of the faculty to manage the national question between the Francophone and the Flemish (Oshodi, 2019). The same national questions have confronted merit-based appointment and admission at Nigerian universities (Ekeh, 1975) and elsewhere.

Beyond TRC that relates to the *thin* conceptualisation of the university, therefore, the *think* perspective invites a reimagination of the university as both an arena for contestations within not only national systems but also internationally. China is one of the international actors on the African campus, alongside other American, Asian, and European actors. As an arena for international relations, opinions vary as to the extent of the university’s agency. Indeed, although scholars like Mkandawire (2011) contends that the African University is central to the continent’s development question, others like Mazrui (1975) and Mamdani (2007) are worried about the encirclement of neoliberalism. Others raised equally germane question about the extent to which the

‘African University’ is African – choosing a watered down ‘universities in Africa.’ Unlike the former, that assumes a functionalist conceptualisation (Oshodi, 2023), ‘universities in Africa’ is geographical and, as one interviewee puts it, “universal in character and very scarcely African in context.”² In this sense, it is preferable to use “‘the university in Africa’ because African universities have been more or less struggling to be like universities elsewhere – which means that the precepts, values, orientation, curriculum, course offerings, disciplines, all of those things have little African content.”³ Therefore, the university, to borrow from Mazrui (2023), needs to be re-Africanized.

The functionalist and geographical conceptualisations yet miss the essence of any university – especially in terms of its aspirations to meet the relevance of an ever-changing national and global context. The African University engaged in this paper is in terms of its aspirations and potentialities (Oshodi, 2023). Given this understanding, universities can be agents of their own development as well as their micro and macro communities. It is this agency that can shape its engagement with China.

Ghanaian and Nigerian campus stories

Historically, Ghana and Nigeria have had similar yet different relationship with China. At independence, while Nigeria under Tafawa Balewa pursued a pro-West foreign policy with little engagement with China (Seteolu & Oshodi, 2018), Ghana under Kwame Nkrumah had a cordial relationship with China. In 1964, Nkrumah hosted five Chinese guerrilla warfare trainers led by Col. Yen Leng, until his removal (US Senate, 1972; Ogunsanwo, 1974). Conversely, it was believed that China supported the successionist Biafran forces against the national government in Nigeria’s civil war of 1967-70 (Seteolu & Oshodi, 2018). Interestingly, Nkrumah became fully aware of his removal from office while in China in 1966. Yet, while the Biafran war and the removal of Nkrumah from office might have affected relationship between China and the two countries, by 1971, relations stabilised. Ghana and Nigeria were among the African countries that supported the recognition of China on the floor of the United Nations. Relationship between Beijing and the duo of Accra and Abuja have been largely cordial since then.

2 Prof O, UI, interview in Lagos, 26 July 2022.

3 Prof O, UI, interview in Lagos, 26 July 2022.

On education, China currently hosts the largest number of African students abroad after France – and Ghana and Nigeria, respectively, topped in 2011-2017 (ICEF Monitor, 2021). Beyond hosting students, Chinese presence continue to manifest in universities in the two countries – somewhat reflecting China’s cordial relations with successive Nigerian and Ghanaian governments. Not only are faculty members beneficiaries of Chinese scholarships but there have been exchanges at the faculty and student levels. Chinese telecommunications giant, Huawei, have funded labs on universities’ campuses and its Huawei Authorized Information and Network Academy (HAINA) is common in universities. In both countries, China has not only constructed standalone buildings on campuses, but entire universities have been completely constructed: i.e. the Federal University of Transportation, Daura (FUTD) in Katsina, Nigeria and the University of Health and Allied Sciences in Volta Region, Ghana.

Chinese engagement with the African University largely began following the 1990s ‘going global’ of

Chinese companies. Although the establishment of Confucius Institutes (CI), first introduced in Africa at the University of Nairobi in 2005, are a popular manifestation, it is not necessarily the first step. For example, four years after the CI in Nairobi, two were set up at universities in Lagos and Awka in Nigeria. In Ghana, China’s major engagement with universities did not start with the introduction of CIs. Rather, the first was China’s Export–Import Bank’s (CHEXIM) \$8.3 million loan to the Ghanaian government for the University of Ghana ICT-Enabled Distance Learning System Phase I in 2008, a year before the same university was included in the 20 + 20 Higher Education Collaboration scheme. The scheme was initiated by the Chinese Ministry of Education, and pairs 20 African universities with 20 Chinese universities in a bid to boost collaborations between the pairs (Xinhua, 2011). The UG was paired with Tianjin University of Traditional Chinese Medicine. The first CIs was later established at the University of Ghana (UG) in 2013.

Table 1: Chinese projects in Nigerian and Ghanaian universities, 2008-2023

Year started	Country	University	Chinese intervention
2008	Ghana	University of Ghana (UG)	The award of a \$8.3million CHEXIM loan to the Ghanaian government for the University of Ghana Legon ICT-Enabled Distance Learning System, Phase I
2009	Ghana	University of Ghana (UG)	As part of the 20 + 20 Higher Education Collaboration scheme, the UG was paired with Tianjin University of Traditional Chinese Medicine. The scheme, “initiated by Chinese Ministry of Education” (Xinhua, 2011), pairs 20 African universities with 20 Chinese universities in a bid to boost collaborations between the pairs.
2009	Nigeria	University of Lagos (UNI-LAG)	Established a CI that is partnered to Beijing Institute of Technology
2009	Nigeria	Nnamdi Azikiwe University	Established a CI that is partnered to Xiamen University
2012	Ghana	UG	The award of a \$31.9 million CHEXIM loan to government for the University of Ghana Legon ICT-Enabled Distance Learning System, Phase 2
2012-2013	Ghana	UG, Kwame Nkrumah University of Science and Technology (KNUST), University of Cape Coast (UCC), and University for Development Studies	Huawei ICT laboratories to four public universities at a total cost of US\$1 million
2013	Ghana	UG	Establishment of CI. The CI partners Zhejiang University of Technology.
2013-	Ghana	University of Health and Allied Sciences (UHAS)	Construction of university buildings. The Phase I was completed in 2015 under the NDC-led John Mahama administration (2012-2017). The Phase II, estimated to cost about \$60 million started under the NPP-led Nana Akufo-Addo administration (2017-2025).

2016	Nigeria	Nnamdi Azikiwe University	The CI in the university awarded 54 scholarships to students to study in China
2016	Ghana	UCC	Establishment of CI. The Chinese partner university is Hunan City University
2016	Nigeria	UNILAG	Huawei's US\$6 million Innovation and Experience Centre and the Joint Open Lab.
2017	Ghana	UG	Chinese companies job fair for university students and Degree holders
2018	Nigeria	Ahmadu Bello University (ABU)	CCECC offered 30 scholarships to students
2019	Nigeria	UNILAG	The CI at the institution held its convocation and organised a job fair for staff, students and university community
2019	Nigeria	40 universities	Announcement of partnership between Huawei and the universities in the use of the company's technology
2020	Nigeria	University of Abuja	Opening and unveiling of a Luban Workshop in conjunction with Tianjin Sino-German University of Applied Sciences.
2020	Nigeria	ABU	Huawei donated three Huawei AR6280 routers along with five Huawei S5720 switches
2020	Nigeria	Abubakar Tafawa Balewa University	Huawei and Galaxy Backbone Limited commissioned the Huawei ICT Academy Laboratory
2021	Nigeria	University of Ibadan (UI)	Huawei organised an ICT job fair for students
2021	Nigeria	ABU	Chinese Embassy scholarship award to 50 students – after 47 and 48 was awarded in 2018 and 2019 respectively
2021	Nigeria	Federal University of Transportation, Daura (FUTD)	A Chinese company, China Civil Engineering Construction Corporation (CCECC), donated a \$50 million Chinese-built university as a gift to Nigeria.
2022	Nigeria	UI	Transsion reached a school-enterprise partnership to “improve the academic, management, entrepreneurial and innovation capabilities of local college students, help improve the competitiveness of young African talents, and fulfil corporate social responsibility” (Transsion Developer, 2022). The university will also have a student club, “Infinix club”, named after one of the smart phones produced by Transsion (Agboluaje, 2022)
2022	Nigeria	ABU	PhD scholarship to three staff in the Department of Biochemistry to study at the Shenzhen Institute of Advanced Technology
2022	Ghana	UG	Chinese ambassador's scholarship to 86 students for excellence in Chinese language
2022	Ghana	UCC	Chinese embassy scholarship to 140 students
2022	Ghana	KsTU	China's Rizhao Polytechnic signed an agreement with the university to set up a campus and workshop in Kumasi for TVET
2023	Ghana	KNUST	Establishment of CI in collaboration with the Hubei University of Automotive Technology.

Source: Updated Oshodi (2023, p. 224), Boston University Global Policy Center Chinese Loans to Africa Database; and open media sources.

Table 1 is illustrative of growing Chinese manifestations on university campuses in Ghana and Nigeria. The manifestations can be grouped into at least four dimensions. First is language and culture. This relates to the teaching of Mandarin and Chinese culture at the CIs (Oshodi & Barnett, 2021). Examples of these CIs include the ones established

at the University of Lagos and Nnamdi Azikiwe University both in 2009, University of Ghana in 2013, University of Cape Coast in 2016, and the Kwame Nkrumah University of Science and Technology in 2023. As indicated in Table 1, each of the host universities have partner universities in China. The second manifestation is Chinese scholarships.

The scholarships are awarded by Beijing, Chinese embassies, or Chinese companies, and can be offered to students or staff. The third manifestation is infrastructure and buildings. This could range from equipping laboratories and ICT support, constructing one or more buildings to constructing entire university in Katsina or Volta.

The fourth manifestation is training. These trainings can either be on-campus (as in the HAINA, and the Luban Workshops) or off-campus in China. In some sense, HAINA is a response to Cisco, supposed within a China-US digital competition (Oshodi, 2022). But the Luban Workshop is a more unique programme by China. Coined from Lu Ban, an ancient Chinese master woodcraftsman born during China's Zhou dynasty in 507BC (Li, 2022), and established in 2018 in collaboration with South Africa, Egypt, Kenya and Djibouti to produce highly trained technical personnel, Luban Workshops have been launched in Nigeria and Ghana. In 2020, it was unveiled at the University of Abuja in partnership with the Tianjin Sino-German University of Applied Sciences and other Chinese entities like the Tianjin Railway Technical and Vocational College, China Civil Engineering Group Co, and Huawei Technologies Co. (ChinaDaily, 2022). In 2022, the Kumasi Technical University (KsTU) entered into a similar agreement with China's Rizhao Polytechnic in China for technical and vocational education and training (TVET) (Oshodi, 2023).

Having shed some light on the evolution and manifestations of Chinese presence on university campuses in Ghana and Nigeria, the question remains: how have universities in Ghana and Nigeria responded? This is an important question, but it can also be a misleading one if to 'respond' itself is considered a function of readiness and conviction, both of which must not be taken for granted. As someone puts it, rather than just engage, the university should consider "when to engage, how to engage, who to engage, and much more important,

the sequencing of the strategy of engagement in terms of constituencies and the ideational basis."⁴ This consideration, or "precondition for engagement," is discussed elsewhere (Oshodi, 2023, p. 229-30). The challenge, nonetheless, is that all actors in the African University may not agree on essence, justification or timing. Some may be more interested than others. It is thus crucial to highlight the role of agents in the African University's response. There is a wide pool of potential agents; like teaching and non-teaching staff, and students that graduate and become part of the alumni network, sometimes playing more active role in their universities than when they were students (Moshood & Oshodi, 2018). Any of these groups can become agents of universities' response to China.

Agents can also come from within and/or outside the Africa University. Within universities, agents have ranged from the Vice Chancellor⁵ at the highest level, Head of Department (HoD)⁶ at the intermediate level, to lecturers⁷ that studied in China. Other agents come from Chinese universities,⁸ Chinese businesses,⁹ or from elsewhere outside of the African University. In the case of UNILAG, for instance, one lecturer notes that the agents driving the response included the university leadership with a vision of positioning their institutions and taking advantage of the knowledge space, businesses who requires academic input into their activities and planning, government that is looking for informed data, and the Chinese business looking for partners to change the narrative of an external exploiter.¹⁰ Rather than working in isolation, each of these agents can either lead or be influenced to act by the other. In the case of UI, for example, it was an African that lectures in a Chinese university that reached out to Ibadan and a few other universities to collaborate with his host university in China – afterwards, the Vice Chancellor and HoD at the university keyed into the agent's project.¹¹ Thus, the agent could convince stakeholders in the African University to collaborate with their Chinese counterpart. Agents with connection to Chinese universities can reach out to Africans and members

4 Dr K, UG, interview in Accra, 10 August 2022.

5 Prof S, UNILAG, interview on Zoom, 7 September 2022.

6 Prof I, UI, interview on Zoom, 21 July 2022.

7 Dr L, UG, interview in Accra, 29 July 2022.

8 Prof I, UI, interview on Zoom, 21 July 2022.

9 An example includes China's AVIC-INTL Project Engineering Company that facilitated the collaboration between KsTU in Ghana and Rizhao Polytechnic in China (KsTu, 2021; Xinhua, 2022).

10 Prof S, UNILAG, interview on Zoom, 7 September 2022.

11 Prof I, UI, interview on Zoom, 21 July 2022.

of universities, with HoDs,¹² and/or Vice Chancellors¹³ at some point keying into the relationships.

Having said this, universities have responded – and are responding – to China in several ways. Four elements of their response will be highlighted. First is the development of China-centred or China-related programmes, courses and centres. For example, the University of Lagos established the Institute of Nigeria-China Development Studies (INCDS) in 2018, “to see the academic component of Nigeria’s agreement with China,”¹⁴ and “to come out with research papers, policy analysis and frameworks that can make us have the best from these agreements.”¹⁵ Some universities do not use ‘China,’ but they offer a similar centre for conducting research on the subject. Unlike UNILAG, Legon established a Centre for Asia Studies, to serve as a space to deepen understanding, support government’s engagement, and collaborate with “the rapidly growing Asian region” (Dery, 2015). In addition to centres, courses on language have been developed. It is interesting that the Legon Department of Chinese predates the establishment of the university’s CIs.

A second form of response to China is what can be broadly described as ‘hosting.’ Hosting is an umbrella term that encapsulates different things such as agreeing to host China-supported entities. Universities can refuse to accept collaborations and gifts that they (either management, student, or staff) consider unbefitting for their campus – a case in point is the rejection of the Mahatma Gandhi statute¹⁶ (BBC, 2018). Thus, that CIs and Luban Workshops are hosted in a university is a response, an agreement to host. Yet, hosting reflects the state of the government’s relationship with China in both countries, a reality that may be strengthened in public universities that are funded by government. Visitors from Chinese universities have also been hosted at universities in Ghana and Nigeria. From lecturers from the Communications University in China visiting Ibadan in 2015 (University of Ibadan, 2015) to the Chinese ambassador visiting KNUST (Hubei University of Automotive Technology, 2022),

hostings can develop into the signing of Memoranda of Understanding that entails staff and students exchanges and research collaborations. Hosting also entails Chinese companies, as with Transsion launching students’ activities on campus. Example of this is the “Infinix Club” at Ibadan, a club like the “Techno Fan Club” at the University of Nairobi (Oshodi, 2023). This also covers the hosting of Huawei laboratories and academies.

Third is the increasing number of faculty trained at Chinese universities. Although many faculty tend to be trained within the country and in the United States and Europe, Chinese-trained scholars are slowly increasing in number. A fourth form of response by universities to China is academic gatherings and discussions like conferences, seminars and symposium. Although most conferences do not necessarily invoke strong reactions about their themes, it must not be taken for granted as demonstrated by the public outcry against a 2019 conference on witchcraft in at the University of Nigeria Nsukka (Ukpong, 2019). Nonetheless, conferences bring together scholars from within and outside both countries to present their research and exchange ideas on China in universities. From examples on “60 Years of Ghana-China Relations: A Critical Appraisal” held at the University of Ghana in October 2020 and “Knowledge (Re)Production and the Academe in Africa-China Research Space” held at Lagos State University in May 2024, conferences are fora to interrogate China from the trilogy of optimism, pessimism or caution (Oshodi, 2012 and 2015a).

In lieu of a conclusion: Two (Janus-headed) futures

This paper has highlighted the growing manifestations of China in the African University. Using the example of Ghana and Nigeria, instances where Chinese language, technology, scholarships, and constructions have been provided by Chinese actors to universities have been highlighted and discussed. The paper buttresses the fact that China’s influence in Africa has manifested in the African University. Interviews with lecturers in Ghana and Nigeria about

¹² Prof I, UI, interview on Zoom, 21 July 2022.

¹³ Dr L, UG, interview in Accra, 29 July 2022.

¹⁴ Prof S, UNILAG, interview on Zoom, 7 September 2022.

¹⁵ Prof S, UNILAG, interview on Zoom, 7 September 2022.

¹⁶ A statute of the Indian statesman was unveiled by India’s former President Pranab Mukherjee, in 2016. But this was followed by a petition by lecturers, arguing that Gandhi was racist. By 2018, the lecturers and students succeed in ensuring that the statute was removed.

the future suggests that China's engagement with universities will continue. One interviewee posits that the African University will be "compelled to engage China" because of dwindling state support to the institution.

Given this situation, he adds that China will position "itself to take advantage of that and offering to support particular departments or projects in these various universities in one or another ways and I can see these universities taking these offers."

In some sense, this is not unexpected given that there are several public, state-owned universities and limited resources. It is likely that as Africa-China relations deepen, Chinese presence on university campuses will continue. However, this will develop along two broad extremes that may not necessarily be disconnected. I will discuss these two possible futures using the imagery of (a) the statist university, and (b) the organic university.

By the statist university that sees a dragon's gift, I imagine that the African University will continue to look forward to engaging China like their home government. Scholarships and training programmes will be funded by China. Student and staff exchange will continue. However, I argued elsewhere that the African state, while relying on Chinese development finance, is itself weak in engaging China's deleterious activities. I referred to this tendency as the "point of exit" of African governments (Oshodi, 2015b; an argument I have extended in an under-review paper to the Ghanaian and Nigerian parliaments and Chinese loans, Oshodi, 2026). In this case, the African University, while engaging China, becomes blinded by the deleterious dimension of Africa-China relations. In this case, the university like the state exits or turns away from the difficult issues. Here is where the alternate future comes in.

Unlike the statist university, the organic university engages where the state fails. Even if it accepts the dragon's gifts, it does not lose sight of its commitment to its African constituent. Thus, it can raise knotty questions and engage China as such. Here, the African University is not tied to the position of the state. It can critique and challenge it in its engagement with China and Chinese actors. The CIs bring Ghanaian and Nigerian universities into partnership with Chinese counterparts. In the case of Ghana, the 20+20 initiative offers an even extra partner in China. In addition to these university-level partnership, there have been collaborations

at the department level as exemplified in the communications university scholars visit to the Department of Communications at the University of Ibadan ditto for the University of Lagos' engagement with Chinese business. To imagine, therefore, an organic university will, for example, mean a university in Ghana raising the question of how to co-engage the Chinese involvement and technology like *Chanfang* in illegal mining (or *galamsey* in local parlance) with their partner universities in China; or a Nigerian university collaborating with its counterparts in China on addressing the sustainability question of Chinese loans to Nigeria. By their very nature, these are undoubtedly difficult questions – questions that are not only delicate but will test the academic freedom of the Nigerian, Ghanaian and Chinese universities. Not to be in doubt, these questions cannot only be raised at the university-to-university level but by the African University with Chinese state actors. The organic university will also be concerned with the issue of dependency, for example, in Chinese projects and technologies in Ghana and Nigeria. Thus, an organic university will seek to accentuate the involvement, for instance, of its engineering faculty in the Chinese railway or telecommunications infrastructure. This future is one where the university can mitigate or at least engage the emerging dependency on China in Africa countries.

The African University, by definition, is a complex one – perhaps like other universities. However, a university can transit from a statist to an organic institution, or demonstrate a tendency for both imaginations across management, faculty and departmental levels. Indeed, the Gandhi statute example on the Legon campus and the Rhodes must fall in South African universities illustrate that lecturers and students can indeed successfully oppose government and management's position in issues with international relations dimension. Yet, being organic, does not mean that the African University repudiates China. Indeed, the organic university is motivated by the need to understand how China achieved its economic transformation, and it interrogates the extent to which the African situation is amenable to the process. In leading this interrogation, the organic university merely reflects the realities of the home country and its people. In the case of Ghana, a threat of making clean and drinkable water difficult, for instance, due to the involvement of Chinese citizens and technology, *Chanfang*, forces the university to respond as such in its engagement with China, not to break the relation,

but to bring forth a co-developed engagement of a deleterious impact.

Given the thick conceptualisation of the university, Ghanaian and Nigerian universities may find themselves someday deciding whether their relationship with China will affect their relationship with other actors in the coming future. Indeed, the organic university, which comes across as the most aggressive, may suffer the danger of falling into the fixation that may cause it to lose funding – or be considered anti-China. The statist university, on the other hand, is likely to be disconnected from the

society it is meant to serve. While it is concerned with its survival and functioning with more reliable funding that can be supplemented by funding from China, it risks being drowned in a neoliberal fixation – a failing that currently affects many universities in Africa where internal revenue generation and floating lucrative courses have become the norm. In all, the ability of the African University to navigate the twin imageries of the statist and organic universities will determine the extent to which it can respond effectively to these moments and China by implication.

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THE FUTURE OF HIGHER EDUCATION IN AFRICA

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Abstract

The 21st century is characterized by a remarkable rise in technological advancements globally, significantly impacting the topography of higher education in Africa. This study explored the current trends, challenges, and potential future directions for higher education on the continent, with a particular focus on the role of innovation and policy in shaping its evolution. We investigated the future of higher education in Africa through a dual approach: a comprehensive analysis of existing literature and the collection of primary data via online questionnaires with key stakeholders, including policymakers, educators, and students from thirteen African countries. The collected data were meticulously analyzed to identify common themes and project future scenarios for higher education in Africa. Our findings reveal several critical trends influencing the future of higher education in the region. There is an increasing adoption of digital learning technologies, driven by the need for accessible and flexible educational opportunities. Enrollment rates are rising, powered by a youthful population keen for higher education. Additionally, private and transnational educational institutions are becoming more prominent, addressing the demand for quality education. However, significant challenges remain, including inadequate funding and infrastructure deficits, which pose substantial barriers to the growth of higher education. Furthermore, policy fragmentation across regions complicates efforts to standardize and enhance education quality. Despite these challenges, innovative solutions are emerging. Public-private partnerships and regional cooperation are identified as crucial strategies for overcoming these obstacles. The future of higher education in Africa will largely depend on the continent's capacity to leverage technology and foster innovation while addressing systemic issues. Strategic investments in digital infrastructure, the establishment of robust policy frameworks, and the promotion of inclusive educational practices are essential for building a resilient and equitable higher education system capable of meeting the demands of a dynamic and globalized economy.

Keywords: Higher education, Africa, digital learning, innovation, policy, future trends, infrastructures.

Introduction

The 21st century has been marked by unprecedented technological advances that have reshaped industries, economics, and societies worldwide. This evidence has shown its proof in the sector of higher education, where innovation and digital transformation are causing trouble across the globe. In Africa, the impact of these technological advancements is profound, influencing how higher education is delivered and accessed. However, higher education is a critical driver of economic development, social mobility, and innovation in the world. In recent decades, the demand for higher education has grown exponentially, particularly in regions like Africa, where youthful populations are anxious to access the skills and knowledge needed for the global economy (Marginson, 2016; Abad-Segura & González-Zamar, 2021). Still, the topography of higher education across the continent is undergoing significant transformation (Altbach et al., 2019). Technological advancements, demographic shifts, and economic pressures are reshaping how education is delivered and experienced in Africa.

As the world becomes increasingly interconnected, there is a pressing need for educational institutions to adapt to new modes of teaching and learning (du Plessis et al., 2022). The integration of digital technologies, such as online learning platforms and mobile educational tools, is helping to bridge gaps in accessibility and flexibility in the sector of higher education, with the event of COVID-19 pandemic period (Sá & Serpa, 2020; Association of African Universities (AAU), 2021) as an example. Notwithstanding, these advancements also bring challenges, particularly in regions where infrastructure and funding are insufficient to support these innovations effectively (Pandey et al., 2021). In Africa, the diversity of economic, political, and social contexts across different countries adds another layer of complexity to efforts to modernize and improve higher education systems.

This evolving environment presents both opportunities and challenges for stakeholders in the higher education sector, including governments, institutions, and students (Barakabitze et al., 2019; Kayembe & Nel, 2019). As such, research into the trends, obstacles, and potential future pathways of higher education in Africa is vital (South African Qualifications Authority (SAQA), 2019). Considering these dynamics will not only help to shape policy but also ensure that higher education systems can meet the needs of a rapidly changing world, positioning Africa to take full advantage of its demographic and technological dividends.

