

Enhancing employability opportunities for Pharmacy students; a case study of processes to implement competency-based education in Pharmacy in Kenya

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Abstract

This paper challenges the western concept of graduate employability as a measure of student success through a case study of a collaboration between pharmacy colleagues in universities in Nairobi, Kenya and Nottingham, UK. As Pharmacy programmes globally adapt their courses to a competency-based education (CBE) approach, we outline the implications of this for graduate success in Kenya. The Ministry of Education in Kenya recently announced a move to CBE across all educational sectors. This has led to a re-configuring of how pharmacy is not only taught, but also assessed, and what success means for pharmacy graduates in Kenya. The collaboration has highlighted the need for key stakeholders to work together and influence policy change, and redefine employability in terms of behaviours that meet country-wide needs. We outline some of the processes and collaborations we formed to redevelop pharmacy programmes in Kenya, and suggest recommendations for continuing partnerships and sustainability.

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1 | INTRODUCTION

Within this paper, we consider definitions of graduate employability from a theoretical perspective and offer an approach through a case study of curricula reform in Pharmacy with colleagues in Kenya. We consider how graduate employability is marked as a measure of student success in England and examine how this can be re-defined through a collaborative project to transform the pharmacy curriculum in Kenya. We outline our project with Kenyan colleagues to plan and implement a competency-based education model (CBE) in Pharmacy and define characteristics of CBE. As international healthcare professional organisations, including the International Pharmaceutical Federation (FIP, 2017) advocate, pharmacy programmes globally are being encouraged to adapt to a CBE process. We consider the implications of this for graduates and academics in Kenya, and how this move to CBE aligns with the Ministry of Education's (MoE) commitment to preparing students to meet the country-wide needs. We examine the key roles the Pharmaceutical Society of Kenya (PSK) and Commission for University Education (CUE) have in this move to CBE, and consider how CBE may be instrumental in ensuring pharmacy graduates in Kenya are able to support the country-wide health needs as a result of our collaboration. Our partnership is founded on the World Health Organisation's (WHO) principles of fair and equal access to a high quality of healthcare in partnership with communities, and education and protection for healthcare employees (WHO, 2016). The principles support progression of the United Nations' (UN) sustainable development goals (SDGs), in particular goals 3, 4 and 5 focusing on health, education, and empowering women and girls around the world (UN, 2015).

2 | DEFINING EMPLOYABILITY

Defining employability is problematic due to broad perspectives ranging from individual definitions, to those from large corporations. Lo Presti and Pluviano (2016) offer a synopsis of 'employability' from researchers spanning decades and conclude that for them, employability is about 'matter and form' (Lo Presti & Pluviano, 2016, p. 207). They argue that employability is about more than the proficiencies we encourage students to learn/develop—the 'matter'. Moreover, employability is also about the attitudes students develop in persevering and staying positive about their own professional development—the 'form'. Employability is often considered by employers as 'work-readiness' of an individual employee (Mason et al., 2009). This indicates an aspiration that new graduates possess competencies to productively contribute to a role and an organisation's objectives. Within English universities, employability has been closely linked with closing the gaps that employers claim graduates arrive with, and universities are under pressure to close these gaps by planning skills development sessions that endeavour to lead to job success in varied contexts (Frankham, 2016). Consequently, graduate employability is critical in measuring student outcomes and universities collect data on graduate destinations that form part of the metrics for university league tables. Pharmacy programmes enable graduates to learn about the 'form' relating to their profession while studying the 'matter', and thus, the graduate employability data generated from pharmacy is reflective of the success of such programmes (HESA, 2020). However, it is important to note that following graduation, all students must complete a pre-registration year and then secure permanent employment. This can be a challenge as although there is a shortage of qualified pharmacists to meet country-wide demands, the choices available may not be in their preferred sector (Burns, 2019). Consequently, the real measure of success of pharmacy programmes can be questioned, but in terms of success in employability in 'matter' and 'form' (Lo Presti & Pluviano, 2016), pharmacy programmes are successful.

Defining employability from a Kenyan context is challenging as there is no formal process to collect graduate destinations that can provide insight into the roles that graduates are able to secure. However, there is a clear need to identify industry needs and ensure that graduates are skilled in adapting their higher education specialist knowledge and experience to the roles they take on (McCowan, et al., 2018). Pharmacy is well placed, in that

graduates have a career trajectory available for them to embark on within healthcare. We advocate for a definition of employability that considers societal and country-wide needs as outlined within the UN's SDGs through the implementation of a CBE approach.