Literature Review

Demographic Pressures and Opportunities

The rapid growth and youthful demographic in Africa significantly impact the continent's higher education

topography. Bloom et al. (2003) and Makiwane & Kwizera (2009) note that as Africa's population expands, the demand for higher education intensifies, often outpacing the capacity of African universities. Lebeau & Oanda (2020) further elaborate that this demographic trend presents both opportunities and challenges. While it provides a larger pool of potential students, educational institutions are under strain to expand rapidly, accommodate increasing student numbers, and maintain quality (Kanyip, 2013). This youth-driven demand necessitates infrastructure growth, enhanced resource allocation, and institutional reforms to create accessible and inclusive educational opportunities.

Technological Advancements and Digital Transformation

Digital transformation is a crucial factor reshaping higher education in Africa. Scholars like Makoe & Olcott (2021), Modise (2022), and Gaglio Cyrielle et al. (2022) underline that digital technologies, particularly mobile learning and online platforms, are being adopted to enhance access and flexibility in African education. These studies highlight, however, that while digital learning has vast potential, it is hindered by poor infrastructure, unreliable internet access, and limited digital devices in several African regions (Nwachukwu Prince Ololube et al., 2007; Adarkwah, 2021). Mirazchiyski & Černe (2020) and Anderson (2023) point out that the persistent digital divide exacerbates educational inequalities, especially between urban and rural areas. Given these constraints, there is a pressing need to invest in ICT infrastructure and enhance digital literacy across the continent.

Private and Transnational Implications in Higher Education

With limited public resources to support the increasing demand, private and transnational institutions have emerged as vital players in African higher education. According to Broke-Utne (2003), Sawyerr (2004), and Materu (2007), public institutions in Africa face significant funding constraints, leading to inadequate infrastructure and limited faculty, which affects their global competitiveness. Oketch (2016) and Yirdaw (2014) discuss the role of private universities in addressing capacity shortages and quality concerns, though affordability remains a concern for many families. Similarly, transnational partnerships have begun filling gaps in access and curriculum development, yet questions around the sustainability and quality of such programs persist (Tsevi, 2015). These new entrants are reshaping access to education, though their impact on affordability, equity, and long-term outcomes warrants further examination.

Challenges in Higher Education: Funding, Policy Fragmentation, and Infrastructure

Funding limitations, policy fragmentation, and inadequate infrastructure remain persistent barriers to higher education development in Africa. Research by Bhujun & Perry (2024), Knight (2014), and Elidjah et al. (2022) reveals that inconsistent policies hinder cross-border collaboration, accreditation, and student mobility. While the African Union's Higher Education Harmonization Strategy has laid a foundation for regional cooperation, implementation has been slow, and disparities remain (Watson, 2009). The chronic underfunding of public universities, highlighted by Broke-Utne (2003) and Sawyerr (2004), limits their ability to compete internationally. Without consistent investment, African universities face ongoing struggles to meet enrollment demands, enhance faculty quality, and improve campus infrastructure.

Innovations and Emerging Trends in Higher Education

Despite these challenges, innovations in African higher education present promising solutions. Scholars like Mirazchiyski & Černe (2020) and Anderson (2023) emphasize that digital learning, if appropriately adapted to local contexts, could transform education access, particularly in rural and underserved regions. Additionally, regional cooperation and public-private partnerships offer strategies to bridge infrastructure

and funding gaps. Studies by Mabizela (2005), Mugume & Luescher (2015), and Mgaiwa & Poncian (2016) illustrate the effectiveness of these partnerships in enhancing resource mobilization and improving campus facilities. However, sustained efforts are needed to address disparities in digital access, support infrastructure development, and streamline policy to foster a resilient and inclusive higher education system.

Future Research Directions

While substantial research exists on higher education in Africa, several gaps remain. There is a need for more studies on the long-term impact of digital technologies on educational outcomes and adaptation to African contexts, especially in rural areas (Mathew & Iloanya, 2016; Ndaipa et al., 2016). Further research is required to explore strategies for managing rising enrollment while maintaining quality (Igwe et al., 2021; Obwogi, 2013). Comparative studies between private and public institutions on access and outcomes are also limited (Yirdaw, 2014; Tsevi, 2015; Oketch, 2016). Finally, case studies on the effectiveness of public-private partnerships and policy harmonization across African countries could provide valuable insights (Helmy et al., 2020). Addressing these gaps would deepen appreciation of the challenges and opportunities within African higher education and support informed policy and institutional development.

Objectives

The study aims to explore current trends, challenges, and future directions in African higher education, focusing on the role of innovation and policy. It examines how digital technologies affect access, quality, and equity, and assesses the impact of demographic shifts on institutional capacity. The research also investigates funding and infrastructure challenges, exploring the role of public-private partnerships. Additionally, it looks at policy fragmentation and the potential for harmonizing regional and national education policies. The study provides recommendations for leveraging technology and cooperation to build a more resilient and inclusive higher education system in Africa.

Significance of the study

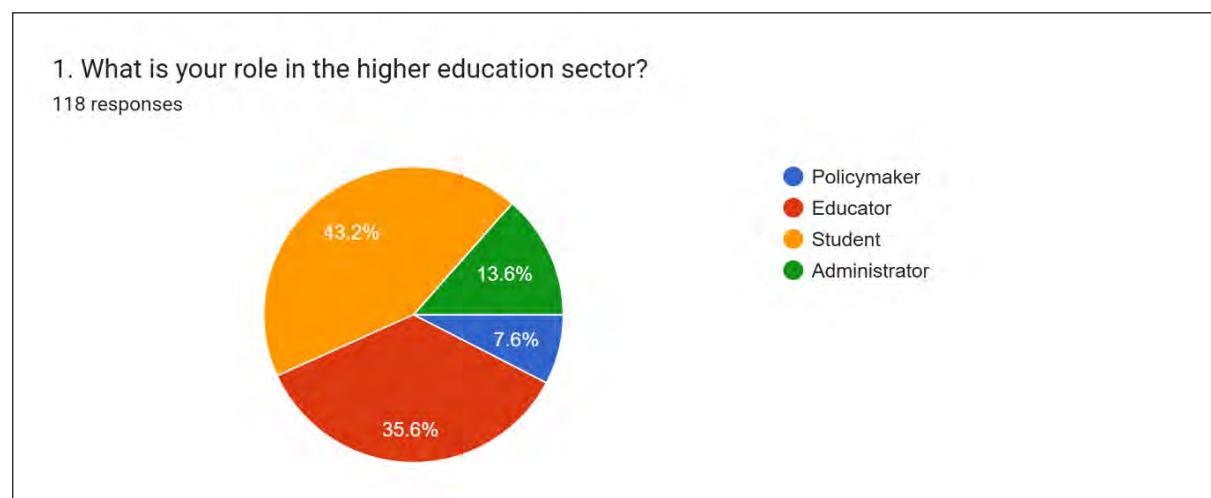
This study is significant as it will provide a comprehensive analysis of the factors shaping higher education in Africa, addressing critical gaps in research by examining the intersections of technology, demographics, funding, and policy. It aims to inform policy decisions and strategic recommendations to improve education quality, accessibility, and system harmonization across the continent. The research will promote equity by emphasizing solutions for underserved areas and supports institutional innovation through public-private partnerships. Additionally, it will contribute to Africa's global competitiveness by fostering regional cooperation and cross-border academic exchange. The study will also guide future research on digital learning and policy harmonization, positioning Africa to build resilient and inclusive higher education systems.

Methodology

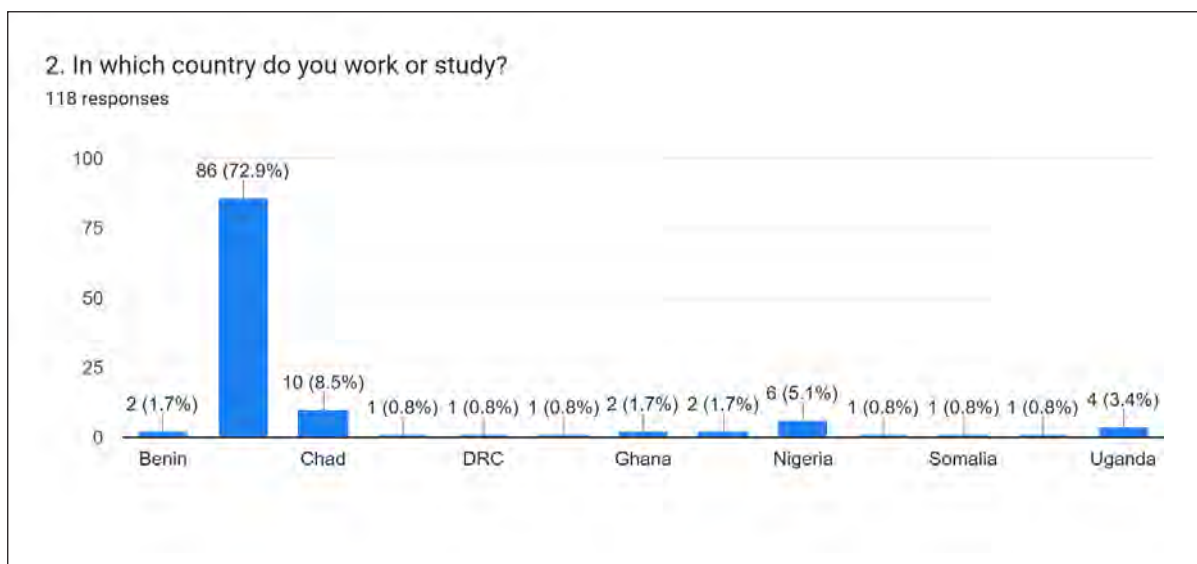
In order to gain a deep understanding of the issues, this study was based on two main approaches: An analysis of existing literature, including academic articles, government reports, and case studies on education in Africa; and an online questionnaire were conducted with key stakeholders such as policymakers, administrators, educators, and students from thirteen (13) African countries. We used online questionnaires with platforms Google Forms to create an online database. Questionnaires were distributed through questionnaire links via email and social media (WhatsApp). These discussions aimed to appreciate local perceptions and identify solutions to the challenges faced by higher education institutions. The collected data was thematically analyzed to identify common trends and project future scenarios for higher education in Africa.

Results

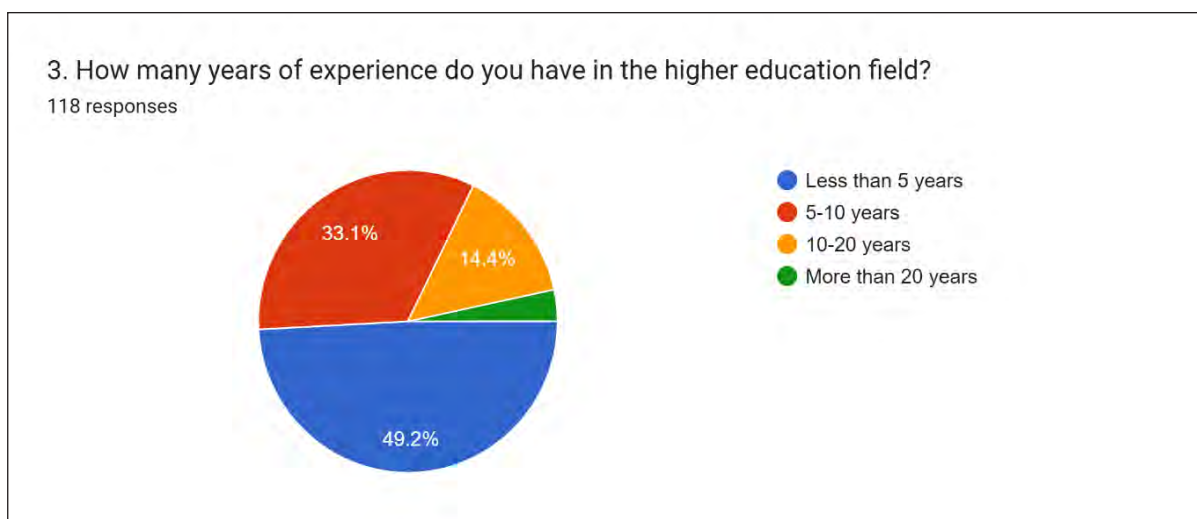
Demographic Factors



The pie chart displays the distribution of roles among 118 respondents in the higher education sector. The majority, 43.2%, identify as students, indicating a significant representation from the learner demographic. Educators follow closely, accounting for 35.6% of the responses, reflecting the perspective of teaching professionals. Administrators make up 13.6% of the participants, providing insights from institutional management. Policymakers are the smallest group, representing only 7.6% of the total respondents, suggesting limited direct input from those involved in shaping educational policies in this study. This distribution offers a balanced view but is heavily influenced by students and educators.



The bar chart illustrates the distribution of respondents by the country in which they work or study. The majority of respondents, 72.9% (86 out of 118), are from Cameroon, followed by Chad 8.5%, indicating that the study has a strong participation from individuals based in Cameroon. The third largest group is from Nigeria, with 6 respondents (5.1%). Smaller groups come from Benin (2 respondents, 1.7%) and Uganda (4 respondents, 3.4%). Other countries like the Democratic Republic of the Congo (DRC), Ghana, Somalia, and a few others each have 1 or 2 respondents, comprising less than 1% of the total. This distribution explains the fact that, the survey was conducted by us, residing in Cameroon, with a minor representation from other African countries.

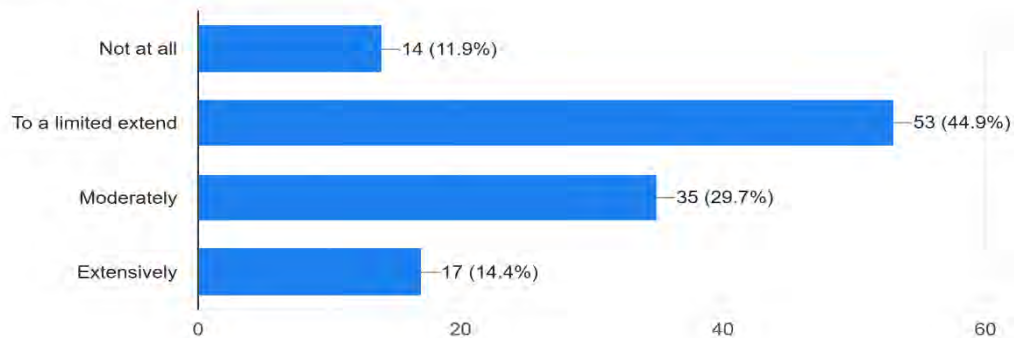


The above diagram shows the distribution of respondents based on their years of experience in the higher education field. Nearly half of the respondents (49.2%) have less than 5 years of experience, suggesting a significant portion of the participants are relatively new to the sector. The next largest group, 33.1%, has between 5 to 10 years of experience, indicating that a substantial number of respondents have mid-level experience. Meanwhile, 14.4% have 10-20 years of experience, and only a small percentage (3.4%) have more than 20 years of experience. Overall, this chart reflects a diverse range of experience levels, but with a clear skew toward those with less than 10 years of experience in higher education.

Technological advancements

4. To what extent has your institution adopted digital learning technologies (example e-learning platforms, mobile learning)?

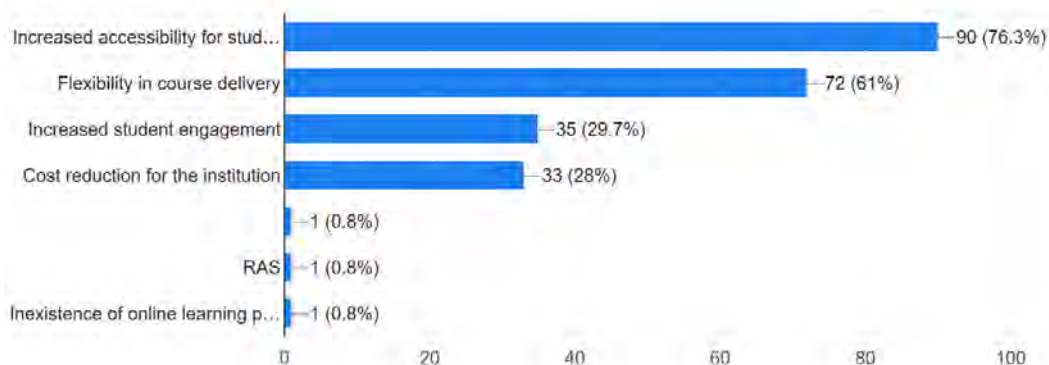
118 responses



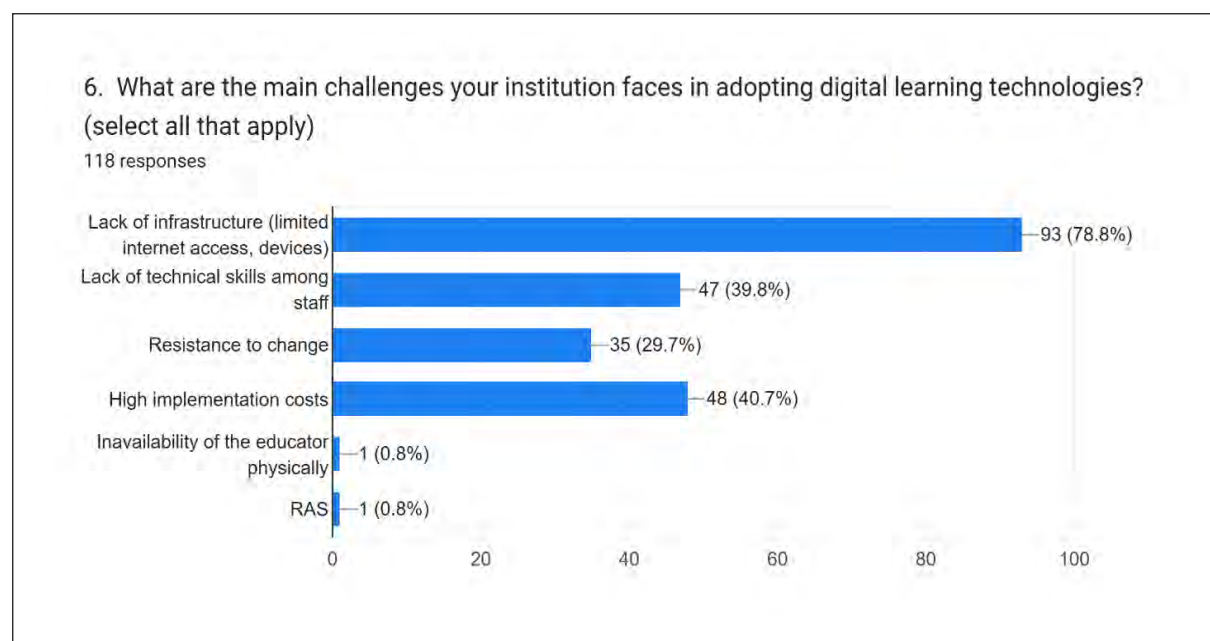
These results show that, while many institutions have started adopting digital learning technologies, a large portion (44.9%) have done so only to a limited degree, and 11.9% have not adopted them at all. A smaller group (14.4%) has embraced these technologies extensively, highlighting disparities in digital integration across institutions in Africa.

5. What are the main advantages of digital learning technologies in your institution? (Select all that apply)

118 responses

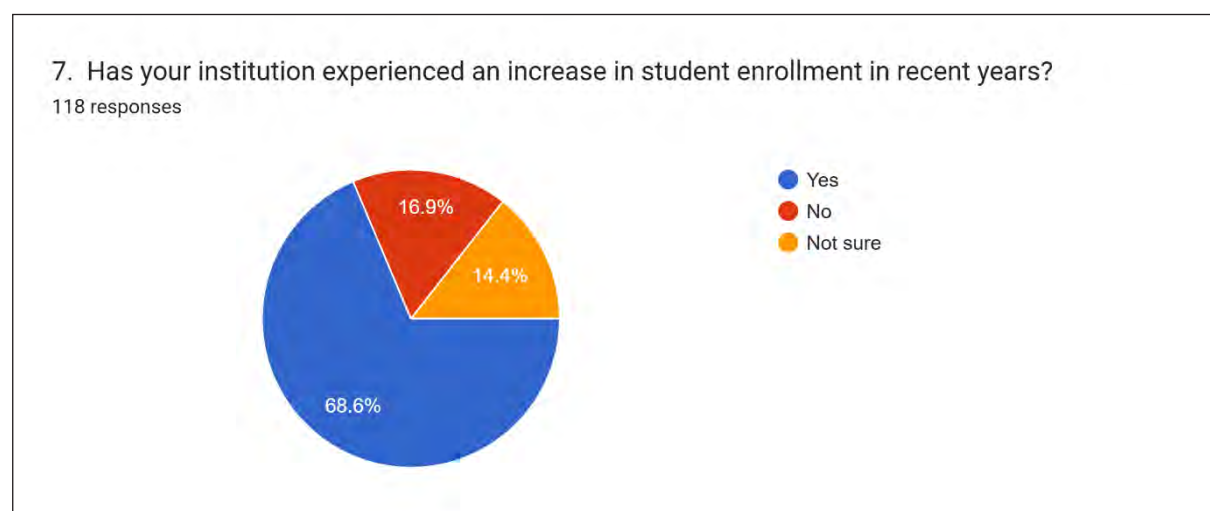


These results indicate that the most significant advantage of digital learning technologies, cited by 90 respondents, is increased accessibility for students. Flexibility in course delivery is also highly valued, selected by 72 respondents, while fewer participants see increased student engagement (35) and cost reduction for the institution (33) as major benefits. This suggests that institutions primarily view digital learning as a means to enhance access and flexibility rather than reduce costs or boost engagement.

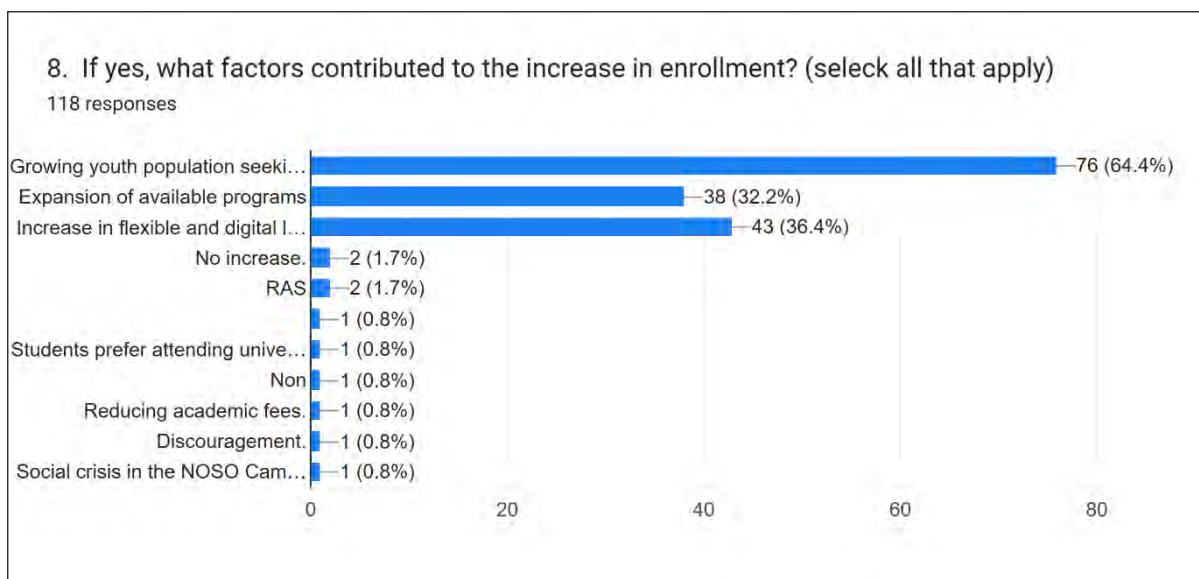


The main challenge in adopting digital learning technologies, according to 93 respondents, is the lack of infrastructure, such as limited internet access and devices. High implementation costs are also a significant barrier, selected by 48 respondents, followed by a lack of technical skills among staff (47). Resistance to change is less commonly cited but still notable, with 35 respondents indicating it as a challenge. These results highlight that infrastructure and financial constraints are the most pressing issues, while technical skills and change management are additional concerns.

Enrollment trends and demographic changes



These results indicate that a significant majority (68.6%) of respondents have observed an increase in student enrollment in their institutions in recent years. A smaller portion, 16.9%, reported no increase in enrollment, while 14.4% were unsure. These findings suggest that most institutions are experiencing growth in their student populations, which may be a factor influencing the adoption of digital learning technologies and infrastructure expansion.



The results show that the primary factor contributing to the increase in enrollment is the growing youth population seeking higher education, as indicated by 76 respondents. Additionally, the increase in flexible and digital learning options was highlighted by 43 respondents, showing the role of technology in attracting students. The expansion of available programs was also a significant factor, with 38 responses, indicating that more program choices are helping institutions cater to a wider range of student interests and needs.