3 | BACKGROUND AND CONTEXT

The Master of Pharmacy (MPharm) course at the University of Nottingham and Malaysia is designed to prepare students for careers that could span 40 years or more. Over this time, pharmacists will undoubtedly see major changes in all areas of the profession. Opportunities will be created through new medicines, new clinical services and new financial models for healthcare delivery. Graduates need to demonstrate their value to the patient and to the healthcare system as innovation, new business models and healthcare reforms challenge current modes of practice (Frenk et al., 2010). The curriculum at the University of Nottingham is continuously developed and refined with input from employers such that it meets the evolving needs of the profession. This is underpinned by the School of Pharmacy's extensive network of healthcare and pharmaceutical industry contacts and collaborators. The School aims to provide students with an education that prepares them to be excellent in current practice from the day they graduate, with a depth of understanding of the scientific foundations of pharmacy that will allow them to stay at the cutting edge of the profession. The School employs a range of innovative teaching and learning methods including integration of pharmaceutical science and clinical practice, role play, gamification and peer teaching and has experience of developing on-line courses and teaching support materials. The MPharm degree prepares students to contribute to, and hopefully lead, new initiatives that shape pharmacy, improve patient care and sustain the UK's contribution to the worldwide pharmaceutical industry. The Kenya-Nottingham Higher Education Transformation Partnership was designed to engage with Kenyan colleagues in healthcare, education and industry to reinvigorate the current outdated pharmacy courses in Kenya. The aim of the partnership is centred on the need to match learning outcomes to the needs of the population and address the shortages of specific skills in pharmacy. We collaborated with Kenyan colleagues, in partner Kenyan universities to transform their pharmacy degrees with a focus on developing the pharmacy profession in Kenya.

Kenya Vision 2030 (vision2030.go.ke, 2008) recognises the critical role played by education, research and development in accelerating economic development. This, the vision states, will be done through lifelong training and education and enhancement of closer collaboration between industry and universities. It aims to develop Kenya into a 'globally competitive and prosperous and newly industrialised middle-income country providing a high quality of life to all its citizens in a clean and secure environment by 2030' (Kenya Vision 2030, 2020). Vision 2030 also recognises that institutional and instructional design must both be changed in order to transform education. For example, in order to have a positive impact on health systems, professional education institutions must develop optimum instructional design, which includes criteria for new students' admission, competency-based approaches to curriculum and team learning, channels of instruction for teaching/learning, and career pathway building processes (Frenk et al., 2010). Like many developing countries, Kenya relies heavily on imports of medicines to serve the needs of its population and does not benefit from the economic gains of the export of medicines like some other countries. Kenya has therefore identified a need to develop an indigenous industry, generating products based upon its own intellectual property as part of its Kenya Vision 2030. This will require a pipeline of pharmaceutical science graduates with the necessary combination of technical, business and entrepreneurial knowledge/skills to support the new innovative businesses and supply chains that are necessary to achieve this aim.

An initial scoping workshop with Kenyan partners identified the need for a curriculum with a greater emphasis on clinical, social/behavioural and administrative sciences, including the requisite educators in these disciplines, especially those with pharmacy practice and inter-professional collaboration experience, and the introduction or expansion of practice experience in the curriculum. Additionally, there is a need for developing preceptors, practitioner educators

and industrial educators. It is also important to begin to recruit the right students and there is evidence of retention of rural students in jobs after graduation if their training includes periods spent in rural areas (Worley, 2008).

Our work on developing employability and providing placements in pharmacy practice will lead to improved employability outcomes for pharmacy graduates in Kenya. This, if properly communicated, can improve society's perceptions of the affordability of the courses, making marginalised learners more likely to participate. The move to CBE in Kenya is timely as we can collaborate with our Kenyan colleagues to ensure employability is reflected in the identification of the country's needs as per Kenya's Vision 2030, thereby addressing the apparent disconnect between Kenyan graduates and industry-led requirements (Kalei, 2016).

4 | COMPETENCY-BASED EDUCATION

Competencies are defined as the 'underlying characteristics of an individual that is causally related to effective performance' (Mills et al., 2005) and refers to knowledge, skills, attitudes and behaviours (FIP, 2012). This concept is one of the key drivers for higher education to move to CBE in order to align students' education with the need for them to obtain the necessary competencies for the job (Frenk et al., 2010; Mulder, 2017). To equip new graduates with the necessary competencies to deliver an effective and desired performance continuously in practice, CBE is a crucial framework for designing and implementing education focusing on the necessary competencies of professionals, and establishing observable and measurable performance metrics as educational outcomes (Gruppen et al., 2012).

In healthcare professional education, the requisite competencies of professionals are determined by the societal and health needs of a population and the demands from the health system in the country. Frenk et al. (2010) illustrate the interdependence of a health system and education linked with population, which is the core concept of CBE (Bruno-Tomé et al., 2019). CBE has, therefore, received increased attention in healthcare professional education due to the increasing demands on our health systems and consequently, for healthcare professionals, and due to rapidly changing environments.

This educational shift has been advocated for in pharmacy and pharmaceutical education for the last decade. The International Pharmaceutical Federation (FIP) globally advocates the needs-based education model (FIP, 2017), and developed the Global Competency Framework (GbCF) (FIP, 2012). Developing a national competency framework is desired for meaningful systems for accreditation, licensure and continuing professional development for healthcare professionals (WHO, 2013). A competency framework embraces competencies and associated behavioural statements to measure the competencies in order to achieve effective performance in the areas of work and practice (Mills, 2007). Adopting or developing a national competency framework is crucial for pharmacists especially as law and regulations related to medicines, as well as responsibilities and roles of pharmacists vary across countries. A collaborative developmental process of a national competency framework is crucial. Bader et al. (2017) describe an interdependent relationship between education, regulation and practice. The dynamic relationship balances the best interests of the professional and the public, and drives change and advancement of the profession. These three components or sectors should collaborate on the national competency framework for pharmacists which checks and balances each other to meet societal needs and demands. If there were a mismatch in the needs of a population and demands from the health system of a country, this can lead to ineffective use of limited resources in the health system, and thus fail to establish a seamless transition from education to work, a core driver of the shift to CBE.

5 | CURRICULUM DEVELOPMENT IN KENYA

The World Health Organization (WHO) estimates that at least half of the world's population are lacking access to sufficient health-care services (WHO, 2019). Taking into account the magnitude of people failing to receive

adequate healthcare, and the impact this has on economic and human flourishing, the WHO has committed to striving for Universal Health Coverage (UHC). UHC denotes that 'all individuals and communities receive the health services they need without suffering financial hardship' (WHO, 2019). This is reflected firstly in Kenya's own long term development agenda, Vision 2030, and secondly, in the realisation of fundamental human rights, including the right to health, which is supported by the Constitution of Kenya 2010 (Government of Kenya, 2010). The Kenya Health Policy, 2014–2030 focuses on the key principles of health, human rights and economic development in line with global agendas incorporating the United Nation's (UN) Sustainable Development Goals (SDGs) (Kenya MoH, 2014). This document outlines the importance of Human Resources for Health (HRH), defined as 'the stock of all people engaged in actions whose primary intent is to enhance health', in achieving UHC in line with the WHO's 'Global Strategy on Human Resources for Health: Workforce 2030' (WHO, 2016), which emphasises the importance of an equitably distributed workforce equipped with appropriate competency, motivation and empowerment to deliver quality healthcare relevant to sociocultural needs and expectations of individual populations (WHO, 2016). Therefore, it is clear that national and global priorities are focused on creating healthcare that supports the individual and the society as a whole in the context of sustainable development. This highlights the requirement to produce undergraduates that are not only skilled and knowledgeable, but also capable of implementing change and progress when entering the healthcare workforce, as any health service is only as effective as those responsible for providing it (WHO, 2014).

In the setting of sustainable development, the purpose of higher education is not only to create economically productive individuals, but to also contribute to a wider aim of change and better quality of life for all. From the sustainable development perspective, the concept of valuable work is greater than the technical fulfilment of a job (Tikly, 2020). Moreover, education has a greater role than the supply of employable graduates (Vladimirova & le Blanc, 2015), as illustrated in Figure 1.

One such approach to equip healthcare professionals with the necessary prerequisites to engage in patient and population-centred healthcare in a transformative, ethical, local and globally responsive way is through the CBE approach. Developing competencies provides criteria for the 21st century health professional capable of adapting to rapidly changing local and global conditions whilst also cultivating values around social accountability (Frenk et al. 2010). In doing this, Frenk et al. (2010) suggest that effective education should build upon successive levels of learning, starting with informative, then formative, and finally transformative learning. Where transformative learning is said to involve a threefold shift from previous practices of: (i) rote fact learning to mobilisation of knowledge enabling learners to critically engage, analyse and synthesise information for decision making; (ii) gaining professional credentials to achieving core competencies conducive to multi-professional health systems; and (iii) non-critical adoption of educational models to adapting global resources to address the local needs and context. In fact, many countries in Africa are in the process of moving primary and secondary education towards competency-based curricula, however 'many curricula remain heavily content driven, linguistically and cognitively too demanding, and irrelevant to local contexts and the needs of learners' (Tikly, 2020, p. 25). Wongnaa and Boachie (2018) outline the lack of opportunities that Ghanaian universities offer in preparing graduates for the world of work and suggest that a competency-based curriculum may be a way forward. This will offer universities and industrial stakeholders' opportunities to collaborate and design teaching and assessment approaches that meet industry demands.