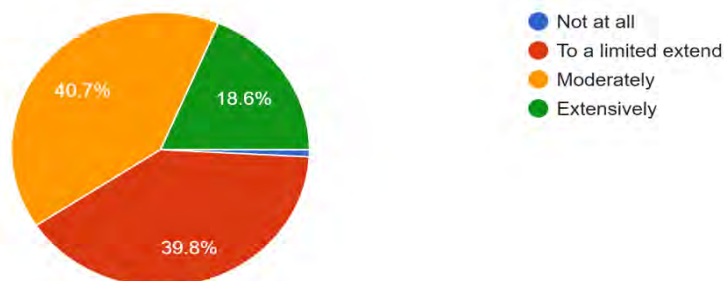


The above diagram indicate that the most pressing challenge institutions face with increasing enrollment is overcrowded classrooms, as cited by 67 respondents. Inadequate facilities were also a major concern, with 61 responses. Lack of funding was reported by 58 respondents, highlighting financial constraints in addressing growing demands. Also, 48 respondents pointed to insufficient staff, which further exacerbates the strain on resources and the ability to maintain quality education as enrollment rises.

Private and transnational institutions

10. To what extent do private or transnational educational institutions participate in higher education in your region?

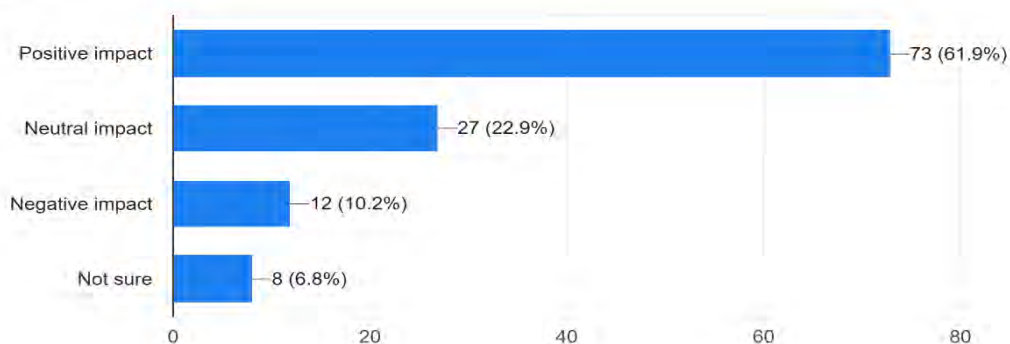
118 responses



These results show that private or transnational educational institutions play a significant role in higher education in the respondents' regions, with 40.7% indicating moderate participation and 18.6% reporting extensive involvement. However, a notable proportion (39.8%) of respondents still see these institutions as only participating to a limited extent, while a very small percentage (0.8%) reported no involvement at all. This suggests that private and transnational institutions are increasingly influential but still face barriers to broader integration.

11. In your opinion, how has the presence of private or transnational institutions affected the quality of education in your country?

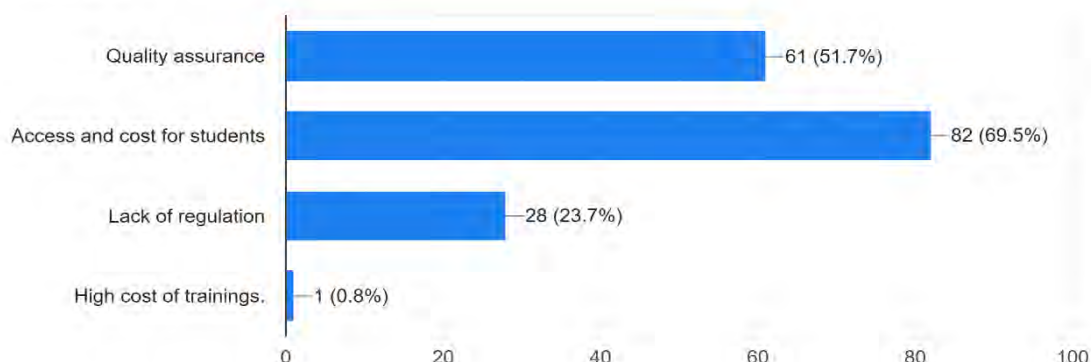
118 responses



The above results indicate that a majority of respondents (61.9%) believe that the presence of private or transnational institutions has had a positive impact on the quality of education in their country. A smaller proportion (22.9%) view the impact as neutral, while only 10.2% believe it has had a negative effect. A few respondents (6.8%) are unsure of the impact. Overall, the perception is largely favorable, with some reservations or uncertainties.

12. What are the main concerns regarding the rise of private educational institutions in your country? (select all that apply)

118 responses

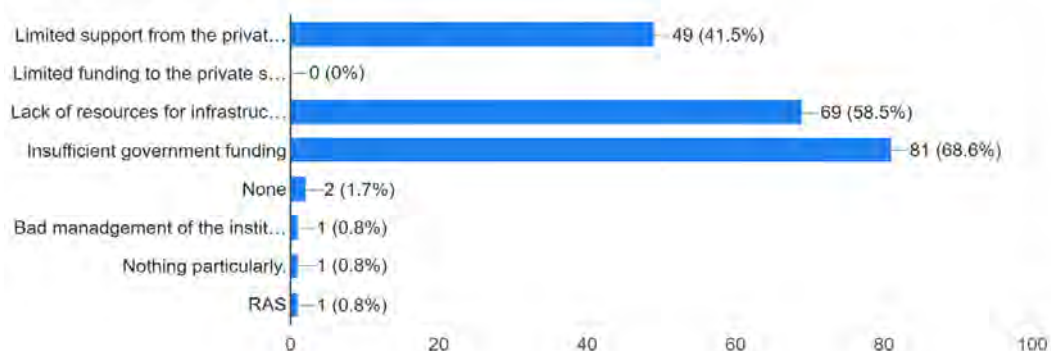


The main concerns regarding the rise of private educational institutions are primarily related to access and cost for students, with 82 respondents expressing this worry. Quality assurance is also a significant concern, mentioned by 61 respondents. A smaller group (28 respondents) is concerned about the lack of regulation governing these institutions. These results highlight issues of affordability and quality control as key challenges in the growth of private education.

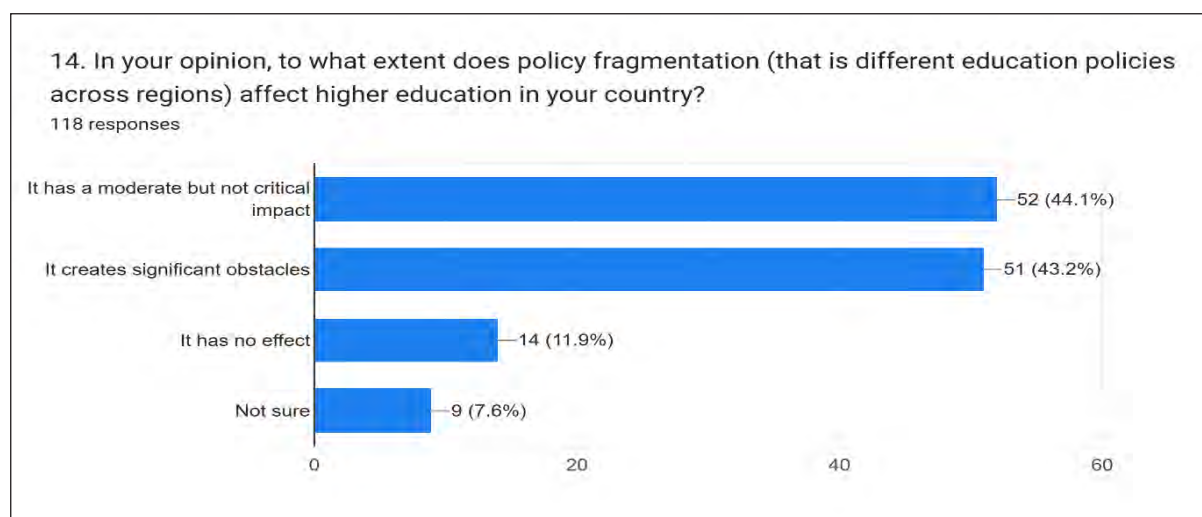
Challenges in higher education

13. What are the main funding challenges your institution faces? (select all that apply)

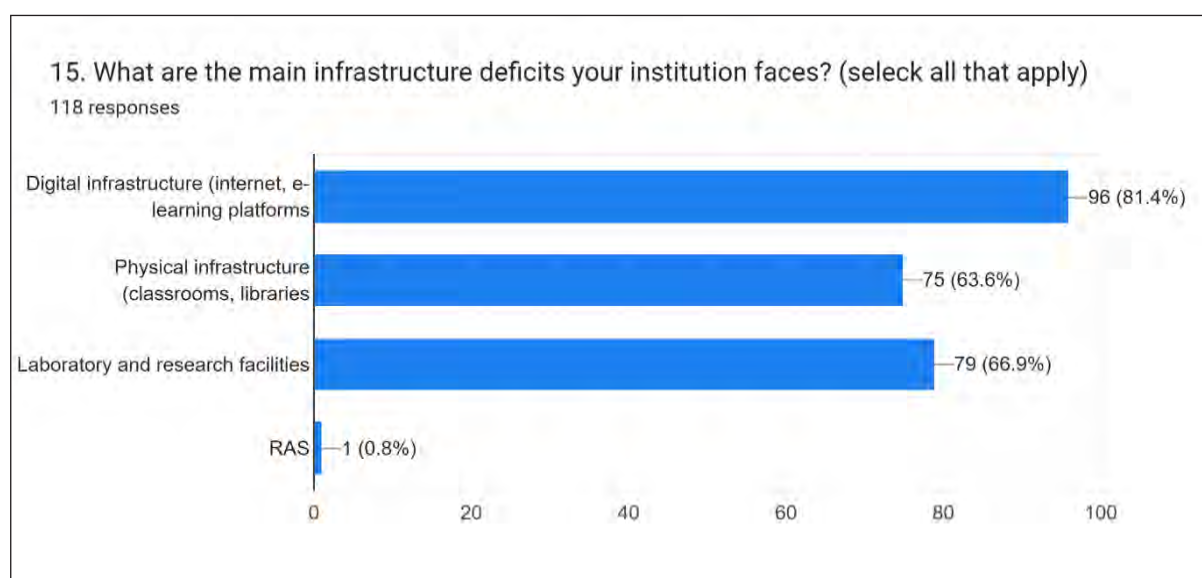
118 responses



The main funding challenges faced by institutions include a lack of resources for infrastructure, which is the most pressing issue with 69 respondents mentioning it. Limited support to the private sector is also a major challenge, as indicated by 49 respondents, followed by insufficient government funding, which 81 respondents identified as a concern. These results suggest that both public and private funding sources are inadequate, particularly in addressing infrastructure needs.



These results show that a majority of respondents (52%) believe policy fragmentation creates significant obstacles for higher education, while 51% see it as having a moderate impact. Only 14% think it has no effect, indicating a general consensus that inconsistent regional policies hinder access and equity in education. This indicates the need for more cohesive approaches to improve higher education systems.

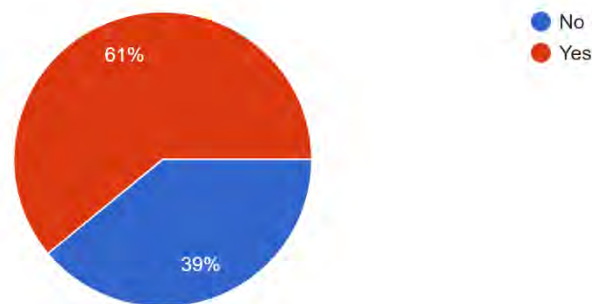


The results reveal that 96% of respondents see digital infrastructure as the main deficit, pointing out urgent needs for better internet and e-learning platforms. Physical infrastructure, such as classrooms and libraries, is also a concern for 75% of respondents, while 79% identify gaps in laboratory and research facilities. Overall, these findings indicate a critical need for investment in multiple infrastructure areas to improve educational quality and access.

Policy and innovation

16. In your opinion, are the programs offered by your country's higher education system aligned with international educational standards?

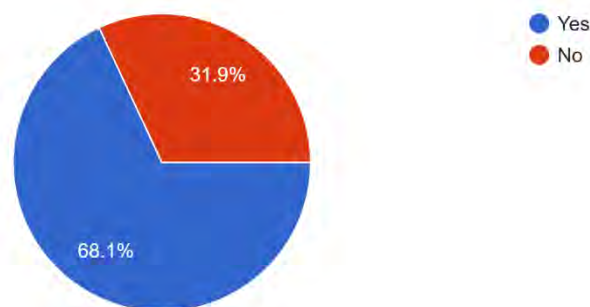
118 responses



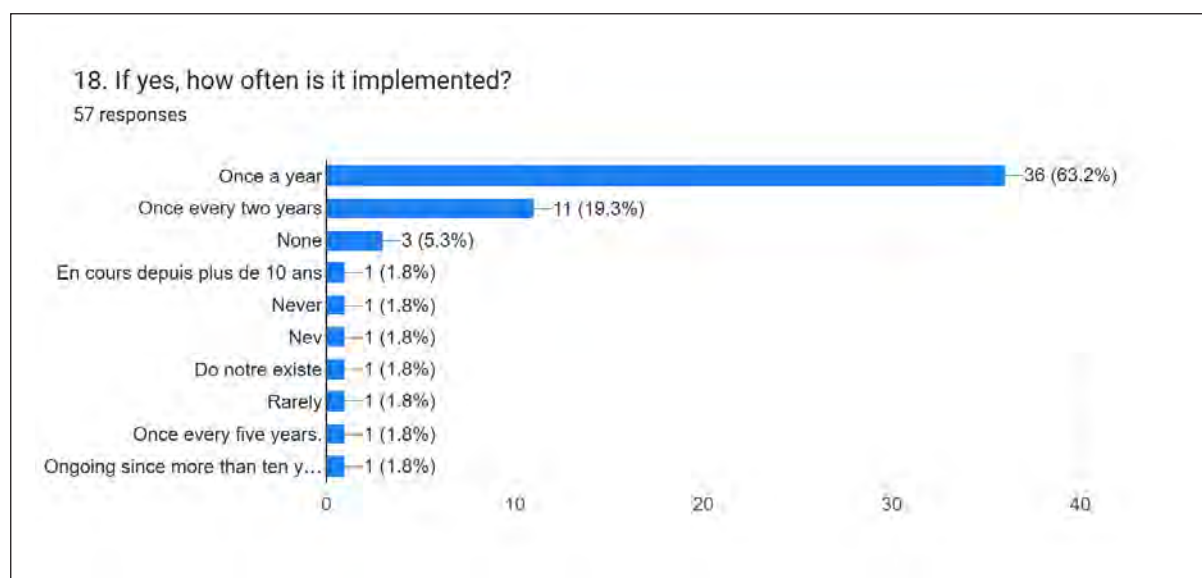
The chart shows that 61% of respondents believe their country's higher education programs are not aligned with international standards, while 39% think they are. This suggests a general perception of inadequacy in meeting global educational benchmarks, though a significant minority views the system more favorably. The results indicate a need for reforms in the education system to address these concerns and improve global competitiveness.

17. Does your country have a national policy to align university curricula with innovative sectors (question reserved for policymakers)?

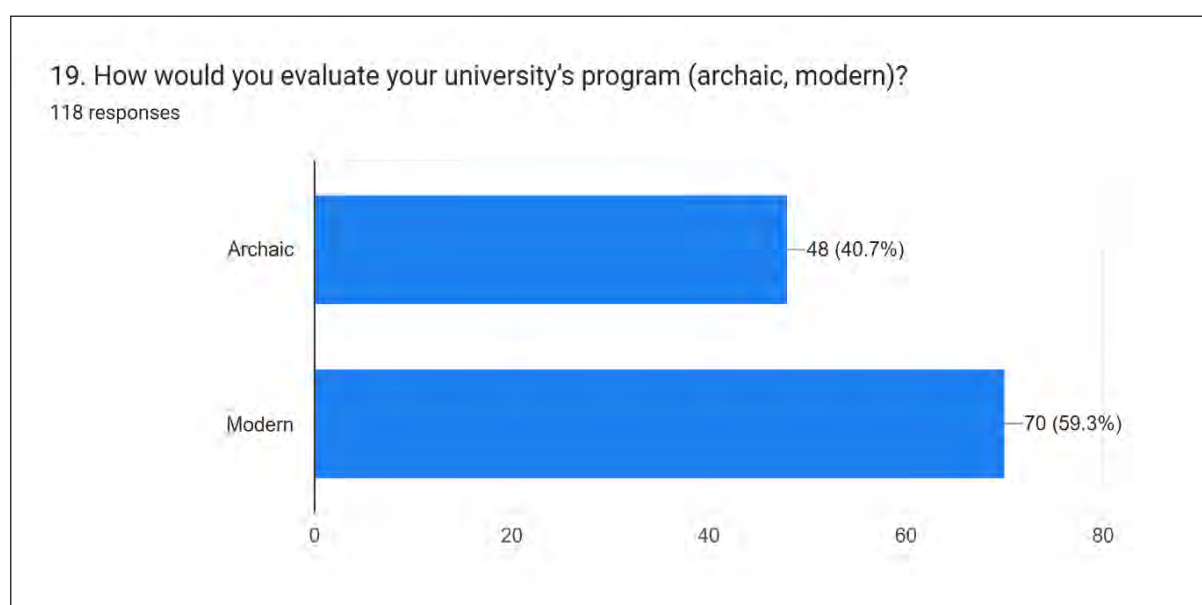
72 responses



The chart shows that 68.1% of policymakers believe their country has a national policy to align university curricula with innovative sectors, while 31.9% say there is no such policy. The majority opinion suggests that efforts are being made to adapt education to modern, innovative needs, though a significant minority highlights a lack of such alignment, indicating room for improvement or differences in perception of how effectively these policies are being implemented.



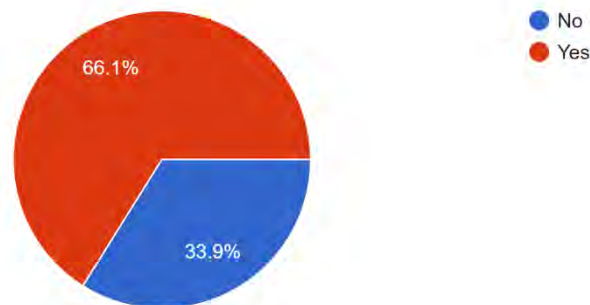
The chart shows that 63.2% of respondents say the policy is implemented once a year, while 19.3% report it is implemented every two years. A small percentage (5.3%) claim there is no implementation at all, with a few others indicating varying or rare frequencies. This suggests that while annual implementation is the most common practice, there are inconsistencies in how often the policy is applied, reflecting variability in commitment or execution across different regions or institutions.



The above results show that 70 respondents view their university programs as modern, while 48 describe them as archaic. Although a majority see their programs as up-to-date and aligned with contemporary needs, a significant portion (48) believe the programs are outdated. This split indicates that while progress has been made in modernizing curricula, there are still concerns about some programs being out of touch with current trends and requirements. There seems to be a need for continued reforms to bridge the gap and ensure that all programs evolve to meet modern standards.

20. Are the programs offered by your institution aligned with the job market and employment opportunities

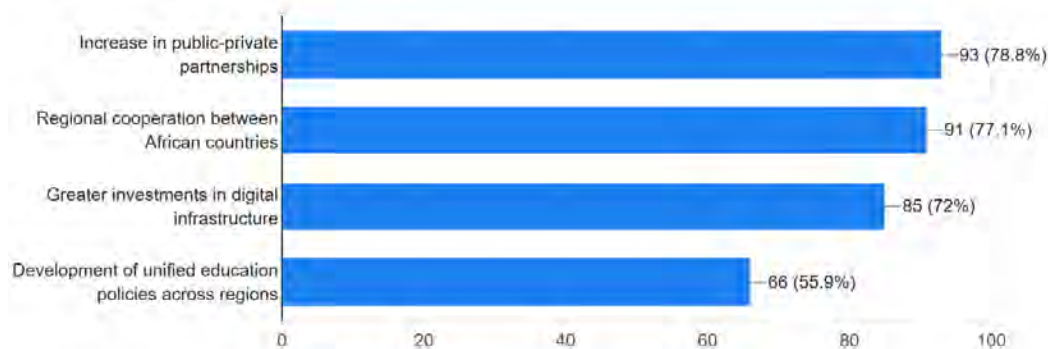
118 responses



The results show that 66.1% of respondents believe the programs offered by their institution are aligned with the job market and employment opportunities, while 33.9% think they are not. This majority suggests that most respondents feel their education is adequately preparing them for career prospects. However, the 33.9% who disagree highlight that a significant portion still perceives a disconnect between academic programs and real-world job opportunities, indicating room for improvement in aligning curricula with market needs. Addressing this gap could enhance employability and job readiness for all graduates.

21. What strategies, in your opinion, could help overcome the current challenges facing higher education in Africa? (select all that apply)

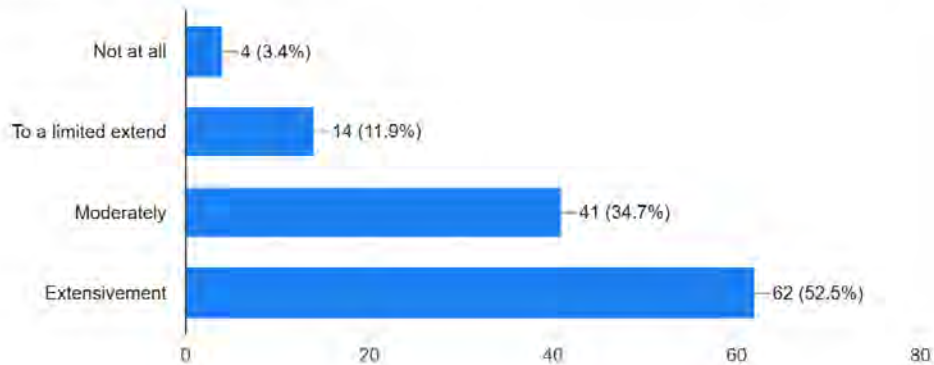
118 responses



The results highlight strong support for increasing public-private partnerships (93%) and regional cooperation between African countries (91%) as key strategies to tackle higher education challenges. There's also significant backing for greater investments in digital infrastructure (85%) to enhance access and facilitate e-learning. While developing unified education policies across regions (66%) is recognized as important, it is viewed as a more complex, long-term solution. Overall, these strategies emphasize collaboration and investment as essential for strengthening higher education in Africa.

22. To what extent do you think innovation (technology, new educational models) will play a role in the transformation of higher education in Africa

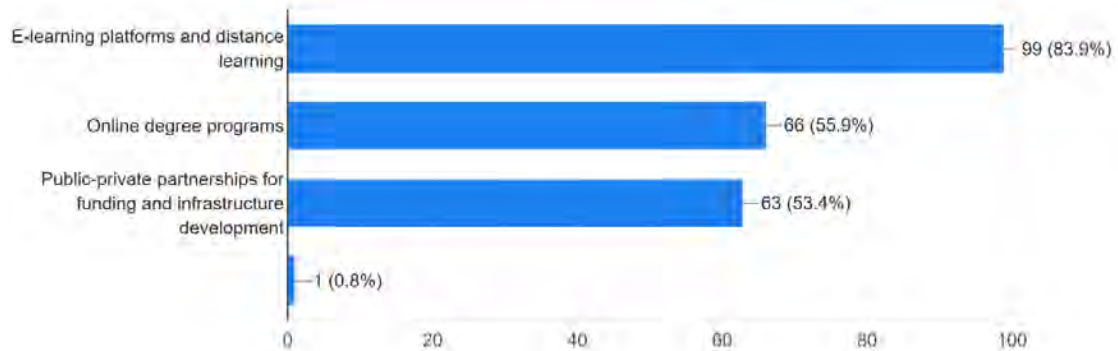
118 responses



The results indicate that a majority of respondents (62) believe that innovation, such as technology and new educational models, will play an extensive role in transforming higher education in Africa. A significant number (41) feel it will have a moderate impact, while 14 believe it will only play a limited role. Only 4 respondents think innovation will not play any role at all. This suggests a strong belief in the potential of innovation to reshape the higher education landscape in Africa.

23. What are the most promising innovations you see emerging in African higher education? (select all that apply)

118 responses



The above results show that, e-learning platforms and distance learning are viewed as the most promising innovations in African higher education, with 99% of respondents recognizing their potential. Online degree programs (66%) and public-private partnerships for funding and infrastructure development (63%) also receive significant support. Overall, there is strong optimism about digital solutions and collaborative efforts as key drivers for the future of higher education in Africa.

General comments

24. In your opinion, what are the most critical factors that will shape the future of higher education in Africa over the next decade?

The responses highlight several critical factors that will shape the future of higher education in Africa over the next decade. Socio-political factors and technological advancements are deemed crucial, emphasizing the need for access to quality technology and digital tools. Additionally, there is a strong call for quality assurance in unified curriculums and innovative teaching techniques that adapt to digital advancements. Collaboration between public and private sectors, along with partnerships among African countries for teacher training and sufficient funding, is also seen as vital for educational development. Overall, these factors reflect a comprehensive vision for a more integrated and technologically adept higher education system in Africa.

25. Any additional comments or suggestions for improving higher education in Africa?

The responses emphasize a wide range of suggestions for improving higher education in Africa. Key themes include the need for the professionalization of programs by integrating theories with practical training, extensive digitalization of educational systems, and the development of e-learning platforms. There is strong support for collaboration between public and private sectors, as well as the importance of aligning curricula with job market needs.

Respondents advocate for merit-based admissions, increased scholarships for underprivileged students, and improved infrastructure, such as equipped laboratories and adequate facilities. They also stress the significance of good governance, transnational training for lecturers, and fostering entrepreneurship within academic programs. Furthermore, many call for harmonization of curricula across regions and countries; and enhanced funding for research and educational initiatives. Overall, these insights reflect a collective vision for a more responsive, equitable, and technologically advanced higher education system in Africa.

Discussion

Demographic Pressures and Opportunities

The survey shows most respondents are students (43.2%), followed by educators (35.6%), with fewer administrators (13.6%) and policymakers (7.6%). The strong presence of students supports Bloom et al.'s (2003) observation of the growing demand for higher education in Africa. However, the limited representation of policymakers highlights a potential gap in capturing insights from those directly involved in shaping educational policy.

Most respondents are based in Cameroon (72.9%), with fewer from Chad (8.5%) and Nigeria (5.1%). This local concentration aligns with Sawyerr's (2004) point that Africa's educational challenges vary by country, especially in areas like funding and infrastructure, as noted by Broke-Utne (2003).

Nearly half of the respondents have less than five years of experience in higher education, meaning a young workforce but limited experience in the field. This aligns with Makoe & Olcott's (2021) findings that digital transformation holds promise but needs more experienced leadership to implement it effectively, as Anderson (2023) suggests. These results show that African higher education needs clearer policies, more experienced leadership, and better technology investment to build a strong future (Knight, 2014; Bhujun & Perry, 2024).

Technological Advancements in African Higher Education

The survey results reveal that while many institutions in Africa have started to integrate digital learning, the extent of adoption varies widely, with 44.9% of institutions only adopting it to a limited degree and 11.9% not adopting it at all. This disparity is consistent with findings by Makoe & Olcott (2021) and Modise (2022), who note that while digital technologies have potential, integration across Africa is uneven due to challenges with infrastructure and resources. The limited adoption suggests that many institutions are not yet positioned to take full advantage of digital learning, which could restrict educational access and quality improvements for students.

In terms of benefits, the main perceived advantage of digital learning is its potential to increase accessibility, with 90 respondents highlighting this. Increased flexibility in course delivery was also

highly valued (72 respondents). These preferences align with research by Gaglio Cyrielle et al. (2022) and Nwachukwu Prince Ololube et al. (2007), who emphasize digital learning as a promising tool for broadening access and providing flexible learning options in Africa. Interestingly, fewer respondents view digital learning as a means to reduce costs (33 respondents) or increase student engagement (35 respondents). This suggests that digital learning is still seen primarily as an accessibility tool, rather than as a means to enhance interaction or achieve cost efficiencies, likely due to infrastructure costs and uneven internet access.

The most significant barriers to digital adoption, cited by 93 respondents, are inadequate infrastructure especially unreliable internet and lack of digital devices. High costs of implementation (48 respondents) and limited technical skills among staff (47 respondents) are also substantial challenges. These findings align with Adarkwah (2021) and Anderson (2023), who highlight that insufficient infrastructure and technical skills are widespread barriers in Africa's digital education. Resistance to change, noted by 35 respondents, also reflects Anderson's (2023) concerns about organizational readiness and adaptability, though it appears to be a less pressing issue compared to funding and skills.

Enrollment Trends and Demographic Changes in African Higher Education

The survey results indicate that most institutions are experiencing growth in student enrollment, with 68.6% of respondents noting an increase. This trend reflects Bloom et al.'s (2003) and Makiwane & Kwizera's (2009) studies, which attribute increased enrollment to Africa's rapidly growing youth population. As more young people seek higher education, this demographic shift creates both opportunities and challenges for institutions. The rising enrollment is likely a significant factor driving the push for digital learning technologies, as institutions aim to meet demand through expanded and more flexible learning options, as suggested by Modise (2022) and Makoe & Olcott (2021).

The main driver of this enrollment rise is indeed the growing youth demographic, noted by 76 respondents, followed by the availability of flexible and digital learning options (43 respondents). This finding underscores the role of digital solutions in attracting students by offering more accessible and flexible education, as Gaglio Cyrielle et al. (2022) also

observed. Additionally, the expansion of program offerings, noted by 38 respondents, highlights institutions' attempts to meet diverse educational needs, which aligns with Broke-Utne's (2003) insights on the importance of broadening educational opportunities in African universities.

However, with increased enrollment come pressing challenges. Overcrowded classrooms were cited by 67 respondents, alongside inadequate facilities (61 respondents) and lack of funding (58 respondents). These infrastructure and resource shortages mirror findings from Sawyerr (2004) and Materu (2007), who emphasized that underfunding and overcrowding are common issues in African higher education, limiting institutions' ability to scale effectively. Inadequate staffing, identified by 48 respondents, adds to this strain and raises concerns about maintaining quality education, echoing Igwe et al.'s (2021) call for better workforce planning to support sustainable growth in the sector.

Private and Transnational Institutions in African Higher Education

The survey results show that private and transnational institutions are moderately to significantly involved in higher education, with 40.7% of respondents indicating moderate participation and 18.6% reporting extensive involvement. This reflects a trend noted by Oketch (2016) and Yirdaw (2014), who highlight that the rise of private institutions is helping to bridge the capacity gap in public universities across Africa. However, 39.8% of respondents reported limited involvement, suggesting that while private and transnational institutions are increasingly present, they still face challenges in achieving broader integration across the higher education landscape.

Most respondents (61.9%) believe private and transnational institutions have positively impacted education quality, while a smaller proportion (22.9%) views their impact as neutral, and only 10.2% see it as negative. This generally favorable perception aligns with research by Tsevi (2015), who notes that private institutions can drive improvements through competition, often raising standards and increasing options for students. However, the reservations expressed may relate to concerns about quality consistency, as Yirdaw (2014) and Broke-Utne (2003) warn that without rigorous standards, private institutions might vary widely in educational quality.

Key concerns among respondents revolve around access and cost, cited by 82 respondents, indicating worries about affordability for students. This aligns with findings by Sawyerr (2004), who notes that private education often comes with higher tuition fees, potentially limiting accessibility for lower-income students. Quality assurance, mentioned by 61 respondents, is another significant concern, highlighting the need for clear standards and oversight. A smaller group (28 respondents) is worried about regulation, a point also raised by Knight (2014), who discusses how fragmented policies and inconsistent oversight can hinder the benefits of private institutions, particularly in countries with limited regulatory frameworks.

These results suggest that while private and transnational institutions offer promising alternatives to public education, challenges related to affordability, quality, and regulatory oversight need to be addressed to maximize their positive impact. As Oketch (2016) and Bhujun & Perry (2024) indicate, a coordinated policy approach is needed to ensure that these institutions are well-regulated, affordable, and capable of delivering high-quality education, thereby contributing meaningfully to the growth and inclusiveness of Africa's higher education sector.

Challenges in Higher Education in Africa

The survey reveals that funding challenges remain central to the difficulties faced by higher education institutions in Africa. A significant number of respondents (81) pointed out a lack of resources for infrastructure, followed by limited private sector support (69) and insufficient government funding (49). These findings are in line with Sawyerr's (2004) and Materu's (2007) research, which demonstrates chronic underfunding and limited resources as barriers to educational development. The results suggest that current funding structures are insufficient to support the growth and improvement of essential infrastructure, affecting both public and private institutions. As Broke-Utne (2003) discusses, without substantial investment in infrastructure, African universities struggle to compete globally and to accommodate their expanding student populations.

Policy fragmentation is another major challenge, with 52% of respondents viewing it as a significant issue and 51% seeing it as moderately impactful. Only a small portion (14%) believe it has no effect. This aligns with Knight (2014) and Elidjah et al.

(2022), who found that fragmented policies across African regions hinder collaboration, accreditation, and student mobility. The general consensus that fragmented policies obstruct educational progress supports the call for more harmonized frameworks, such as those advocated by the African Union's Higher Education Harmonization Strategy, which aim to streamline policies and improve regional access and equity (Bhujun & Perry, 2024).

Infrastructure deficiencies, particularly digital infrastructure, were cited by 96% of respondents as the most critical issue. This finding aligns with Adarkwah (2021) and Anderson (2023), who underscore that the lack of reliable internet and e-learning platforms hinders digital transformation efforts in African education. Physical infrastructure, such as classrooms and libraries (75% of respondents), and gaps in laboratory and research facilities (79%) are also pressing concerns, supporting Oketch's (2016) and Makiwane & Kwizera's (2009) observations that overcrowded, under-resourced facilities affect both access and educational quality. The widespread need for digital, physical, and research infrastructure show the importance of multi-faceted investment to create environments that can support modern educational practices and accommodate growing student populations.

Policy and Innovation Results in African Higher Education

Survey results show that 61% of respondents feel their country's higher education programs don't align with international standards, which aligns with Knight (2014) and Elidjah et al. (2022) on the need for cohesive policies to improve global competitiveness. The perception that alignment with innovative sectors is mixed (68.1% reporting policy alignment and 31.9% noting a lack of it) suggests varying effectiveness in policy adaptation, with potential gaps in implementation or policy clarity (Bhujun & Perry, 2024).

Frequency of policy implementation varies, with most (63.2%) noting annual application, which highlights an intent to maintain relevance but suggests possible regional inconsistencies. The split in views on program modernization (70 finding them modern, 48 seeing them as archaic) indicates progress yet reveals that some curricula lag behind modern needs. A significant portion (33.9%) still feel disconnected from job market relevance, underscoring findings by

Oketch (2016) on the need for enhanced curriculum-market alignment.

Strong support for public-private partnerships (93%) and regional cooperation (91%) aligns with Mabizela (2005) and Mugume & Luescher (2015), emphasizing collaboration as a solution to infrastructure and funding issues. Investment in digital infrastructure (85%) and unified policies (66%) reflect recognition of digital and policy cohesion as critical to long-term education reform.

Finally, there's a high expectation for innovation (62 seeing an extensive role) in reshaping higher education. Digital learning and public-private models received near-unanimous support, reinforcing research by Modise (2022) and Makoe & Olcott (2021) that digital platforms and partnerships hold the most promise for accessible, sustainable education reform in Africa.

Critical Factors Shaping the Future

The responses to the question regarding the critical factors shaping higher education in Africa over the next decade reveal a multifaceted perspective. The emphasis on socio-political factors and technological advancements aligns with current literature that highlights the importance of addressing both external pressures and internal capacities for effective educational transformation (Modise, 2022; Nwachukwu Prince Ololube et al., 2007).

Access to quality technology and digital tools is essential, as noted by participants who recognize that bridging the digital divide is crucial for improving educational outcomes (Mirazchiyski & Černe, 2020). The call for quality assurance and unified curriculums reflects the challenges of policy fragmentation identified in previous studies (Bhujun & Perry, 2024), underscoring the necessity for a coordinated approach across institutions and nations. The advocacy for innovative teaching techniques aligns with findings that suggest a shift towards more adaptable and engaging educational practices (Gaglio Cyrielle et al., 2022).

Collaboration between public and private sectors and partnerships among African countries emerge as critical elements for teacher training and securing adequate funding, resonating with previous research that emphasizes the need for investment in educational infrastructures (Materu, 2007; Sawyerr, 2004). This aligns with the idea that addressing systemic challenges requires collective action and

resources to develop a more integrated higher education system.

Suggestions for Improvement

Respondents offered a range of suggestions for enhancing higher education, reinforcing themes prevalent in existing literature. The call for professionalization of programs that blend theoretical knowledge with practical training aligns with the need to adapt educational offerings to meet the demands of a dynamic job market (Igwe et al., 2021; Kanyip, 2013). Digitalization of educational systems and development of e-learning platforms echo findings that suggest online learning is a vital pathway for increasing accessibility and flexibility (Adarkwah, 2021; Li, 2023).

The emphasis on aligning curricula with job market needs resonates with studies that highlight the gap between education and employment outcomes (Oketch, 2016). Respondents also advocate for merit-based admissions and increased scholarships for underprivileged students, reflecting the need to improve equity and access in higher education, which is a growing concern in the African context (Lebeau & Oanda, 2020).

Moreover, the insistence on good governance and transnational training for lecturers aligns with calls for better management practices and professional development to enhance teaching quality (Knight, 2014). The focus on fostering entrepreneurship within academic programs connects with broader discussions on preparing graduates for the realities of the modern economy (Makiwane & Kwizera, 2009).

The need for harmonization of curricula across regions and enhanced funding for research and educational initiatives reflects the ongoing challenges of policy fragmentation and the urgent need for cohesive educational strategies (Watson, 2009). This mirrors previous research that advocates for regional cooperation and investment to build a resilient higher education system in Africa.

Conclusion

This study offers a comprehensive examination of the current state and future prospects of higher education in Africa, highlighting critical factors and challenges that shape the landscape. The findings indicate that while there has been a notable increase in student enrollment and a gradual adoption of digital technologies, significant disparities and challenges

remain. Infrastructure deficits, funding limitations, and the need for quality assurance are prominent issues that institutions face. The role of private and transnational institutions has been recognized as increasingly influential, although concerns about access, cost, and quality persist. Furthermore, the study underscores the importance of aligning educational programs with international standards and job market needs to enhance employability and prepare graduates for the evolving economic

topography. Respondents identified socio-political factors, technological advancements, and the need for collaboration between public and private sectors as key determinants in shaping the future of higher education in Africa. The emphasis on innovative teaching techniques, the professionalization of programs, and improved governance reflect a collective vision for a more responsive and equitable educational system.

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THE NIGERIAN UNIVERSITY EDUCATION BLUEPRINT 2019-2023: LESSONS FOR TRANSFORMING HIGHER EDUCATION IN AFRICA FOR STABILITY, LOCAL RELEVANCE AND GLOBAL COMPETITIVENESS

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Abstract

It is significant that most of the problems/challenges identified in the study on the Ghanaian higher education system were also implicated in a similar engagement with Nigeria's tertiary education in studies that led to the development of the Nigerian University Education Blueprint 2019-2023, which was further reviewed midterm in 2022. The manifestations of these deficiencies are found in the mismatch of societal expectations and the fitness-for-purpose of products of higher education in mitigating the myriad problems of underdevelopment of Africa, contrary to the educational aspirations of the "Africa we want". Yet we have a mixture of successes that are not built upon and accentuated, in contrast to persistent failings which continue to fester. Such vistas of successes include the combined interventions of the 7 Foundations in the partnership for higher education in Africa (PHEA), including the Carnegie Corporation of New York, from 2001-2010 and till now, the exploits of the Africa Centers of Excellence (ACEs), since 2014, now numbering over 75, and the progress of the AAU. Reflecting and building on these successes should sustain their significant impacts and enable the tweaking of policies for sustained growth and progress.

It is therefore apposite to extend the insights of the results for Ghana and Nigeria to embrace other such insights from the continental higher education summit in Dakar in 2014, the successes of PHEA and the ACEs, in formulating frameworks for transforming universities in Africa for the 21st century continental context and in line with Africa Agenda 2063. This is the intended goal of this paper which presents holistic perspectives on the progress and subsisting challenges of higher education in Africa and offers pragmatic suggestions on what can be done by all vested interests, appropriate authorities and stakeholders, as a way of celebrating the landmark study by GAAS.

Keywords: Higher education, stability, relevance, competitiveness, Nigeria.

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Preamble

I would like to acknowledge the great honour of being invited to join you at this special event. I hold the conviction that this convocation is well conceived after the very exciting study by your Academy. I have elected to speak on “*The Nigerian University Education Blueprint 2019-2023: Lessons for Transforming Higher Education in Africa Stability, Local Relevance and Global Competitiveness*” in view of Africa’s concern for its stability, global competitiveness and economic development.

I acknowledge the work of the GAAS on the review of the state of tertiary education in Ghana today. I was privileged to have been in the core committee of a similar exercise in Nigeria a few years ago. After serving my 5-year tenure as Vice Chancellor at Obafemi Awolowo University, Ile-Ife, incidentally my alma mater, and my 2-term 6-year tenure as the Secretary General of the Association of Vice Chancellors of all Nigerian Universities, as well as the Committee of Pro-Chancellors, and having also served in the Strategy Advisory Committee (STRADVCOM) on higher education, I can claim a rather privileged understanding of the tripartite differentiated universities in Nigeria, namely Federal, State and Private Universities.

It is significant that most of the problems/challenges identified in the study on the Ghanaian higher education system were also implicated in a similar engagement with Nigeria’s tertiary education in studies that lead to the development of the Nigerian University Education Blueprint 2019-2023 (Rasheed, 2018), which was further reviewed midterm in 2022. The manifestations of these deficiencies are found in the mismatch of societal expectations and the fitness-for-purpose of products of higher education in mitigating the myriad problems of underdevelopment of Africa, contrary to the educational aspirations of the “Africa we want”. It is also necessary to relate the findings and prescribed solutions in both Nigeria and Ghana to the dominant themes of the 2015 continental summit on higher education in Africa, which was held in Dakar, Senegal and in which both Ghana and Nigeria universities and academics participated. It was at that conference that the Association of African Research Universities (ARUA), which has made significant contribution to the research and innovation ecosystem in Africa, was launched (TrustAfrica, 2015). The key actions recommended by the summit are highlighted in Box 1, while detailed summaries are available in the summit report (TrustAfrica, 2015).

Many universities in Africa strive “to be a 21st Century University or even a World-Class university (Salmi, 2009). For example, a university in Nigeria wants to be “a foremost institution that moves manpower development in the direction of self-apprenticeship; a first-class University in research, knowledge, character and service to humanity, and to provide knowledge and skills for self-reliance in a conducive environment where teaching, learning and research can take place”.

Nigerian Universities in Need of Rapid Revitalization

There has been a deluge of concerns for the fate and health of the Nigerian university system for quite some time from various individuals, groups (such as the Committee of Vice Chancellors (CVCNU), the Academic Staff Union of Universities (ASUU), the Nigerian Economic Summit Group (NESG), employers of labour, Non-governmental and Civil Society Organisations, Development partners and Donor Agencies, even the African Union, and many more. These concerns were justified, as revealed by the NEEDS Assessment undertaken by the Federal Government in 2012/2013 and in an in-depth discussion of the trajectory of the rise, ovation, fall and recovery efforts of the University of Ibadan since 2001 (Olayinka and Adedeji, 2013). The National Council on Education, the Federal Ministry of Education (FME) and the National Universities Commission (NUC) are not left out in this regard, and there have been several responses. The Committee of Vice Chancellors (CVCNU), in partnership, with some continental bodies, such as TrustAfrica, held a Nigerian higher education summit in Abuja, in November, 2016, that gave some incisive direction as to what could be done. The summit was pragmatic and productive resulting in a policy brief and action plan that served as reference for follow-up actions and plan for revitalizing the Nigerian higher education system (Faborode and Edigheji, 2017). Eventually, a Strategy Advisory Committee was inaugurated by the NUC in 2018 with the specific mandate of coalescing all the outputs of previous workshops, seminars, summits into a viable action plan for the rapid revitalization of the Nigerian higher education institutions.

Box 1: Declaration and Action Plan from the 1st African higher education summit on Revitalizing Higher Education for Africa's Future, March 10-12, 2015, Dakar, Senegal.

Recommended Actions:

- 1. Expand higher education** to accommodate the growing population and also the needs for Africa's inclusive development
- 2. Promote diversification, differentiation, and harmonization of higher education systems** at the national, institutional and continental/ regional levels
- 3. Increase investment in higher education** to facilitate development, promote stability, enhance access and equity; develop, recruit and retain excellent academic staff and pursue cutting-edge research and provision of high-quality teaching.
- 4. Pursue excellence** in teaching and learning, research and scholarship, public service and provision of solutions to the development challenges and opportunities facing African peoples across the continent.
5. Commit to building capacity in **Research, Science, Technology, and Innovation.**
6. African governments and regional economic communities should develop deliberate policies to **support higher education research, innovation and their uptake** as a deliberate development policy.
7. Pursue national development through **business, higher education and graduate** employability: Despite the rapid expansion of higher education enrolments, there are serious concerns about the ability of Africa's universities to produce the kinds of graduates who can drive the continent forward.
- 8. Ensure that Higher Education is at the centre of nation building processes and nurturing of democratic citizenship:** As enshrined in the relevant sections of African Charter on Human and Peoples Rights, 1981 and in the AU's Agenda 2063, the continent seeks to deepen the culture of good governance, democratic values, gender equality, respect for human rights, justice and the rule of law.
- 9. Mobilize the Diaspora to be engaged in transforming Africa's higher education sector;** Turn Africa's huge brain drain into brain gain through rewarding brain circulation.

(Source: Trust Africa, 2015).

Background to the Nigerian University Education Blueprint (2019-2023)

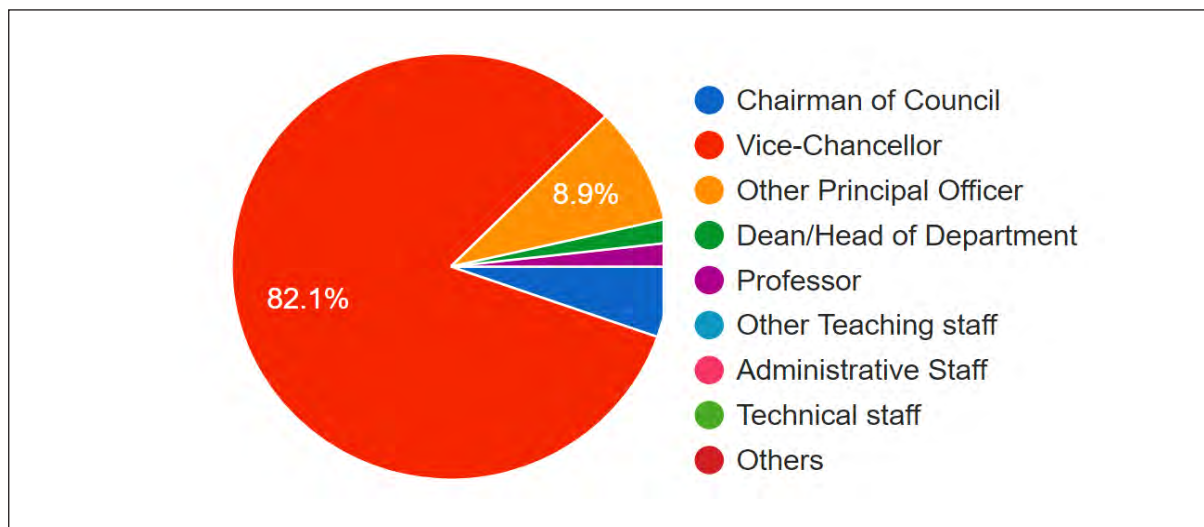
The first task by the Strategy Advisory Committee (STRADVCOM) was to undertake a situational and SWOT analysis of the past and present state of the Nigerian university system (Table 1), leveraging on a participatory and inclusive engagement with the operators of the sector including the Pro-Chancellors and Councils, Vice Chancellors and Senates, the Unions and all academics, as well as other key stakeholders who had expressed their concerns (Fig 1).

Table 1: SWOT Analysis of the Nigerian higher education sector

Strengths	Weaknesses
- Academically-rigorous curriculum - Better-quality intakes through post-UTME - Increased investment in facilities especially new technologies and buildings by TETFund - Increased investment in research and staff training by TETFund	- Large classes not predisposing to hands-on practical work - Curriculum not reflective of 21st-century skills - Teachers with low digital literacy skills - Handicap of power supply - Social-media distracted students, away from reading course-related books
Opportunities	Threats
- New dynamism in NUC to update the curriculum - Re-starting of the Virtual Institute for Higher Education Pedagogy.	- Incessant strikes by staff and student unions - Difficult of many teachers to switch from lecture-only mode.

(Source: Rasheed, 2018)

Fig. 1: Percentage of university leaders surveyed on the most pressing challenges



(Source: Rasheed, 2018).

The outcome was a catalogue of challenges which were then defined into goals and milestones towards producing a Blueprint, 2019-2023. The areas reported to be challenging the system (in rank order) and hence in need of reform were (see full analysis in Rasheed, 2018: Blueprint):

1. Facilities for teaching, learning and research
2. Funding
3. Teacher quality and quantity (including quality of professors)
4. Governance (including stemming the tide of strikes)
5. Quality and relevance of graduates
6. Access

7. Research and postgraduate training
8. Academic corruption and other social vices
9. Regulation by NUC and professional bodies
10. limited use of ICT in universities operations
11. Low skills development and entrepreneurship
12. Gender issues.

The full list and the pertinent questions that relate to each are summarised in Table 2.

Table 2: Pressing Challenges and Pertinent Questions for the Nigerian University System

S/N	Challenge / Pressing Issue	Pertinent Questions
1.	Access	How do we enrol more students without compromising quality?
2.	Relevance of curriculum	How do we make university curricula relevant to the emerging needs of the Nigerian society and to national development
3.	Funding	How do we sustainably fund the Nigerian university system beyond theoretical models?
4.	Teacher quality and quantity	How do we meet the 30% shortfall in teacher numbers, and how do we ensure quality of teachers, especially professors?
5.	Governance	How do we improve the governance structure and functions of public and private universities to enhance efficiency and diminish unethical practices (ethnicity and parochialism)?
6	Instability and strikes	How do we ensure better learning and living condition for students, and better working conditions and prospect for staff? How do we enhance the handling of industrial disputes and reduce disruptions and eliminate strikes?
7.	Knowledge infrastructure (teaching, learning and research facilities)	How do we improve the resourcing of universities to make them compare well with global standards and be less like glorified secondary schools
8.	ICT savvy and enabled system – all staff and students	How do we prioritise equipping and training of the work force and students in ICT use? How do we ensure cheap access to adequate bandwidth and e-resources? How do we leverage ICT in all our processes of teaching, research and civic networking?
9.	Academic corruption, other social vices and unethical conduct, gender -based misbehaviours	How do we reduce/eradicate all types of academic corruption? How do we enshrine and mainstream gender parity and curb sexual harassment, etc
10.	Efficient regulatory service	How should the NUC be structured and empowered to deliver on a re-invigorated regulatory mandate of credible accreditation and assurance of standards? How do we ensure adequate monitoring and evaluation of policy implementation and compliance?

11.	Graduate quality	How should the curriculum be delivered to ensure production of nationally relevant and globally competitive graduates? How do we improve reading culture of our students? How do we enhance the use of technology for producing quality graduates?
12.	Enhanced PG Training and research output /research primacy	How do we improve research capacity and accentuate research output, and enhance intellectual property?
13.	Graduate functional skills level and entrepreneurial engagement	How do we imbue our graduates with critical innovation and survival skills, and become more entrepreneurial and hungrier to change the world around them?
14.	Research results uptake and Formation of university-industry start-ups	How do we bridge the chasm between the academia, industry and government, and ensure better uptake of research output, innovations and products? How do we ensure that we impact on the civil society and national development?
15.	Local relevance and global visibility and competitiveness	How do we overall make our universities more relevant to our national development, and also more globally comparable in contributing to human development and be more competitive?

(Source: Rasheed, 2018).

Key Outcomes of the 2016 CVC Higher Education Summit

It is pertinent to note that the November 2016 summit of the Committee of Vice Chancellors of Nigerian Universities which was organized for revitalizing the Nigerian higher education system, as a follow up to the African continental summit held earlier in Dakar, Senegal (TrustAfrica, 2015; Faborode & Edigheji, 2017), had set the tone for the work of the NUC Strategy Advisory Committee. From the outcome of the summit, the following were set as priority areas for action:

- a. Promotion of diversification and differentiation in the system by providing proper conceptual administrative guidelines, and a harmonized legal framework for HEIs and the sector to engender strict compliance with extant statutes to prevent mission creep and distortion of national development plans
- b. Revision of laws and statutes of HEIs and the Nigerian education system in relation to the regulatory and quality assurance powers of NUC, NBTE and NCCE, and the operational powers of JAMB and TETFund, which in particular, would enable all HEIs have unfettered access to its funding intervention in favour of overall quality education
- c. Leveraging ICT as an enabler of the relevance of HEIs and driver of national transformation and sustainable development.
- d. Nurturing and sustenance of Centers of Excellence as game changers and anchors/catalysts of national innovation value chain through their unique commitment to research and innovation excellence and promotion of global scholarship.
- e. Promotion of HEI's partnership and synergy with industry, civil society and the natural environment for a better world, through commitment to the SDGs as a core mission, and enabler of a new paradigm of entrepreneurial empowerment of their products for better uptake and transfer of the output of their research.
- f. Widening access to HEIs and strengthening institutional/programme accreditation and quality assurance/quality control mechanisms and procedures in order to restore confidence and acceptability to the output/products (graduates, research output and technology transfer/civic engagement) of Nigerian universities and enhance their local and global relevance and competitiveness, and

- g. Lastly, ensuring sustainable funding of education, especially higher education, through determined increased investment by proprietors at all levels, enhancing the capacity of institutions at internal fund generation and acceptance of the principle of shared burden of funding by all stakeholders.

Revitalisation Goals and Milestones

The NUS-NUC developed goals and milestones for rapid revitalization of the system. The fourteen strategic goals are as presented in Box 2.

Box 2: Strategic Goals of the Blueprint 2029-2023

1. By 2024 (5 years after commencement in 2019), access to university education should have increased by a factor of 20% over 2018 figures.
2. By 2024, the curriculum of Nigerian universities should be rated among the best three in Africa in terms of its relevance to producing nationally and regionally-relevant graduates who are high-level human resources for delivering on Africa's Vision 2063 and addressing global SDGs.
3. By 2024, at least 30% of facilities for teaching, learning and research should have been upgraded to meet international standards and maintained thereafter.
4. By 2024, the gap in the number of teachers needed in the Nigerian university system and those in post should have been reduced from 30% to 20%.
5. By 2024, the quality of graduates from Nigerian universities should be improved by at least 20% as captured in feedback from employers and users of products of the system.
6. By 2024, scholars in Nigerian universities should be among the top three in productivity as measured by national and global productivity standards and reflected in relevance to solving Nigeria's socio-economic challenges.
7. By 2024, NUC should introduce enforceable minimum standards in governance that will ensure at least 10% efficiency in the university system.
8. By 2024, the incidence of academic corruption in Nigerian universities should have reduced by at least 10% and remain on the decline up to 2025 and beyond.
9. By 2024, a sustainable funding model should have been approved at all levels and implemented via appropriate instruments of federal and state governments.
10. By 2022, NUC should have been re-structured and empowered to deliver better on its regulatory functions.
11. By 2024, at least 80% of universities should have adopted ICT-driven teaching, research and institution management systems, and running an efficient research and education network (NgREN). This is considered key to accelerating change that will enhance their local relevance and global competitiveness.
12. By 2024, incidence of forced closures and strikes in Nigerian universities should have been reduced by 40% of its current level.
13. By 2024, the functional skills level and entrepreneurial engagement of Nigerian graduates, relating to wealth creation capabilities would have been raised by at least 40 % of current levels.
14. By 2024, the level of uptake of research results from Nigerian universities and the formation of start-ups arising from university-industry research and development networking working would have been raised by at least 25%.

Source: Rasheed, 2018

Local Relevance and Global Competitiveness

Strategic goal 5 on the quality of graduates from the system relates to Chapter 3.5 of the Blueprint titled “Producing Nationally-relevant and Globally-competitive Graduates” (Rasheed, 2018). Quality of graduates is at the heart of the mission of universities, and it is impacted by not just teaching and learning excellence alone, but also by the quality of research and civic engagement by academics; they all make up “total/overall teaching excellence”. Hence, in recognition of the concerns expressed regarding the depressing quality of graduates in the Nigerian university system, the NUS/NUC revitalisation plan proposed seven specific strategic objectives, the successful attainment of which will ensure that graduates from Nigerian universities demonstrate greater degree of national relevance and global competitiveness. From No 6 in Table 2 (pressing challenges) and also from the strength, weakness, opportunities and threats (SWOT) analysis carried out, it is clear that in addition to other generic issues that will affect quality in many other climes, the incessant and ferocious strike actions and disruptions of the academic calendar is very strongly implicated in explaining some of the misfortunes of the NUS, since stability and peace are very important for progress to be substantially recorded.

Strikes and Nigeria University System stability

Instability has indeed become a prominent feature of the Nigerian university system in the last few years, with the number of national and local strikes in the various universities, especially the public ones becoming uncountable. An objective assessment of the detrimental impact of strikes over its “gains” shows that strikes inflict much more lasting and permanent structural damage to the system. Empirical evidence has shown that universities with more stable calendar, such as private universities, given the same level playing field, would outperform their perpetually striking counterparts. Academics must re-examine the strike option as the instrument to settle industrial disputes at the slightest provocation. There must be other equally potent creative ways to put pressure on government officials to see things more clearly and discerningly. For example, the formulae for ETF/TETFund intervention fund, that has become strategic in resolving the dilemma of government’s commitment of meagre resources to education, came out of serious soul-searching for solutions by thinking out-of-the-box in the FGN-ASUU negotiations of 1992. Such novel thinking must be preferred to strikes in making the system more resilient and stable in the interest of students and quality university education.

Curriculum Review

The review of the curriculum was considered a most important component of the revitalization agenda, and it was undertaken from 2018, following the review of the BMAS documents by various panel of experts which were forwarded to Nigerian universities and other relevant stakeholders (professional and regulatory bodies as well as the private sector) for their comments and inputs. Comments were harvested from 140 universities. All the harvested comments from the universities were reviewed by a different set of experts constituted from the academia (professors), professional and regulatory bodies, and the private sector for each programme. This process was stalled by the outbreak of COVID-19 in 2020 but resumed in the first quarter of 2021 with a team of experts in the various 228 programmes in the NUS to review the curriculum including special experts for general studies and entrepreneurship. Panels were thereafter constituted for the exercise which informed the training of about 400 staff of NUC (discipline and programme representatives), on the technicalities of using the Zoom platform for the conduct of the curriculum review. Same was done to train discipline chairpersons, reviewers and NUC representatives on how to appropriately deploy the platform for the review process. The documents emanating from the review were then subjected to various layers of editorial reviews based on established standards before their eventual publication in both hard and e-copies. The outcome is the core curriculum and minimum academic standards (CCMAS) for the 17 disciplines and the 228 programmes. Table 3 explains the evolution of the CCMAS, while two sample outputs of the 17 new Disciplines are highlighted in Fig 2.

Table 3: Evolution and Features of the CCMAS in the Nigerian University System

Date	Development	Attributes/Features
1989	MAS - Minimum Academic Standards	➤ Content-based ➤ 100% Centrally-Determined by the NUC and NUS. ➤ 13 Disciplines
2001	BMAS – Benchmark Minimum Academic Standards	➤ Content-based + outcome-based benchmark statements for programmes. Provides requisite flexibility and innovativeness consistent with Institutional Autonomy. ➤ 100% Centrally-Determined by the NUC and NUS ➤ 14 Disciplines ➤ Courses embraced: Compulsory, Required and Electives. ➤ Universities rarely add courses, taking BMAS to be maximum, unfortunately. ➤ GST alone: 36 units
2022-2023	CCMAS – Core Curriculum and Minimum Academic Standards	➤ Content-based + Learning outcome-based benchmark statements for each programme and for each course. ➤ 70% Centrally-Determined by the NUC and NUS ➤ 30% Institutional ➤ 17 Disciplines ➤ Courses embraced: Only Compulsory courses. ➤ Beyond CCMAS, universities can add more courses (Required and Electives) to create own Senate Approved Curricula. So, unlike in the BMAS, Minimum is truly minimum. ➤ GST & Entrepreneurship: only 12 units

Source: NUC CCMAS Sensitization Workshop Keynote, Aug 2023

Significant generic and unique features of the CCMAS

The distinct features of the CCMAS are in its name, sharing formula, GST and entrepreneurship, learning outcome for not just programmes but also for all courses on offer, skills and soft skills acquisition, ICT-driven curriculum and of course an increase in the number of disciplines. These are itemized below:

- i. General Studies (GST) and ENT courses are six and contribute only 12 Credit Units, enough to give students wide-world views as well as practical capabilities in entrepreneurship, but without Overcrowding the Core Compulsory Courses
- ii. Concomitantly, 21st century as well as employability skills were keenly emphasised to help shape students' ability in terms of technical, analytical and critical thinking, presentation and other relevant skills, as well as, personal habits and traits that will enhance their employability in the 21st century world of work.

Fig. 2: Sample covers of the CCMAS document for 2 of the 17 Disciplines



Source: CCMAS Website (www.nuc.ccmass.org.ng)

Research Centres of Excellence

There are different types of Research Centres of Excellence (RCEs). They can be global like the World Bank ACEs (Box 3) and IITA; regional, like the Pan African University (PAU) established by the African Union Commission with 5 nodes in the regions of the continent, namely University of Ibadan (West African Node), Jomo Kenyatta Agricultural University, Kenya (East African Node), University of Stellenbosch (Southern African Node), National Institute for Water and Energy, Algeria (Northern African Node), and University of Dschang, Cameroon (Central African Node). There can also be National Centres of Excellence, or they can indeed be Institutional. We note that the setting up of ‘excellence centres’ or ‘centres of excellence’ is an emerging practice, enabling the institution of special research entities which are funded to pursue research in certain specified areas that are considered germane to the developmental needs of a country or region. It is noteworthy, that “the excellence centre scheme constitutes an efficient way of allocating a nation’s education budget because it prioritizes research efforts and encourages competitiveness, as well as the following by-products:

- i. enhancing the participating institution’s research competence or competitiveness;
- ii. enhancing the institution’s (and by extension the country’s) visibility in the world of knowledge and innovation; and
- iii. improving the institution’s international ranking.

It is clear from the above brief exposition that the ACEs would not only be catalyst of the innovation enterprise, but they may also end up being a critical driver of the African innovation value chain, with their even spread all over the various sub regions of the continent. It is thus necessary that host countries covet these emerging world-class centres/institutions jealously and commit to their sustainability beyond their initial funding by donor and/or development agencies. In a way, because of the independent, transparent and competitive mode of their emergence, beneficiary countries have been assisted in identifying potential “world-class” institutions/

universities, that should be so further nurtured into maturity as true Centres of Excellence, with all the implied attributes.

Box 3: The 2018 Nigerian African Centres of Excellence (ACE Impact)

1. ACE in ICT Driven Knowledge Park, Obafemi Awolowo University, Ile-Ife
2. Centre for Oilfield Chemicals Research (CEFOR), University of Port-Harcourt
3. ACE for Genomics of Infectious Diseases, Redeemer's University, Ede
4. ACE on Neglected Tropical Diseases and Forensic Biotechnology, Ahmadu Bello University, Zaria
5. ACE in Reproductive Health and Innovation, University of Benin
6. Centre for Dryland Agriculture, Bayero University, Kano
7. Centre for Food Technology and Research (CEFTER), Benue State University, Makurdi
8. Africa Center of Excellence in Applied Informatics and Communication – Covenant University, Ota
9. Centre for Public Health and Toxicological Research (PUTOR), University of Port Harcourt
10. Africa Center of Excellence for Sustainable Power and Energy Development, University of Nigeria Nsukka
11. Africa Centre of Excellence on Technology Enhanced Learning (ACETEL), National Open University of Nigeria (NOUN)
12. African Center of Excellence in Future Energies and Electrochemical Systems (ACE-FUELS), Federal University of Technology, Owerri
13. Africa Center of Excellence on New Pedagogies in Engineering Education (ACENPEE), Ahmadu Bello University, Zaria
14. ACE for Drug Research, Herbal Medicine Development and Regulatory Science (ACEDRHMDRS), University of Lagos
15. Africa Centre of Excellence for Mycotoxin and Food Safety - Federal University of Technology, Minna
16. Center for Population Health and Policy (ACEPHAP), Bayero University, Kano
17. Centre of Excellence for Innovative and Transformative STEM Education (CITSE), Lagos State Univ.

Source: Author's compilation

The emergence of the World Bank sponsored African Centres of Excellence, 10 ACEs in 2014 (see Table 4 for full list of the old 10 Nigerian ACEs) and their performance has ignited hope that we really can have top rated research institutes that will be able to compete favourably with others in Africa and indeed the world.

Table 4: The 2014 Nigerian African Centres of Excellence (ACE I)

S/N	Lead Institution	Project Title	Scientific Discipline
1	Redeemers University, Ede	ACE for Genomics of Infectious Diseases	Health
2	African University of Science and Technology, Abuja	PAN African Materials Institute	STEM
3	Federal University of Agriculture, Abeokuta	Centre for Agricultural Development and Sustainable Environment	Agriculture
4	Ahmadu Bello University, Zaria	ACE on Neglected Tropical Diseases and Forensic Biotechnology	Health
5	University of Jos, Jos	Phytomedicine Research and Development	Health
6	University of Benin, Benin City	ACE for Reproductive Health and Innovation	Health
7	University of Port Harcourt, Port Harcourt	ACE Centre for Oil Field Chemicals	STEM
8	Bayero University, Kano	Dryland Agriculture	Agriculture
9	Obafemi Awolowo University, Ile-Ife	ICT-Driven National Science Technology and Knowledge Park	STEM
10	Benue State University, Makurdi	Centre for Food Technology and Research	Agriculture

Source: Author's compilation

The ACEs were to be developed as top-rated research universities, in consonance with the notion of world class universities. In a comprehensive report prepared by the NUC on the 10 Nigerian ACEs in November 2016, it was noted that they had enrolled a total of 2,413 PG students including 454 regional students, a clear departure from the past in spite of our subsisting national security challenges. They had generated US\$ 6,377,917.84 from industry collaborations, and have top-rated equipment for all Nigerian staff and PG students to have access, and the number of publications emanating from them had grown considerable, including in top impact journals such as *Science*, *Nature*, *New England Journal of Medicine* and *Cell*, as well local journals that have been strengthened to global standards and are hence of very high quality. The CVC and NUC regularly shared/circulated their assessment reports to all universities, so that their staff and students can avail themselves of the top-class facilities available for research, data handling and global networking at these centres. It is also noteworthy that a good number of

the centres have mounted capacity enhancement trainings and workshops, as well as offer competitive scholarships to equip the next generation of scientists and academic leaders with skills that will enhance their productivity and fulfilment.

The third series of ACE-Impact awardees are specially intended to build on the achievements of their predecessors. In the particular case of the OAU centre, OAK-Park, which was upgraded to a centre of excellence in engineering design education to produce highly competent design engineers, the accomplishments in the first phase of the grant cycle included: establishing 5 new postgraduate disciplines (Computer Engineering, Intelligent System Engineering, Information System, Computer Science, and Software Engineering); enrolment of 148 postgraduate students (103 National, and 37 Regional) into the 5 disciplines; establishment of a business incubation centre (about to be commissioned), with the emergence of 5 ICT spin-off companies. Others are deepening industry outreach

and networking programs (152 postgraduate students and 60 faculty participated), with enhanced industry integration into its software development activities; building of critical university knowledge infrastructure by setting-up six standard research laboratories; and establishing 14 industry-targeted short-term courses, based on feedback. Most significantly, the World Bank was persuaded to support the building of Innovation incubation hub and laboratories, a conference facility, canteen and other structures for the centre. One is indeed very proud of these accomplishments, which have altruistically prepared OAK-Park to lead the development of a new crop of critically minded practice-savvy engineers who will signpost a new dawn for Africa.

The FGN-NUS-NUC 2050 Blueprint for Development

The overall goal of the 2019-2023 Blueprint that is the subject of this presentation, can be construed to imply a project to strengthen the Nigerian University system, comprising of the universities and the coordinating agency the NUC, in order to prepare them for the nationalistic purpose to serve Nigeria and prepare it to face the 2050 doomsday predictions of doubling population. It is estimated that by 2050, Nigeria's population will be approaching 398 million, making it the 3rd largest country after India and China and upstaging the United State of America. So, STRADVCOM again led the universities to come to the rescue of the nation. Several sectoral issues were identified and a group of universities based on their comparative strength assigned [See Annex I for full details of the 14 key sectoral issues (STRADVCOM, 2022)] to develop original think papers defining the challenges, undertaking a situational and SWOT analysis, identifying gaps and proposing action plans on how Nigeria can exploit knowledge to respond to the challenges of food security, power, education, health, social infrastructure, etc The responses of the university system has been very encouraging and we are indeed very proud of the quality of inputs that were received, synthesised and collated and reviewed by experts/professors in the various sectors. This is a salutary contribution of the NUS to national futures planning, and it is at the heart of the local relevance of the NUS.

Several levels of stakeholders' participation were built into the process of producing the final 2050 blueprint. The initial submission from the allocated universities were synthesised and collated into a single summary

document, that were reviewed by all identified experts in the field. The STRADVCOM coordinator incorporated their views, questions and suggested modifications after which there were several meetings with Vice Chancellors, and professors in the different areas as well as industry practitioners and cognate professional bodies and sectoral groups such as the chambers of commerce and industry, the Nigerian Economic Summit Group, etc to incorporate their views to produce a final clean copy. There were presentations to the various cognate ministries and National Economic Team and the National Council of State, and ultimately the Federal Executive Council and the two houses of the National Assembly. The 2050 Master Plan was then produced as a copy, while each sectoral summary and the original individual inputs by the various universities were also bound sector-by-sector to avail those who wished to undertake in-depth study to have access to all the databases and background information. The beauty of this approach is that an apolitical, sustainable and knowledge-and-evidence based plan emerged to guide national planning and development between now and year 2050.

African Universities and Continent Building

Some Successful Interventions in Higher Education Reform in Nigeria and Africa

It is appropriate to review some interventions in the African higher education space in the last 2-3 decades to inform what works or not as a guide to practical policy options for the future. In this connection, it may not be right nor charitable to view every intervention by government or development agencies from the prism of "the World Bank or Breton Woods institutions or imperialists", allowing us an objective strategy of adopting measures to exploit any positive opportunities they present to maximum advantage. The higher education revitalization agenda for the University of Ibadan (UI) (in Figure 1) and other lucky Nigerian/African institutions started at the dawn of the 21st century by the Partnership for Higher Education in Africa (PHEA), which was a consortium of 7 American Foundations, including the Carnegie Corporation of New York, MacArthur, Ford, Bill and Mellinda Gates foundations, etc. Between them, the Foundations invested a total of \$440 million in 9 countries with combined population of 459 million, impacting 54 universities directly over 10 years [see PHEA Africa Summary Impact Sheet in Appendix II

(Lewis et al, 2010; Lidow, 2011)]. The built intellectual capacity of the institutions had strengthened them, making them more resilient and upward mobile, such that almost all of them (OAU, UNIPOINT, UNIBEN, ABU, BUK, UNIJOS) were successful in winning the bid and securing one of the African Centers of Excellence (ACEs) in the 2014 bidding. UI was already hosting the West African Node of the Pan African University. Similarly, the result of the 2018 bidding, as displayed in Table 3, shows a total of 17 ACEs for Nigeria, with 7 of the old ones renewed and 10 new ones approved. For Nigerian universities, this was exceedingly good news. A cursory look at the list again reinforces the strengthened position of the earlier PHEA-impacted institutions (ABU, BUK and UNIPOINT, now with 2 centres each, OAU, 1st in the list, and UNIBEN retained their ACE I).

What is more significant is that the research in all the ACEs address critical national and regional challenges, that are also of global interest. Hence just because these centres derive their first funding from the World Bank and other collaborating development agencies should not cause them to be viewed from such a prism. Rather, ACEs are strong catalysts for the emancipation of a strong African innovation value chain (Bamiro, 2004; Faborode, 2017; 2018) as detailed later (see Tables 6 & 7). It is left to the NUS and indeed Nigeria for the Nigerian ACEs and Africa for all the ACEs in all the regions to deploy and utilize them for Africa's development. A good analogy here is for us to say that because the International Institute for Tropical Agriculture in Ibadan (IITA), as part of the CGIAR institutions is an imperialist institute and hence the product of its research should not be touched by Nigeria and Africa, whereas since its inception and particularly in the last few years, the outcome of work at IITA has significantly impacted the current revival of agricultural productivity in Nigeria and indeed the whole of Africa. Several researchers for critical research and advanced degrees in many of our institutions owe the success of their endeavour to the facilities at the IITA. Again, it is patently senseless and quite disingenuous to 'throw out the baby with the birth water' of needless and self-deluding arrogance. The strategy that does work is to embrace collaboration in several dimensions, be at the fore front of new scientific and technological movements by having superior technical and soft survival knowledge and skills, demonstrate transformational leadership in research and development, partner with all possible sources across various regions, including exploiting the inherent potentials of African Diaspora

(as India, China, Japan, Korea and Singapore have done), and harness all the outputs for the development and transformation of our nation and Africa.

Universities leading the sustainable development agenda

World university bodies, including the International Association of Universities (IAU), Association of Commonwealth Universities (ACU), the Association of African Universities (AAU), and indeed the African Union in its Agenda 2063 have keyed into SDG commitments. Nigerian universities, as members of IAU, ACU and AAU must necessarily follow suit and lead Nigeria's commitment to the SDGs. A 2018 article in the University World News was very insistent on this charge, thus:

"To deliver the badly needed SDGs and targets, we need trustworthy, ethical, honest and impartial government institutions that exercise public power, oversee policies fairly and take into account their range, complexity and occasional incompatibility. These institutions are much more likely to promote trust and social capital which in turn improves health and well-being. Tackling corruption is vital. We also need higher education institutions that can teach the crucial necessary skills we have highlighted. These should be taught and implemented throughout people's entire life span. It is crucially important that leading higher education institutions start leading by example to increase future decision-makers' motivation and ability to act ethically" (Levi and Rothstein, 2018).

They went further:

"Recognising the university sector's potential and responsibility to help shape the moral contours of society for the better and given the societal benefits from increased social capital, we ask universities and institutions of higher education to shoulder their role as key agents of change, as stated in the Compostela Group of Universities' Poznan Declaration of 2014."

Universities as Centres of Research, Innovation and Drivers of Nation Building

The key role of the knowledge system, and science, technology and innovation policy (STI) policy is to fuel industrial progress. Though innovation fuels manufacturing, innovation is not an activity for or by itself, hence we need to properly establish this link; a firm innovates to create a new product, process or gain a new market superior to what exists in quality and price. STI policy essentially links the laboratory, the design offices to the factory through the convergence of scientists, engineers, entrepreneurs, venture capitalists, humanists and consumers to create new markets locally to raise GDP. Thus, we need to build a professional alliance to turn the current crisis in Nigeria into an opportunity to revive industrial production. The way out for us is to gradually move our systems out of poverty (which cohabits with negative elements such as ethnicity, religion, federal character, disadvantaged states etc), towards wealth creation paradigms (preoccupied with entrepreneurship, innovation, productivity, competition, prosperity, etc). This is a task for Nigerian research/innovation/think-tank entities, led by the university system.

Following the example of the Nigerian 2050 Plan by universities, African universities should raise their game, review and realistically re-envision the Africa Agenda 2063 plan of action for making it the powerhouse of development, industrial self-funding and self-sustenance, driven by knowledge, technology and innovation, that is rooted in our culture and human/ecological diversity. In addition to the expertise within their high-gown walls, they can also leverage on the rich and abundant expertise of the Diaspora to make our education count in the service of our people. Such a plan would have no political nor religious nor ethnic colouration, and hence should be acceptable to succeeding rulers that will come on board in Africa, irrespective of their political affiliation, and guarantee continuity and sustained good governance. This is what I think African universities owe their nations to make our education and allied investment more locally relevant, as it will also be globally re-assuring and competitive.

With a prosperous continent, adequate funding of education by nation-states would be guaranteed, implying that African universities can of their own actions change their present situation for good. Every

nation state needs research centres of excellence to focus research on her key challenges, which if solved would change its narrative of economic transformation. Each African university today have their niches, and perhaps each nation should rather create high-level, high-quality research centres of excellence (RCEs) to address special problems for the nation, the continent and humanity, than establish new/more general-purpose universities.

The accomplishments of the African Research Universities Association (ARUA) since inception in raising resources to establish centres of excellence in its member-universities and its focused promotion of STEAM (STEM+A) is laudable and should be sustained. The role of TETFund in supporting research and the dissemination of its results in Nigeria is also noteworthy and should be amplified. In addition to funding staff development through PhD studies at home and abroad, TETFund has established itself as being reputable through the successful management of the National Research Fund for impactful multidisciplinary research, in addition to supporting institutional research in each of Nigeria's public universities. TETFund is partnering with industries in the private sector, especially start-ups and SMEs to extend research results for uptake for societal development and impact. Little wonder that the EU Horizon project is now coordinated by TETFund which has appointed NCPs in accordance with the requirements of the EU-Africa Partnership. This is worthy of emulation by other African countries. South Africa has leap-frogged through its National Research Agency which has served its universities well. Hence, South Africa leads in the league of Africa's globally ranked institutions. At the same time, the relevance to mandate of SA universities is not in doubt, as their contribution to the development of the African innovation ecosystem is concerned. Table 5 on the intellectual source of innovation ecosystem leaders reinforces this assertion for the University of Cape Town in particular, as well as OAU and UNILAG. African development of its innovation systems is imperative if we must break the jinx of underdevelopment.

In this regard, I would like to emphasize the following imperatives for our universities, the continent and the nation states:

- The need for serious commitment to coordinated economic planning and human capital development to mitigate serious deficits in the number of scientists, engineers, high-level

expertise, and leadership in Africa and nation states. This is a serious “Next Generation Challenge” to which our universities must respond. For example, the Nigerian National Science Technology and Innovation (STI) plan (2012) projects to produce 2000 PhDs annually from 2013, yet no serious synergy exists between the Ministries of Science and Technology, Education and Communications Technology, not to talk of collaboration of the

other key sectoral Ministries, such as Agriculture, Manufacturing, Transport etc.

- The need to bridge the innovation skills gap, by exploiting advances in ICT, business intelligence and analytics, leadership/planning, other generic skills, etc. We need to intensify leveraging on ICT for total governance: (i) embrace integrated ICT solution for all university functions and (ii) mainstream it into governance structures.

Table 5: Universities behind Africa Start-up Ecosystem Leaders

UCT has Enabling Environment for Building Tech

Universities Behind African Visionaries - A Look at the Alma Maters of CEOs Driving African Startup Success

University	Continent	Country	Number of Startup CEOs	Notable Startup CEOs
University of Cape Town	Africa	South Africa	74	Kenneth Mphahlele - Sam Clarke - Marianne Heywood
The American University in Cairo	Africa	Egypt	40	Mohamed Elmaghrabi - Amir Elmaghrabi - Ahmed Elmaghrabi
University of Oxford	Europe	United Kingdom	39	Issac Moore - Karien Holmstrom - Ladi Olatunji
Obafemi Awolowo University	Africa	Nigeria	36	Tunde Eniola-Areosa - Femi Kuti - Adeniyi Adesina
Stanford University	North America	USA	35	Nouraldin Tayeb - Neil Tandon - El Polak
Harvard University	North America	USA	25	Chirag Mehta - Sangeeta Shah - Sam Shojanet
Cairo University	Africa	Egypt	24	Amr Gatti - Amr Elmaghrabi - Amr Elmaghrabi
MIT	North America	USA	21	Adeniyi Adesina - El Polak - Youssef Elmaghrabi
Columbia University	North America	USA	19	Sam Shojanet - Rakesh K. Sethi - Youssef Elmaghrabi
University of Lagos	Africa	Nigeria	19	Adeniyi Adesina - Michael Adesina - Daniel Olatunji
Imperial College London	Europe	United Kingdom	18	Mariam Elmaghrabi - Amr Elmaghrabi - Youssef Elmaghrabi
INSEAD	Europe	France	18	Sam Shojanet - Youssef Elmaghrabi - Youssef Elmaghrabi

Source: Africa This Big Deal

By Youssef Elmaghrabi

Source: https://www.antler.co/blog/how-to-build-a-unicorn-in-africa#:~:text=degree_or_higher.,%ED,outlook_by_these_African_founders.

- Harnessing the youth bulge and the inherent demographic dividend (African Union, 2012) to mitigate dangerously growing youth unemployment and hopelessness, must be pursued vigorously, to avert presently unfolding and looming danger.
- Unpretentious national commitment to a knowledge economy where STI drives planning and implementation, and where expertise and knowledge systems - Universities, Research and Innovation Institutes are accorded necessary priority, recognition and practical engagement.
- The need for a renewed strong commitment to research: in the entire system, but particularly in science and technology, with the deliberate promotion of all-embracing knowledge-industry/civil society/environment-government partnership.
- The need to harness our natural resources for sustainable development, through good governance and transparency in the extractive industry sector, as well as integrated development of the industrial sector, through strategic growth of micro, medium and small-scale enterprises.

Nurturing Africa's Youth-Driven Innovation Ecosystem

The role of the academia in the triple helix (industry/society-government-academia partnership) is very clear; to serve as the knowledge powerhouse of research and innovation that will rejuvenate and shape how mankind utilizes/exploits, preserves and multiplies our natural endowments for sustainable development. Africa does not seem to have sufficiently captured nor understand what the African youths are up to and what sustains their interest. There is a wind of impressive creativity, adaptation and innovation sweeping through the continent, and the earlier we in the academia and African governments come to terms with and work on it the better, in difference to the current spate of self-denial of the emerging reality. The future belongs to the youths and information, communication and digital technologies (ICDT). The last inventory on innovation startups/SMEs in 2022 shows that Nigeria has 3,360 startup and innovation hubs, followed by Kenya with 1000 and South Africa with 680. Lagos is the No 1 innovation city in Africa (see Table 7). Nigeria's UNICON fin-techs such as Flutterwave, Opay, Moniepoint, Paystack, to mention a few dominate the financial innovation space, while we also have Andella, Jumia, Jobberman, etc making waves on the global scene. Like the development in Nollywood, all these successes are from self-funded private initiatives. It is gratifying to note that 14 African countries are rated in the top 100 since 2019, on average (see Table 6).

Table 6: Global Ranking+ of African Innovation Ecosystems (Countries)

S/N	Country	2022 Rank		2021 Rank		2020 Rank		2019 Rank		Remarks
		Global	Africa	Global	Africa	Global	Africa	Global	Africa	
African Countries in Top Global 100		14		14		11		14		
	South Africa	49 th	1 st	48 th	1 st	52 nd	1 st	51 st	1 st	All African countries dropped in their global ranking from 2019 to 2020. SA, NIG, GH & C. Verde improved in 2021
	Nigeria	61 st	2 nd	63 rd	3 rd	68 th	4 th	60 th	4 th	
	Kenya	62 nd	3 rd	61 st	2 nd	62 nd	2 nd	52 nd	2 nd	
	Egypt	65 th	4 th	70 th	5 th	81 st	6 th	56 th	3 rd	
	Mauritius	71 st	5 th	73 rd	6 th	--	--	--	--	
	Morocco	79 th	6 th	95 th	11 th	83 rd	7 th	65 th	6 th	
	Cape Verde	80 th	7 th	87 th	9 th	91 st	10 th	--	--	
	Ghana	82 nd	8 th	81 st	7 th	85 th	8 th	75 th	8 th	
	Tunisia	83 rd	9 th	82 nd	8 th	77 th	5 th	80 th	7 th	
	Rwanda	84 th	10 th	69 th	4 th	65 th	3 rd	64 th	5 th	
	Somalia**			94 th	10 th	95 th	11 th	--	--	
	Uganda			97 th	12 th	89 th	9 th	81 st	9 th	
	Namibia			99 th	13 th	--	--	--	--	New in 2021
14	Ethiopia			100 th	14 th	--	--	100 th	14 th	came back 2021
15	Cameroon			--		--	--	84 th	10 th	All Dropped off since 2020.
16	Botswana			--		--	--	90 th	11 th	
17	Zambia			--		--	--	92 nd	12 th	
18	Algeria			--		--	--	99 th	13 th	

+ Only Top 100 ranked globally

**Somalia's progress in 2020 was well applauded as exemplary and hope laden, while Mauritius came in strong & impressive as 6th along with Namibia also fresh in 2021.

Source: StartupBlink (<https://startupservices.startupblink.com/webinarandreport/>), June 2020 & Nov 2022.

Table 7: Global Ranking+ of African Innovation Ecosystems (Cities)

S/N	City	*COVID-19 Inno- vation	2021		2020 Ranking		2019 Ranking	
			Global	Africa	Global	Africa	Global	Africa
1	Lagos	48 – 2 nd	122	1 st	127	2 nd	99	1 st
2	Nairobi	22 – 1 st	136	2 nd	116	1 st	105	2 nd
3	Cape Town	79 - 4 th	145	3 rd	146	3 rd	157	3 rd
4	Johannesburg		152	4 th	160	4 th	248	8 th
5	Cairo		180	5 th	201	5 th	177	4 th
6	Kigali		265	6 th	266	6 th	232	6 th
7	Accra		281	7 th	351	9 th	244	7 th
8	Tunis	63 – 3 rd	341	8 th	283	7 th	223	5 th
9	Kampala	80 – 5 th			307	8 th	279	9 th
10	Casablanca				378	10 th	284	10 th
11	Pretoria				501	11 th	--	

+Only Top 1000 Cities ranked globally

*Only 80 cities ranked for COVID-19 innovation readiness.

Source: StartupBlink (<https://startupservices.startupblink.com/webinarandreport/>), June 2020 & Nov 2021

Africa and Global Science

The dazzling pace of changes occasioned by the digital transformations of the 4th industrial revolution makes it fascinating, but impossible to anticipate what lies ahead. We are still coping with the disruptions of the 4th industrial/Nano-digital revolution, the internet of things and convergent technologies, and we do not yet completely know where machine learning, block-chain, and artificial intelligence are taking us, with the emergence of thinking and feeling robots. We can only infer that our dynamic and ever changing or transforming world will continue to evolve with the exploits of knowledge, science, technology, innovation and digitization.

For us in Africa, it is the African knowledge system, our universities and allied institutions, that can come to the rescue of the continent by contributing to the content of the new transformations rather than just remaining perpetual consumers of new technologies. For example, talking of the global movie/motion picture industry domain, the Nigerian Nollywood (and Ghanaian movie) industry have firmly placed African content in the global domain, thereby changing the narratives, as more people now watch African Magic movies, and this is cascading to the African music and fashion industries. There is thus a loud shout of “yes, we can do it” giving us hope of Africa’s capability.

Yet, we have not recognised the place of the quiet artistic knowledge revolutions in the Drama Schools of Obafemi Awolowo University, Universities of Ibadan and Port Harcourt, where the late Olarotimi, Nobel Laureate Wole Soyinka, Femi Osofisan, and the late Dapo Adelugba to mention a few, inspired a new generation of actors, actresses, producers, make-up artists and other industry professionals. A good feature of the evolution and growth of Nollywood is that it was not government inspired, but from private toil and labour of the actors, business sponsors, entrepreneurs, *et cetera*, who were bold enough to dream and take risks, which ultimately paid off. The evolution and growth of the African tech ecosystem (earlier described) seems to be following the same trajectory; private initiative of young risk-takers, self-development and not government-led. My hope, therefore, is that African science, technology and innovation would boldly emulate the developments in the Nollywood, African music and fashion industries, and situate African scientific and technological innovation in the locus of local and global transformations, to birth an authentic Afro-centric global development narrative. I agree absolutely that our universities must be locally relevant while also being globally visible and competitive, and graduates of our universities must be conscious of what the Nollywood experience teaches us – boldness, believe-in-self, innovation, perseverance, industry and fortitude. African universities must be conscious of these

development and work with policy to support them in a triple helix interplay to change the world around us, for our common inheritance. The future may yet belong to Africa as Agenda 2063 envisions.

Summary

In conclusion, I would like to state that:

1. Nigerian universities, like many of their counterparts in Africa, have not been able to fulfil their mandate of driving national and continental development due to multi-faceted challenges, indicating the urgent need for their revitalization. Studies and efforts to accomplish this task are currently ongoing in many countries, including Nigeria and Ghana.
2. Universities have never been as crucial to nations and states as they are today if such nations are to be competitive in the global economy. They need their university sectors to produce and apply knowledge, and to produce knowledgeable and well-skilled workers across the skills spectrum. Universities must therefore be well funded and accorded needed recognition, and in return, they must not be found wanting in responding to this crucial need that will determine their local relevance and social value.
3. In this regard, universities generally should be research-intensive, have the research uptake and innovation function as their hallmark and most distinguishing feature, requiring specialised/independent structures and expertise or special purpose innovation vehicles (SPIVs) that should not impair their basic academic, research and civic engagement functions. They should also exploit ICDT to the limit to transform their institutions and methods of teaching, learning, research and governance, including drastically minimizing the frequency of industrial disruptions.
4. Universities in each country should come together as a consortium to develop a blueprint for the economic emancipation of their country into a prosperous, industrial, self-sustaining entity that exploits contemporary knowledge innovations for her development. The starting point is to champion the establishment of special-purpose research centres of excellence to focus on specific challenges that if properly mediated would be radically transformational for the country.
5. African universities must harness science, technology and innovation, deeply rooted in African arts and culture, to boldly emulate the developments in the Nollywood, African music and fashion industries, and enrich global narratives with African scientific and technological content (innovations) to birth authentic Afro-centric global development models.

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**ANNEX I: Table 8: 2050 Futures Planning for Nigeria:
Assignment to Universities**

Question	Focus	Assigned Universities	Coordinator
How do we feed the people?	Food security	· FUNAAB · ABU Faculty of Agriculture · OOU, Ago-Iwoye · Landmark University	Faborode
How do we ensure their health security?	Health	· UNIMAID · UCH · ABUAD · LASUCOM · Redeemers University	Briggs
How do we educate them?	Education	· Tai Solarin University of Education · BUK Faculty of Education	HME Rufai
How do we provide housing for them?	Housing	· Covenant University · UNN · UDUS · Rivers State University	Obayan
How do we provide transportation?	Transportation	· UNILAG · LASU · UNILORIN · Kaduna State University	Ramon-Yusuf
How do we provide employment for them?	Employment	· Pan Atlantic University · Edo University · KWASU · UNILORIN	Abdullahi
What mode of governance is best?	Governance and Leadership	· BUK · UNIUYO	Jega
How do we secure the country (internal and external)?	Security	· UNIPORT · UNIMAID · UNILAG · ABU · UNIBEN	Okebukola and Saliu
How do we provide (uninterrupted) power for the citizenry?	Power	· FUT Minna · Modibbo Adama University · FUTO	Kumo and Maiyaki
How do we maintain our megacities?	Urban Development	· UNILAG · BUK	Mafiana

How do we provide needed infrastructure	Infrastructural Development	· ABU Faculties of Engng and Environmental Sciences; UDU, Sokoto; ESUT, JABU and Sule Lamido	Faborode & Atah
How do we restore industrial productivity back to Nigeria of 2050 through the revival of small, medium and large industries and adoption of smart and conservative technologies	Industrial productivity	University of Jos, Benue State University, University of Port Harcourt, Afe Babalola Univ and Kaduna State University	Abdullahi
How do we strategically harness science, technology and innovation and enthrone a knowledge economy to be the hallmark of smart and digital economic planning in NIGERIA of 2050	STI development	UI; MAUTECH, Yola; IBB, LAPAI; CRUTECH and BOWEN	Briggs and Rahmon-Yusuf

Source: STRADVCOM, 2022

Annex II: Appendix II: PHEA Summary Impact Sheet

Total Investment

Invested a total of \$440 million in 9 countries with combined population of 459 million, impacting 54 universities directly over 10 years.

Countries and Number of Universities covered by PHEA Intervention (2001-2010)

S/No	Country/Universities Impacted	No of Impacted Universities	Total Number of University as at 2000
1	Egypt (Cairo U, AU Cairo)	3	35
2	Ghana (UG Legon, Winneba)	4	28
3	Kenya (Kenyatta, African Virtual U)	7	18
4	Madagascar (Antananarivo)	2	6
5	Mozambique (Eduardo Mondlane)	2	38
6	Nigeria (Ibadan, Kano, OAU Ife, ABU Zaria, Jos, Port Harcourt)	12	104
7	South Africa (Cape Town, Wits, Kwazulu Natal, Western Cape, Rhodes, Pretoria, Stellenbosch, Johannesburg, UNISA; Fort Hare)	17	72
8	Tanzania (Dar es Salaam, Sokoine UA)	4	33
9	Uganda (Makerere)	3	16
	TOTAL	54	379

Nature of Intervention

Most PHEA investments sought university transformation via the development and improvement of academic programs, institutional systems, physical infrastructure, and university connectivity as determined by the institutions themselves. Specifically:

1. Enhancement of information and communication technology (ICT) potentials for teaching, learning research and services
2. Optimizing instrument/equipment use in central science laboratories
3. Promotion of women in science and Female scholarships
4. Promoting the entrepreneurial resourcefulness of graduates
5. Strengthening research management and enhancing partnerships
6. Staff capacity building and development through PhD training and Scholarships; support for next generation initiatives. 12% of total
7. MDG related activities: MDGs 1, 3 and 8 (now SDGs 1, 5 & 17).
8. Strengthening resource mobilization engagements to boost IGR and endowments

Key Outputs/Accomplishments

Enduring improvements in African higher education

- Physical infrastructure for research strengthened across board
- New and more efficient planning systems emplaced – strategic planning, advancement
- African institutions strengthened to respond to development needs and create high level talent – curricular and program review to deepen research and relevance to society needs
- Universities and stakeholders addressing the crises of the ‘Next Generation Academics’
- Bandwidth Consortium saved universities \$19.7 million & increased capacity 6 fold
- Universities developed the capacity to manage their IT networks robustly
- Universities adopting educational technology to improve teaching and learning thro ETI
- Improved gender equity in enrollment and graduation rates
- Policy research and advocacy expanded – HERANA, University Worlds News, & African
- Strategies developed to enhance access for marginalised groups.
- Focus on enhanced PG training – PG supervision and thesis guides etc

Increased resources for African universities through advocacy and grantmaking

- Influenced the work and priorities of several financiers and donors to education, eg. Nigerian Govt’s support for HE increased from \$105 to \$676 million, 1999-2007. Since 2009, a special intervention fund of \$235 million annually has been used to upgrade 6 universities at a time. TETFund regular intervention fund has increased 10 fold.
- More resources have been raised from endowments and alumni – OAU, Port Harcourt, Jos

Collectively adding value beyond what individual foundations could do

- Together the Foundations tackled several large initiatives for university connectivity, e-learning, and advocacy on key African HE issues with greater power and voice. Support for University World News

– African Edition and the HERANA Gateway provide sustained source of information and advocacy for African HE.

- Added value through financial resources, influence, reach and joint regional actions
- Increased collaborative and cross-support grants to deepen collective impact – convening the African University Leaders’ Forum, and supporting the Africa-USA partnerships and the RICE initiative of the IFS, supported by MacArthur and Carnegie
- PHEA support for research in addition to individual Foundation initiatives
- Better collaborative transparency and benchmarking, e.g. MacArthur funded science infrastructure audits at Carnegie and Rockefeller grantee-universities

Enhanced individual foundation efforts

- PHEA complemented individual foundation grants – ICT support lowered investments with better faster connectivity
- Developed new foundation strategies and expertise in African affairs, eg, the NGA work across all foundations, and learning to deal with Govts.
- Emergence of small and large co-funding opportunities – support for CARTA: Consortium for Advanced Research Training in Africa, and INDEPTH: the demographic research network supported by Hewlett and Rockefeller

Major Impacts

- Universities, involved responding better to their core mandates because of better critical infrastructures and human capital development from interventions.
- Interventions have instilled greater confidence in the universities and their proprietors, and hence encouraged governments and others to increase the level of funding for higher education.
- Indeed, interventions have signalled a new dawn for the NUS, especially the beneficiary institutions.
- Staff of affected universities exposed to advances in research methods and developments, including forming inter-disciplinary teams; impressive teaching methods and elements of community engagement,
- Affected universities thus became more community-impact focused, with enhanced relevance and service delivery. Remain Nigeria’s leading universities, with good international acclaim.
- Success of the NUS in securing 10 of the 18 African Centre of Excellence (ACE) with funding support from the World Bank is a good testament of current state – OAU, UNIJOS, ABU, BUK, UNIPOINT. UNIBADAN is a node of Pan African University (PAU).

Learnt Lessons as Advisory for Future Partnerships

- PHEA approach represented a welcomed shift of priorities and support from individual to institutional development to advance holistic university transformation.
- New liberalisation by funders, has enabled support to be channelled only to areas identified by the universities themselves - a departure from the historical context of philanthropy in Africa.
- PHEA consortium “changed the terms of debate on educational investment in Africa, and also influenced the perspective and priorities of many other philanthropic organisations”
- The issue of relevance to the local context or the issue of research for development is now alive in Africa.
- The transformation engendered by the interventions has instilled greater confidence in African universities and their proprietors and hence encouraged governments and others to increase the level of funding for higher education.

CREATED SPACES FOR EMANCIPATORY IMAGINATIONS IN THE 21ST CENTURY AFRICAN STUDENTS: THE ROLE OF UNIVERSITY STUDENTS IN UNIVERSITY GOVERNANCE AND LEADERSHIP BEYOND THE 20TH CENTURY

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Abstract

Higher education institutions do not just provide the human resource training needed for development but are fertile grounds through which critical ideas are fostered. While there are constant calls for the transformation of higher education to reflect the developmental agenda of African countries, it is essential to reflect on the role students play in harmonizing the philosophies, orientations, and praxes of government agencies, research councils, university associations, and statutory councils. In the 20th century, students' revolutionary activities were seen through media engagements, press releases, boycotts, and demonstrations on institutional, national and international issues. Student activism was phenomenal in developing institutional policies and cultures in Ghana's universities. While it is argued that student political activism has dwindled in the 21st century, it is essential to analyze the diverse expressions of student emancipatory imaginations through university administration, party politics, and social media engagements. This paper seeks to answer the question: How have the forms of emancipatory expressions of university students changed in the 21st century? How do universities create spaces for students' expressions of critical thoughts? Relying chiefly on primary sources including institutional policy documents, student correspondence and press releases, interviews, and student social media platforms, this paper demonstrates a continuity of students' critical voice in university administration and leadership, this paper demonstrates a continuity of students' critical voice in university administration and leadership through their demand for accountability, fairness, and social justice.

Keywords: higher education, university students, critical voices, university governance, emancipatory imaginations.

Introduction

On 26th August 2022, at an emergency meeting of the Kwame Nkrumah University of Science and Technology (KNUST) Council, the Fact-Finding Committee abolished the Junior Common Room system and suspended indefinitely all Hall Week and SRC week celebrations of the University (See Appendix A). This meant that all hall week celebrations and Student Representative Council (SRC) Week celebrations were barred indefinitely. Additionally, the massing up of students for demonstration or 'morale' activities was barred. This decision was made after violent clashes between students from the University Hall (Katanga) and Unity Hall (Conti) that led to the injury of ten students and the destruction of individual and university properties on 18th August 2022. Considering this a student repression, the Student Representative (SRC) and Graduate Students Association of Ghana (GRASAG) leadership fought vehemently until the decision was reversed on 20th June 2024. This was one of many recent events that represent students' efforts to project their critical voice against the management of Ghana's universities and government in the 21st century. Beyond the attempt to prevent mayhem and instil orderliness in the university, one could raise questions about the implications of institutional suppression on student agency.

Higher education studies describe the 20th century as the century of vibrant student activism propelled by the confrontational nature of student politics and the medium of demand for change (Boahen, 1994; Altbach, 1989, 1984; Sapon, 2009; Luescher-Mamashela and Mugume, 2014; Anderson et al, 2023; Anderson et al, 2024a). A major driving force for student activism was the national responsibility attached to higher education in Africa, which Sawyerr identified as "to develop and manage their resources, alleviate the poverty of the majority of their people, and close the gap between them and the developed world" (Sawyerr, 2004: 4). Universities were seen as crucial in Africa's quest for development and attempts to Africanise independent states and produce 'elites' to propel development (Zeilig and Anseli, 2008: 11). Zeilig and Anseli (2008: 11) note that the cultural status of education, the small numbers who attend university, their shared identity with political leadership, the state's need for graduates, and the nature of campus life, positioned students as an essential social group in the postcolonial state.

In the 20th century, higher education students were at the forefront of revolutionary activities, advocating for political and institutional reforms through demonstrations, press releases, and boycotts. The relationship between university students, management and the government in the 20th century was usually tumultuous and ambivalent. Students focused on socio-economic and political issues affecting the students and society. The government sought the cooperation and loyalty of students in exchange for the generous grants and scholarships that it financed.

While scholars generally assert that student activism has dwindled largely in the 21st century, there is also

evidence to suggest that students have maintained old ways of activism while innovatively developing new ways to accommodate the changed socio-political climate. In the 21st century, students continue to play a critical role in challenging authoritarian governance, economic inequality, and exclusionary practices in education and society. Most student activism literature does not delve into contemporary student activism to understand the changing factors which have influenced student activism. This paper discusses the different forms of student activism, leadership development, and the broader socio-political context of higher education in Ghana beyond the 20th century, by answering questions on forms of participation and expressions of power relations. How have the forms of emancipatory expressions of university students changed in the 21st century? How have universities created spaces for students' expressions of critical thoughts?

Using the qualitative approach to analyse historical primary data such as archival documents, oral histories, newspaper reports, international policy statements, ethnographic data and surveys, this paper relies keenly on archival documents from the Public Records and Archives Administration Department (PRAAD) and the University of Ghana Archives (in the Balme Library). From here, documents of student-government-management correspondence, commissions of enquiries into incidents of activism, government reports, international policy documents, newspapers and student magazines were used. Oral interviews and ethnographic observations within the same period mentioned above by the author validate the argument of the continuous creation of critical emancipatory spaces within the universities. The discussion is a result of the content analysis of these sources. Following this introduction, this paper

historicises student activism in Ghana, then discusses contemporary forms of activism. Additionally, the paper discusses the diverse student emancipatory spaces in Ghana's Universities.

State-Student Relations: A Historical Overview, 1957-1992

Sub-Saharan Africa's (SSA) student activism before independence was initially centred in the metropolises, especially in Paris and London, and was organised regionally to fight racial prejudice, imperialism, as well as to preserve African heritage and culture (Boahen, 1994: 13-14). Regional and territorial nationalist movements such as the African Students Association (ASA), National Congress of British West Africa (NCBWA), West African Students Union (WASU), West African Youth League (WAYL) for the Anglophone colonies, and *Association des Etudiants Sénégalais* (AES) and the *Fédération des Etudiants d'Afrique Noire en France* (FEANF) for the francophone colonies are some of the activist groups that were formed. They impacted the colonies by creating political consciousness through their persistent demand for self-government and independence (Boahen, 1994: 13-14; Zeilig and Anseli, 2008: 9). Prominent student leaders who returned to Africa to lead the fight for independence included Nnamdi Azikiwe in Nigeria, Dr. Kwame Nkrumah of Ghana, Leopold Senghor of Senegal, Jomo Kenyatta of Kenya, Kamuzu Banda of Malawi, and Nelson Mandela of South Africa (Poe, 2003: 85-88). As a result of these forerunners, a strong legacy of student activism was developed in SSA after independence (Anderson et al, 2023b).

After Ghana's independence in 1957, universities assumed an elitist position as they were ascribed the national responsibility to propel development. In the university governance structure, the hierarchical structures of authority often left little room for participatory governance or student involvement in leadership. Initially, institutional governance was repressive, as it served the needs of the colonial state or postcolonial governments. In Ghana's first democratic state, the relationship between the government and the universities was mostly confrontational and tumultuous. Nkrumah saw the universities as a breeding ground of unpatriotic and anti-government sentiments (Botwe-Asamoah, 2005, 146; Anderson et al, 2024). Nkrumah threatened, "We do not intend to sit idly by and see these institutions, which are supported by millions of pounds produced

by the sweat and toil of the common people, continue to be centers of anti-government activities. ... If reforms do not come from within, we intend to impose them from outside, and no resort to the cry of academic freedom ... is going to restrain us from seeing that our University is a healthy Ghanaian University devoted to Ghanaian interests" (Botwe-Asamoah, 2005: 57). Nkrumah and the CPP made attempts to control student opinion through the establishment of rival student groups to the National Union of Ghana Students (NUGS) like the Ghana National Students' Organisation (GNSO), Convention People's Party Students Union (CPPSU) and the National African Socialist Students Organization (NASSO) (Sapong, 2009: 54). These pro-government groups did not last or have any meaningful impact as did the student leadership structures. This turbulent relationship became foundational to all other subsequent governments that came after Nkrumah.

By 1966, Nkrumah had lost the initial support he received as different sections of the population opposed him vociferously. Allegations of bribery and corruption, obsession with power both in Ghana and Africa, abuse of power, detentions against all forms of opposition, and economic mismanagement leading to near bankruptcy, were levelled against Nkrumah (Oquaye, 1980: 3; Boahen, 1975: 222). The National Liberation Council (NLC), which overthrew the CPP government, received student support due to their attempts to incorporate students in national governance. Students support provided some legitimacy to the governments of military governments through their acceptance and cooperation with the government's policies (Anderson et al, 2024a: 76). Students showed support and loyalty to the NLC and other military governments such as the National Redemption Council (NRC), the Armed Forces Revolutionary Council (AFRC) with demonstrations and self-help initiatives at the initial stages of their reign (Nugent, 1995: 30; Yeebo, 1985: 65; Oquaye, 1980, 222; Anderson et al, 2024a). This support was rooted in the coup leaders' invocations of the ideology of communal mass development against Western liberal economic development approaches.

Additionally, students supported efforts made to wipe away Nkrumah's legacy, including the banning of all images of Nkrumah's public spaces; streets that bore Nkrumah's name were renamed, his books were burned, and all CPP symbols and paraphernalia were forbidden (Lentz 2017, 563). They vandalised the CPP headquarters, physically

attacked and intimidated Nkrumah's supporters, and demonstrated in support of the NLC (Finlay 1968, 60). The then SRC Chair in UG wrote to congratulate the NLC and make recommendations on the way forward as a nation. He stated that "We the students of the University of Ghana, encouraged by the willingness of the NLC to accept views from all sections of Ghana, and moved by the desire to help in the task of national rebuilding boldly undertaken by the NLC..." (UG Archives, UG1/3/7/4/11A). Further, to help reduce corruption, they suggested a withdrawal limit of £100 imposed on all bank accounts of Ministers and former CPP functionaries, cut down embassy expenditure, extradite corrupt Ghanaians under Nkrumah, and review scholarships awarded to students (UG Archives, UG1/3/7/4/11A). Similarly, the SRC of the University of Science and Technology (UST) noted, "We reaffirmed our absolute support and loyalty to the National Liberation Council in their bold and well-intentioned attempts to put back Ghana's economy on sound footing, restore individual rights and freedom of thought and expression of the Ghanaian people" (PRAAD Accra, RG8/2/443). Consequently, Major-General Kotoka, Colonel Afrifa, and Lieutenant-Colonel Ocran, leaders of the coup, were hailed by students on a visit to Kumasi (PRAAD Accra, RG8/2/443). At the University of Cape Coast (UCC), students associated with the NLC shared a strong relationship with the regional commissioner, Lieutenant Donkor. This sometimes led to his interference in favour of students when the university took disciplinary measures against them (Kwarteng et al., 2012, 100). In 1968, Dr Bakhoon, the Vice-Chancellor for the UCC, was removed from office through the student-NLC collaborative effort. The same thing happened in the UST, where the Vice-Chancellor, Dr Baffour, was removed for arbitrariness and capricious, callous and unsympathetic exercise of his authority (PRAAD Accra, RG1/4/126). But this acceptance was usually short-lived as students were noted to hold the government accountable and demand the return to democracy.

Under the Second Republic, Busia's government did not enjoy broad support from the NUGS, even though the Student Association for National Integration and other groups declared their unflinching support for the regime (*Daily Graphic*, 1971). Aside from students, University Teachers Association of Ghana (UTAG) members declared support for the Busia government, largely because Busia had been a UTAG member and opposed Nkrumah's crackdown on academic freedom. Students were generally less impressed

with Busia's neoliberal approach compared to Nkrumah and his government's promises of fast-paced socialist development. However, students and professional groups found a compromise in Busia's laissez-faire neoliberal approach, which was less repressive than Nkrumah's approach (Goldsworthy 1973, 10; Hutchful 1985, 122–36; Libby 1976, 67).

The major discord between student unions and Busia was ideological leanings on economic development. University students opposed Busia's neoliberal policies and Pan-African stance. NUGS leaders described the student-loan scheme as "completely incompatible with the social standards of the ordinary Ghanaian" and said it could set the country's educational policy more than a decade back (*Daily Graphic*, 1971). Students staged a peaceful demonstration in the regional capitals on June 21 and 22, 1971, to demand a suspension of the loan scheme, which they saw as social injustice and against the interests of the proletariat (UG1/3/7/4/27; Interview with Tamakloe 2021). They protested his refusal to provide financial aid and collaboration with liberation movements in Namibia, South Africa, and Zimbabwe, unlike Nkrumah (Aluko 1975, 57; UG1/3/7/11/27B). Busia's association with the West through the Harvard Development Advisory Service and the International Bank for Reconstruction and Development led to the introduction of a 5 per cent levy on all incomes greater than N¢34 per month, and the devaluation of the cedi by 44 per cent against the US dollar (Goldsworthy 1973, 10). This led to the overthrow of Dr Busia's in 1972 by the military regime under General Acheampong's NRC, later the Supreme Military Council (SMC I), and the end of the Second Republic in Ghana.

After a brief period of acceptance due to his socialist outlook, Acheampong was severely opposed by some social groups, such as NUGS, the Association of Recognised Professional Bodies (ARPB), and the Ghana Medical Association (GMA), among others. Following a palace coup that led to the removal of General Acheampong and his replacement in office by General Akuffo (SMC II), the military regime was subsequently toppled by junior and non-commissioned officers of the military led by Flight-Lieutenant Jerry John Rawlings and the Armed Forces Revolutionary Council (AFRC) on 4th June, 1979 (Oquaye, 2004: 1–4).

In September 1979, power was handed over to Dr Hilla Limann and the People's National Party (PNP) in the Third Republic. However, after a short while,

Rawlings returned to usurp power on 31st December 1981, under the Provincial National Defence Council (PNDC). In the Third Republic, Limann's government had perhaps the least favourable alliance (of all the civilian regimes) with NUGS and students broadly. This was largely because students were more convinced by Rawlings's promise to uproot corruption and ensure social justice, which the previous regimes had failed to address. As Ali Masmudi, UCC SRC President 1984–85, noted in an interview (2020), "We have the 1979 uprising, you remember, the June 4th; after that, Limann. The atmosphere was quite annoying because of the corruption and the economy and the evaluation by the previous government, which was having some ravages for a long time, even into the Limann administration." Students' scepticism toward Limann largely stemmed from their ideological association with Rawlings's populist ideology, as opposed to Limann's neo-liberal ideology. Similarly, students protested Limann's attempt to increase the duration of graduating students' national service from one to two years, out of which six months would be spent in military training under the National Service Act 426 (1980) (Gyampo 2013, 57). Limann was faced with reconstructing an ailing economy and reviving confidence in civilian governance. As he was unable to achieve this, students supported Rawlings's overthrow of the PNP government on 31 December 1981 (Chazan 1983, 306; *Daily Graphic*, 1979).

In support of the revolution, higher education and secondary students went on demonstrations in Accra, Kumasi and Cape Coast. When eight executions were carried out on June 11, 1979, the AFRC had the full support of university students. Students marched to Burma Camp with placards with the inscription 'Firing squad for nation wreckers' and 'let the blood flow.' They embarked on several voluntary self-help services to the country, such as food evacuation and distribution, especially cocoa, refuse collection, checking smuggling and illegal gold dealing, pot-hole filling, and building latrines (Oquaye, 2004: 4-5; Anderson et al, 2023). Student leaders and intellectuals responded to the revolution by articulating Rawlings' ideology and joining socio-Marxist groups such as the June Fourth Movement (JFM), People's Revolutionary League of Ghana (PRLG), Movement for Peace and Democracy (MOPAD), Kwame Nkrumah Revolutionary Guard (KNRG), Pan-African Youth Movement (PANYMO) (Interview with Chris Atim on 11th September 2020).

However, this relationship was short-lived as soon as the regime became hostile to students, as the latter became highly critical of the former. On 6th May 1983, students from UG demonstrated against the government in Accra with placards and songs. In a song, students sang, "*Y'atu Busia, y'atu Acheampong. Rawlings de ε ε small boy*" (We have usurped Busia, we have usurped Acheampong. As for Rawlings, he is a small boy) (interview with Francesca Oppong). In retaliation, on 9th May, 1983, some members of People's Defence Committees (PDCs) and Workers Defence Committees (WDCs) from Accra and Tema went on a demonstration on UG campus with cutlasses, iron rods, sticks, firearms, canes, cudgels, and mercilessly beat up students, especially, in Commonwealth Hall because they felt students wanted to subvert the revolution (UG Archives, UG1/3/7/4/111). They invaded Commonwealth and Volta Halls and destroyed university property, including the Vice Chancellor's lodge, forcibly searched cars, and intimidated even senior members (UG Archives, UG1/3/7/4/27E). Another notable event in 1983 involving the Defence Committees and Students was the Queen's Hall Crisis. A group of miners from Ashanti Gold Fields Corporation (AGFC) were conveyed in buses, articulated trucks and land rovers to disrupt the NUGS congress. They mercilessly attacked students with cutlasses and sticks, firearms, canes, and cudgels. The miners asserted that the PNDC Ashanti Regional Secretary organised them to disrupt the 19th Annual NUGS Congress (UG Archives, UG1/3/7/4/111). PNDC-student hostility intensified as students asked the government to hand over to a constitutionally elected government, while the PNDC called student actions selfish, unpatriotic or reactionary.

These periods witnessed abuse of power, economic crisis, breakdown of administration, corruption, inefficiency and mismanagement, civil disorder, human rights abuses, failed neoliberal economic policies, and nepotism (Chazan, 1983: 3-4; Anderson, 2024a). As a result, students developed a nationalistic outlook and an ideological inclination that projected a protection of the needs of the masses. Through internal and external pressures from students and other civil groups, as well as the international bodies like the World Bank, Flt. Lt. Rawlings gave in to the demands for drafting a constitution, which led to the democratisation in Ghana and the return to civil rule in 1992 (Ayee, 1996). Students participated in the Consultative Assembly (CA) in the formulation of the draft constitution. The ban on politics was lifted

on 18th May 1992, and on 29th December 1992, elections were held. The NDC won the presidential and parliamentary elections, and Rawlings was sworn in as president on 7th January, 1993.

Student Activism in the Fourth Republic

Student activism has undergone some changes in the Fourth Republic, including the politicisation of student leadership through the creation of political party student wings on the various campuses (Gyampo, 2013:49-50; Gyampo et al 2016: 237; Paolo & Gyampo, 2019:132-133). With the change in political culture in Ghana through the introduction of multi-party democracy, students have been influenced by established party student wings including Tertiary Institution Network (TEIN), Tertiary Education and Students Confederacy (TESCON) and Tertiary Students' Charter (TESCHART) for National Democratic Congress (NDC), New Patriotic Party (NPP) and Convention People's Party (CPP) respectively (Gyampo, 2013: 60). These groups were initially established to win support for the parties among the student body, avert opposition to the party's ideologies as well as create tools for campaign of party's vision; in exchange political parties mentored and aided the students financially (Paalo and Gyampo, 2019: 132-133). The establishment of these groups has led to the polarisation of the student front as students have been unable to present a united front on issues of national and institutional interest. It has also led to the questioning of the integrity of student leadership since student vote buying has been normalised, as is done in the national political space (Paalo and Gyampo, 2019: 132-133).

Additionally, neoliberal education introduced in the 1980s, has affected students' patriotic attitude in activism. Emphasising privatisation, individualism, and market efficiency, instead of the former notion of education as a social good, the large numbers of students who entered the universities from the 1990s became largely detached from the state, while they focused on the financing of their education (Luescher and Klemencic 2017; Anderson 2025). The introduction of cost-sharing policies through the Academic Facility User Fee (AFUF) and the Residential Facility User Fee (RFUF), the Student Loan Scheme (SLS) and residential policy, the withdrawal of student allowances, and the privatisation of accommodation and catering services affected the students' support of the state. Further, it also influenced students'

posture and agency as contemporary students are largely apathetic to national issues.

Contemporary student activism in Ghana may not be the same in form or character as it was from independence to the 1990s. However, it is important to emphasize that student political culture in contemporary times is awakened by the need to address grievances of students and not necessarily in line with a national or international agenda. Overall, it appears that after the establishment of students' political party wings, party interests have superseded student and national interests among the Ghanaian student body of the 21st century. Most student activism issues revolved around the increase of fees and residential fees, and student loans (Anderson, 2025). In the 21st century, two broad groups of students can be identified: students with active interest and participation in national and student politics, and students who are generally politically apathetic. Among the first group are students who seek to use the established political party branches on campus to enter national politics after their education (Gyampo and Anyidoho, 2019: 2). The less politically active students are generally less concerned with politics, less politically knowledgeable, do not participate in social or political activities, are more apathetic, and have low levels of political interests (Quintelier, 2007: 166).

Despite the description given above, there is a recent resurgence of activism activities across the universities. In contemporary times, activism revolves around ideas of social justice, accountability, and the fight against illiberal management decisions. In 2018, the decision by the management of KNUST to convert all of its traditional halls, including the Unity Hall and University Hall, to mixed halls did not sit well with the students and even some alumni, causing strong opposition. Therefore, on 18th October, students demonstrated against the university management over the brutality of campus security and the lack of management to address student grievances. Similarly, in the University of Education, Winneba, students demonstrated against the Vice-Chancellor, Rev Father Prof Afful-Broni, on Thursday, 14 March 2019, to demand the reinstatement of some dismissed lecturers of the university. This, however, turned chaotic. These instances mentioned here demonstrate student agency for social justice and accountability at critical periods of stifled student voice.

Another dynamic in student activism in the 21st century is student activism on the financing of higher education. Based on the ideal of social justice, students in the universities annually oppose attempts by the universities to increase academic fees and residential fees. At the UG, management announced an increase in fees in 2018; however, after students threatened to demonstrate, management rescinded this decision. Sylvester Amoako Quarshie, President of the SRC, noted, “We want to say as SRC that we will hold our guns, we will relax, we will cooperate with students and management to make sure that our SRC will be better. All indications of demonstrations are hereby suspended until further notice” (Lartey, 2018). As a result of these demonstrations, university management has resorted to the introduction of varied policies such as fee payment in instalments, registration without fees, and the introduction of financing schemes for the less privileged, including KNUST’s *Ketewa Bia Nsua* (no amount is too small). This is a bursary scheme available for students in critical need to augment the other sources of scholarship by the government and other educational stakeholders (Anderson, 2025).

Student agency continues to vehemently oppose the misappropriation of student funds. The JCRC’s Parliamentary caucus and other institutional structures required accountability from its leaders entrusted with student funds. This is not new in Ghana’s universities. In 1977, female students in Volta Hall boycotted the leadership of Mr Oduro-Kwarteng as SRC president because they accused the leadership of embezzling ₵3,000 of student money (Anderson, 2023). Recently, in 2020, students boycotted the KNUST SRC President, Michael Abuah and Speaker of the KNUST Parliament, Andrew Anokye Kyeremateng, who were alleged to have misapplied travel funding of GH₵9,100 meant for an educational and leadership forum in South Africa. After the investigation, the two were exonerated of these allegations in 2023. Similarly, in 2024, a KNUST student, Stanley Yanful, petitioned management to investigate the SRC budget. The petition probed: “co-curriculum activities (sports and entertainment) were not allowed to occur due to the cataclysmic clash that happened between Unity and Katanga Hall, but it was addressed in the budget that, there has been 20 percent increment on entertainment activities and 25 percent on sports activities, so, what were those increments used for if there were no co-curriculum activities within the academic year?” The petitioner also requested a probe into the

over GH₵850,000 Ghana cedis used to purchase a vehicle for the university’s Police Service by the previous administration led by former SRC President, Frank Owusu (Yiadom, 2024). In UG, in 2020, students petitioned the university management for investigations into the embezzlement of GH₵66,0000 of SRC dues by the SRC president Isaac Agyemang. They also petitioned for the disqualification of the SRC Presidential aspirant 2024, Emmanuel Owusu Amponsah, who was accused of misappropriating GH₵19,760 of the Sociology Students’ Association funds during his time as Secretary of SOSA. These illustrations speak to the student’s persistent effort for accountability from its leadership.

Other crucial areas where university students have failed to express adequate agency in are sexism, gender oppression and homophobia in the university campuses. Universities remain highly masculinised, with the creation of a hostile environment by social, cultural, and religious stigma. Leadership, activism, and hall cultures largely stigmatise and abuse women who contradict established student traditions. Traditional gender norms in the universities deny women access to certain spaces. It is not uncommon to hear verbal and social abuse of women. At the University of Cape Coast, women are not ‘allowed’ in the Casford Hall (all male hall), while men are commonly seen in Adehye Hall (all female hall) without any embarrassing or discriminatory scenes. It is also common to see male students hooting at female students who wear red in front of Casford Hall, while males in processing wear all forms of obscene clothes as expressions of their masculinity. These are forms of gender oppression and sexism. It is common to hear reports of female students’ sexual harassment by university staff and male students. Most of these emancipatory spaces are also spaces where forms of sexism, gender oppression and homophobia are prevalent in the university campuses.

Student Emancipatory Spaces in Ghana’s Universities

At the apex of the university leadership structure is the Chancellor, followed by the University Council. The chancellor is the ceremonial head of the university who presides at the ceremonies, confers on qualified persons degrees, diplomas and certificates awarded, and represents the institution at public events as its ambassador. The Governing Council forms the highest decision-making body that enacts policies, determines the strategic direction of the institution,

and ensures the attainment of institutional goals. The Chief Executive Officer of the university is the Vice-Chancellor/President deputised by the pro-Vice Chancellor/Vice-President and Registrars (Anderson et al, 2023b). The vice-chancellor is responsible for the administrative and academic matters of the institution. Each institution enjoys some level of autonomy to determine the content of academic programmes, subject to oversight of the National Council of Tertiary Education (Manuh et al., 2007). Below the apex, hierarchical appointed and elected positions for staff include Provosts, the Deans and the Heads of Departments of colleges, faculties and departments (Anderson et al, 2024b). The officers are recognised by the laws and statutes of higher education institutions.

Student representatives through the SRC, NUGS, GRASAG, hall reps, among others, usually participate in the formal university governance structures at various levels, including the university council or boards of trustees, senate/academic council, various committees and other fora. Other units through which students to express their concerns include the student parliament or assembly, Judicial Council, residence halls, academic units (colleges, schools, faculties, and departments) as well as interest groups (political, religious, and ethnic affiliations) (Anderson, 2023). Their primary aim is to represent and defend the interests of the student body, organise student social life, along with providing various services. Student associations also lobby different national structures, such as the Ministry of Education, the Ghana Tertiary Education Commission, parliamentary committees and political parties. Through these representations, students actively engage management of institutions on initiatives to improve policies, strategies and practices targeted at producing and enhancing academic learning and teaching. In terms of curricula development, student channel their contribution through the Dean of Students' directorate, which has been established to serve as a bridge between students and university management.

To cultivate students' critical thought, ensure continuous political consciousness, and participate in social activism, the various universities have developed intellectual forums where social and political debates are held. In UG, KNUST, UCC, and University of Development Studies (UDS), University of Mines and Technology (UMaT) Debate Societies have been established, and these serve as platforms where students engage in issues on public policy,

national development. These debate clubs are also known to engage in debate competitions with other universities in Kenya, Nigeria, South Africa, Ethiopia, and the United States. For instance, the R.P Baffour tournament is a prestigious annual debate competition held at KNUST, where participants are taken through rigorous training on areas such as critical thinking, ethics, philosophy, religion, business, social issues, and international relations. It has engaged and won several debate competitions globally. The UG has also consciously fostered a public intellectual culture with institutes and centres such as the Institute of African Studies (IAS), Centre for Social Policy Studies (CSPS), and the Institute for Statistical, Social, and Economic Research (ISSER), have facilitated reading groups where critical assessment of global and national policies is initiated. Policy papers are read and discussed, and in some instances, position papers are published. These centres within the universities serve as avenues for students' critical thought to be developed. For this discussion, the intellectual spaces, the student parliament or assembly, the Junior Common Room (JCR), and the Judicial Councils will be discussed.

The Junior Common Room (JCR)

Since the establishment of the universities, halls of residence have played a crucial role in the academic and social lives of university students. As a result, until the 1990s, admission was tied to one's ability to get a bed in the halls of residence. This policy was changed to allow the universities to enrol more students than the halls of residence can accommodate. This policy led to the introduction of the off-campus residential system. Until the last decade, in the university' system, each student is assigned/allocated a hall of residence in their first year.

Students in the Hall are automatically members of the Junior Common Room (JCR). It is from here that elected and appointed executives run social activities, exchange ideas and offer student services. The JCR is led by the Junior Common Room Committee (JCRC), headed by the JCR President, and includes other members, including the vice-president, secretary, treasurer, SRC Reps, and NUGS. The JCR is a physical and ideological space where students formulate and exchange ideas and thoughts. Headed by the President alongside executives including the Vice-President, secretary, treasurer, and NUGS and SRC representatives, they run hall programs such as the hall week celebration and hall cleaning. The decision to engage in activism is usually taken at the

JCRCs; therefore, they serve as an essential avenue for activism.

The Parliamentary System and Judicial Council

Like the three-armed governmental system (executive, legislature, and judiciary) practised in Ghana, the universities also run a similar system. Members of the university's parliament include the Speaker, Deputy Speaker, Clerk, President and Secretary of ISA, Presidents and Secretaries of all JCRCs and colleges, one Representative each from Non-Residential Constituencies, National President and Secretary of Obuasi Campus (KNUST SRC Constitution, 2021). The speaker of parliament is appointed by the SRC president while all the others are elected members from the other units of student leadership. They focus on issues of student interest, both academic and non-academic.

In addition to the above-mentioned units, the Judicial Council serves as an essential unit and space for student emancipation. They are responsible for the formulation of the rules of procedure for the Judicial Committee. The Judicial Council also organises workshops aimed at training Judicial Committees of the various JCRs, colleges and faculties, and the Judicial Council may formulate any other policy matters affecting the council. The Judicial Committee comprises the Judicial Council chairperson and deputies appointed by the SRC president, as well as representatives of the halls of residence, representatives appointed by the Local NUGS, and GRASAG (KNUST SRC Constitution-2021, UNER Constitution-2016).

Students face several barriers, including a lack of transparency in governance processes, insufficient resources, and a lack of continuity in student leadership roles due to the transient nature of student life. Decision-making is usually in the control of limited personnel and administrators, thus limiting student participation. These institutions described above seek to foster inclusive governance for all stakeholders in decision-making processes. In the university context, this means giving students a real voice in how their institution is run. In practice, student participation in the universities' leadership and governance structures is ad hoc. This is because students' voices are accorded equal magnitude in the decision-making of the universities. For instance, when KNUST decided to ban all JCRC activities, student leaders protested at the University Council. Nevertheless, this protest was

not adhered to until recently, when the decision was revoked. This often leads to frustration and, in some instances, further activism. Therefore, Furthermore, governments and university authorities may exert pressure or limit student dissent through surveillance, intimidation, or outright repression.

In the 21st century, another crucial space created by students for activism is the digital space. As a result of globalisation, the social media backed by technology has become an essential space that facilitates student organising and mobilisation. Social media platforms like WhatsApp, Meta/Facebook, X/Twitter, Instagram, and TikTok are known spaces where students highlight student leadership corruption, lack of accountability, and repressive university management decisions. This facilitates mobilisation across campuses and institutions. These platforms provide new spaces for the expression of student ideals and where students can envision and articulate alternative futures. They serve as platforms to connect university students all over the country for common causes.

Conclusion

The history of university students has proven that universities serve as spaces that nurture patriotism, accountability, social justice, fight injustice, corruption, arbitrary dismissals, economic mismanagement, abuse of power, political abuses, economic mismanagement and favouritism. Core student socio-political activism from the 1960s has focused on fighting legalised corruption and misappropriation of public funds in government circles, economic mismanagement, the high cost of living in Ghana, flagrant suppression of fundamental human rights of freedom of speech, human rights violations and mismanagement of the country's resources. Student political activism holds a significant place in Ghana's history. Students have served as the conscience of the nation and constantly engage university administration and government over socio-economic and political policies they consider unfavourable. In so doing, students have overtly and covertly created emancipatory spaces which enhance the development of their critical thoughts and ideas, which are sometimes channelled into activism. The drift in students' activism is a result of the expansion, diversification and privatisation of African higher education; increased participation of political parties in student elections and student politics; the conscious political competition and effort to recruit political followers from among students.

Additionally, the institutionalisation of student leadership in higher education toned down the friction between students and administration. This critical era of student activism has somewhat changed in the 21st century as the place of students has been taken over by political parties and other civil society

groups. While these forms of activism have dwindled on the national stage due to divisive student politics, students continue to fight economic mismanagement, abuse of power, and illiberal management policies of university management and student leadership.

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SUMMARY OF POLICY ROUNDTABLE ON “MAKING HIGHER EDUCATION WORK FOR AFRICA”

The roundtable brought together the ideas and proposals presented in the two days of the conference. It was chaired by Professor Clifford Tagoe, Chair of the project Steering Committee, and featured five speakers namely, Prof. Michael O. Faborode from Obafemi Awolowo University, Nigeria, Prof. Peter Wafula Wekesa from Kenyatta University, Kenya, Prof. Kelleh Mansary from Fouray Bay College, Sierra Leone, Dr. Evans Takyi of the Ghana Tertiary Education Commission (GTEC), Accra, and Mr. Samuel Sasu Adonteng from the All-Africa Students Union (AASU), Ghana. Professor Tagoe elicited the perspectives of the five speakers by posing intriguing questions that centred on transformative strategies for African higher education; creation of a robust and effective system capable of tackling the challenges of the 21st century; the rapidly evolving global context; the growing African population; and the need for the current generation to develop educational systems to cater for future needs.

Responding to the questions posed by the Chair, Professor. Michael **Faborode**, who was the first speaker, highlighted that intentionality is needed in transforming African higher education. He argued that while research is crucial, it must be relevant, impactful, and align with societal needs. He stated that universities should specialize in areas where they can excel while maintaining shared goals for collective progress. Prof. Michael Faborode called for Afrocentrism to be incorporated into curricula and research agendas to ensure that higher education reflects African priorities. He mentioned frameworks such as the African Union's Agenda 2063 and the Sustainable Development Goals (SDGs) and emphasized the need for their alignment with educational goals.

Professor Peter Wafula **Wekesa** on his part, stressed the importance of understanding the challenges facing African higher education from a historical perspective. He echoed the importance of fostering partnerships and collaborations across the education ecosystem, involving key stakeholders such as students, staff, management, governments, and the broader community. Professor Wekesa argued that many African universities struggle to demonstrate their relevance and impact to governments, which is often used to justify inadequate or reduced funding. He called on universities to prove their value and alignment with national goals to secure long-term support.

Professor Kelleh Mansaray shared insights on the challenges and opportunities in African higher education and drew from his experiences at Fourah Bay College, the oldest university in West Africa. He argued that the impact of Sierra Leone's civil war from 1992–2002 contributed to severe brain drain and this has weakened the college's capacity to fulfil its mandate. Despite these challenges, he argued that Fourah Bay College has made notable progress, including partnerships with Imperial College, London, and Starlink to improve connectivity, as well as establishing innovation hubs.

The critical role of regulatory bodies in transforming higher education in Africa was the key focus of Dr. **Takyi's** contribution. He revealed Ghana Tertiary Education Commission's collaboration with African quality assurance and regulatory organizations in ensuring quality standards in education to drive innovation. Dr Takyi noted that reliance on government funding is unsustainable and advocated for university-industry partnerships to support research, curriculum development, and workforce-aligned training.

Contributing to the discussion, Mr. Samuel **Sasu Adonteng** called for actionable steps to prepare the continent's youth for future leadership and professional roles. He underscored the importance of equipping students with the resources and skills needed to make meaningful contributions by positioning student empowerment as a cornerstone of progress in higher education.

The speakers concluded the session by unanimously prescribing some recommendations to deal with the challenges they had enumerated in their contributions. Mainly, they called for the need for policy and governance reforms, and the decolonization and democratization of curriculum and teaching. The speakers also drew attention to the implications the digital revolution has for higher education. They highlighted the relations between African universities and their publics and suggested that African higher education should be positioned as a critical public good in search of epistemic justice to facilitate Africa's development.

APPENDIX 1

List of Participants (in person)

S/N	Title	Name	Institution
1	Prof.	Aba Bentil Andam, FGA	Ghana Academy of Arts and Sciences, Accra
2	Dr.	Abdul-Gafar Tobi Oshodi	Lagos State University, Nigeria
3	Dr.	Abena Engmann	Academic City University College
4	Prof.	Abukari Alhassan	University of Development Studies, Tamale
5	Dr.	Adams Yunus	Baraka Institute, Accra
6	Ms	Adda Goudougou Marie Aimee	Kesmonds International University, Cameroon
7	Prof.	Ahmed Jinapor Abdulai	Ghana Tertiary Education Commission (GTEC)
8	Prof.	Akilagpa Sawyerr, FGA	Ghana Academy of Arts and Sciences, Accra
9	Prof.	Albert Luguterah	CKT University of Technology and Applied Sciences, Navrongo, UER, Ghana
10	Ms.	Benedicta Ataa Owusu	Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
11	Prof	Bernard Bingab	University of Education, Winneba
12	Prof.	Clifford Tagoe, FGA	Ghana Academy of Arts and Sciences, Accra
13	Prof.	Daniel Obeng-Ofori	Catholic University, Sunyani
14	Mr.	Dennis Adjasi	National Council for Curriculum and Assessment, Accra
15	Mr.	Emmanuel Abbey	African Research Universities Alliance (ARUA), Accra
16	Mr.	Emmanuel Nii Baddoo	University of Ghana
17	Mr.	Emmanuel Sasu Boakye	Kwame Nkrumah University of Science and Technology, Kumasi
18	Prof.	Ernest Aryeetey, FGA	Ghana Academy of Arts and Sciences, Accra
19	Dr.	Esther Amoako	University for Development Studies, Tamale
20	Dr.	Eugenia Ama Anderson	Kwame Nkrumah University of Science and Technology, Kumasi
21	Dr.	Evans Takyi	Ghana Tertiary Education Commission (GTEC), Accra
22	Ms.	Ewuraba O Addo	African Research Universities Alliance (ARUA), Accra
23	Dr.	Faisal Garba	University of Cape Town, South Africa
24	Dr.	Fatmatta B. Taqi	Fourah Bay College, University of Sierra Leone
25	Prof.	Felix Asante	University of Ghana, Legon
26	Dr.	Francis Ansah	University of Cape Coast, Cape coast
27	Dr.	Francis Awuah	Kwame Nkrumah University of Science and Technology, Kumasi
28	Mr.	Francis Kokutse	Journalist, Accra
29	Prof.	Fred McBagonluri	Academic City University College, Accra
30	Prof.	Frederick Yeboah Obese	University of Ghana, Legon
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32	Miss.	Gladys Quarshie	University of Ghana
33	Dr.	Hamidu Damba	University for Development Studies, Tamale
34	Dr.	Hasiyatu Abubakari	University of Ghana, Legon

35	Prof.	Herbert Kwabla Dei	KAAP University College, Legon
36	Ms.	Humade Cindy	Radio Universe, Univ of Ghana, Legon
37	Prof.	Isabella A. Quakyi, FGA	Ghana Academy of Arts and Sciences, Accra
38	Prof.	Ivan Addae-Mensah, FGA	Ghana Academy of Arts and Sciences, Accra
39	Prof.	James Ephraim, FGA	Ghana Academy of Arts and Sciences, Accra
40	Mr.	Joel Atsu Srebi	Ho Technical University, Ho
41	Prof.	John Gyapong, FGA	African Research Universities Alliance (ARUA), Accra
42	Prof.	Jonathan Ayertey, FGA	Ghana Academy of Arts and Sciences, Accra
43	Prof.	Joseph Atsu Ayee, FGA	Ghana Academy of Arts and Sciences, Accra
44	Prof.	Kelleh Gbawuru Mansary	Fourah Bay College, University of Sierra Leone
45	Prof.	Kofi O. Nti, FGA	Ghana Academy of Arts and Sciences, Accra
46	Dr.	Liticia Effah-Manu	Ho Technical University, Ho
47	Dr.	Lucy Agyepong	Academic City University College
48	Prof.	Michael O. Faborade	Obafemi Awolowo University, Nigeria
49	Prof.	Nana Akua Anyidoho	University of Ghana, Accra
50	Dr.	Patrick Swanzey	Kwame Nkrumah University of Science and Technology, Kumasi
51	Prof.	Paul Amuna	University of Health and Allied Sciences, Ho
52	Dr.	Peter Wafula Wekesa	Kenyatta University, Kenya
53	Dr.	Regina Opong	University of Cape Coast, Cape Coast
54	Mr.	Robert Agboyi	Ho Technical University, Ho
55	Prof.	Roseemma Entsua-Mensah, FGA,	Ghana Academy of Arts and Sciences, Accra
56	Prof.	Prof. Samuel Agyei-Mensah, FGA	Ghana Academy of Arts and Sciences, Accra
57	Mr.	Samuel Sasu Adonteng	All African Students Union, Accra
58	Mr.	Stephen Mensah	Joy News, Accra
59	Prof.	Takyiwaa Manuh, FGA	Ghana Academy of Arts and Sciences, Accra
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75	Mr.	Obadiah Ziema
76	Mr.	Osei Junior
77	Mrs	Patience Adzamli
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2.	Mr.	Aikins Kwadwo
3.	Mr.	Aliyu
4.	Mr.	Amos Amankwa
5.	Ms.	Bernice Agudu
6.	Prof.	Biney
7.	Dr.	BioDun J Ogunday
8.	Ms.	Carlene Edie
9.	Ms.	Cynthia Ameyaa
10.	Dr.	Cynthia Addoquaye
11.	Ms.	Cyrine Kortas
12.	Mr.	Daniel Ofori Mintah
13.	Mr.	Delon
14.	Prof.	Dorcas Osei-Safo
15.	Prof.	Dzodzi Tsikata
16.	Ms.	Ekua Ekumah
17.	Dr.	Eugenia Date-Bah
18.	Ms.	Evelyn
19.	Prof.	Frederick Ato Armah
20.	Prof.	Grace Diabah
21.	Dr.	Grace Ofori-Sarpong
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26.	Dr.	Irene Ayi
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28.	Dr.	Justice Achoanya Ayam
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30.	Prof.	Kofi Osei-Frimpong
31.	Mr.	Kole Odotola
32.	Prof.	Lade Wosornu
33.	Ms.	Maadzo
34.	Mr.	Makai Daniel
35.	Mr.	Michael
36.	Dr.	Moses Kayode
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38	Prof.	Nana Opoku-Agyeman

39.	Mr. Nanakow
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41.	Mr. Olajumoke Yacob
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45.	Ms. Ralieu Nortey
46.	Mr. Richard Dogbey
47.	Mr. Richard Okrah
48.	Prof. Samuel Sefa-Dedeh
49.	Prof. Sagare Nokoe
50.	Justice Sophia A. B. Akuffo
51.	Mr. Temitope Maberu
52.	Prof. Toyin Falola
53.	Prof. Wisdom Tettey
54.	Mr. Yakubu Ochefu
55.	Ms. Zeinab Abdulai Ayariga

EVALUATION FORM

GAAS PROJECT ON ‘MOTIVATING HIGHER EDUCATION REFORMS IN GHANA-TOWARDS EQUITY AND SUSTAINABILITY’

CLOSING CONFERENCE ON “TRANSFORMING UNIVERSITIES FOR 21ST CENTURY AFRICA”

You have participated in the above conference. Please spare a few minutes to complete this form. Thank you.

1. The topics presented under the project were relevant to the development and higher education context in Ghana and Africa.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree

2. The project concept and format were relevant to the project theme and the conference theme.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Neither agree nor disagree
 - ☐ Disagree
 - ☐ Strongly disagree

3. The “lessons learnt” from the project could impact access and sustainability in the higher education sphere.
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree

4. Conferences of this nature can help to transform universities for 21st century Africa
 - ☐ Strongly agree
 - ☐ Agree
 - ☐ Disagree
 - ☐ Strongly disagree

5. How would you rate the overall organization of the event on a scale of 10?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

6. Would you like to attend or recommend others to attend similar events organized by the Academy?

- ☐ Yes
- ☐ No

7. Other comments/recommendations.

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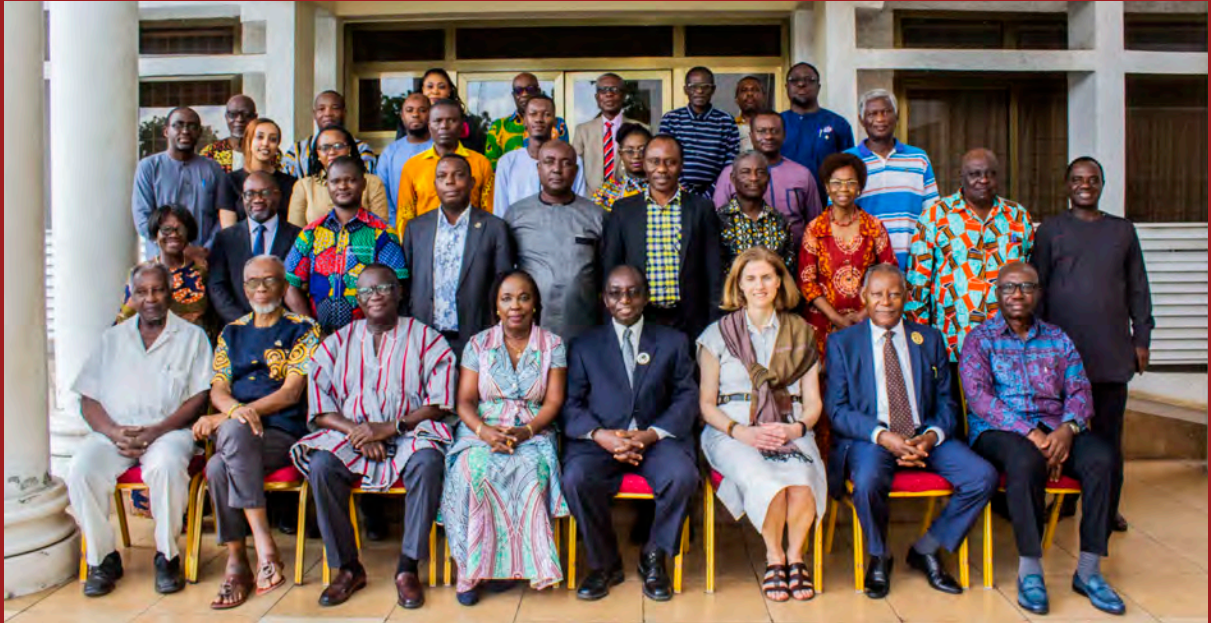
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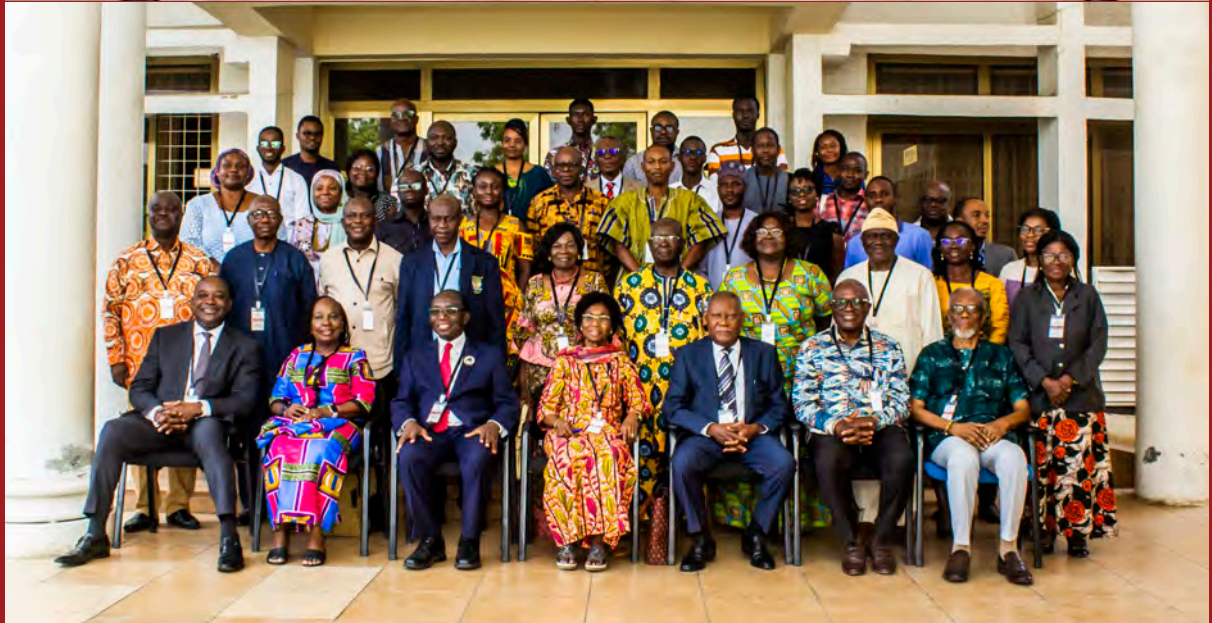
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THANK YOU







The Academy is a learned society established by an Act of Parliament in 1959 to promote the study, the extension and the dissemination of knowledge of all the Arts and Sciences. With a membership of over a hundred living Fellows drawn from all fields of learning, the Academy has from its inception been charged with a key role in thought leadership and making inputs into policymaking through research and evidence-based advice.

AIMS AND OBJECTIVES OF THE ACADEMY:

The aims and objects of the Ghana Academy of Arts and Sciences are to:

- a) Promote the study, extension and dissemination of knowledge of Arts and Sciences.
- b) Establish and maintain proper standards of endeavour in all fields of the Arts and Sciences.
- c) Recognize outstanding contributions to the advancement of the Arts and Sciences in Ghana.
- d) Do such other things as are conducive or incidental to the attainment of all or any of the foregoing objects.

MISSION:

The mission of the Ghana Academy of Arts and Sciences is to encourage the creation, acquisition, dissemination and utilization of knowledge for national development through the promotion of learning.

OUR VALUES:

Professionalism and Commitment: a determination to place the experience, knowledge and energies of the finest minds in Ghana at the disposal of the nation is the hallmark of every undertaking.

Excellence: this is the essence of the Academy's existence; by selecting the most eminent intellectuals as Fellows of the academy establishes excellence as a pre-requisite in every undertaking. It continues to inspire excellence in its membership and in the work of its secretariat to ensure that all its outputs are world class.

Integrity: in all things, the Academy strives to exercise honesty, objectivity and independence of thought. Its contribution to Ghana's academic and intellectual wealth is motivated solely by the determination to serve the best interests of society.

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