6 | METHODOLOGY

Our initial work in re-developing the pharmacy curriculum with our Kenyan colleagues started with a general overview of the current pharmacy curriculum in Kenya and a review of the structure of the programme. Our Kenyan partners clarified the similarity between the programmes and stressed that any modifications must be undertaken with the support of the Pharmacy and Poisons Board (PPB), the regulatory authority, which oversees

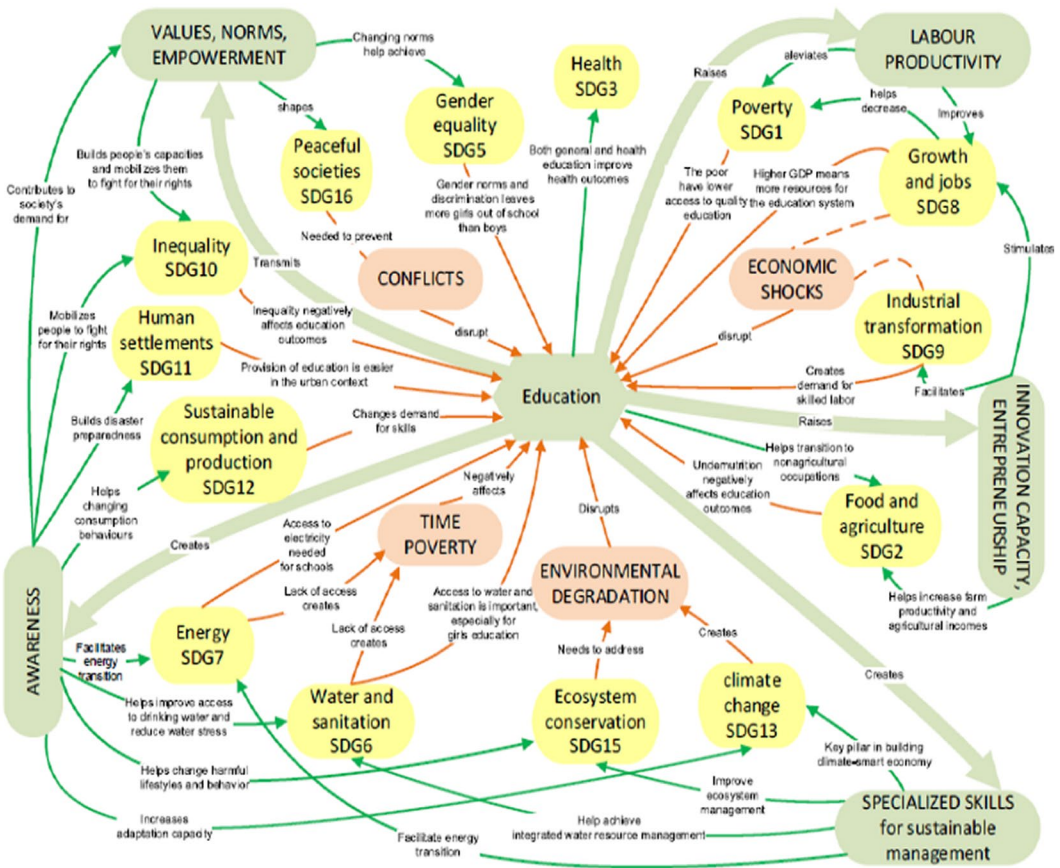


FIGURE 1 Simplified representation of the links between education and other SDG themes, mapped out according to UN flagship reports. SDG 14 (Life below water) and SDG 17 (Partnerships for the Goals) are not represented due to a lack of links between them and education in the sample. (Vladimirova & le Blanc, 2015, p. 23)

all the pharmacy programmes, and the Commission for University Education (CUE), the quality assurance authority for universities in Kenya.

It was agreed that during preliminary fieldwork at each of the partner universities in Kenya, we would meet with pharmacy teams to understand their perspectives on curriculum reform, followed by focus group discussions with pharmacy students in their 1st and final years on possible changes to the curriculum, pedagogy and assessments. It was critical to gather the views of students embarking on their professional journeys as well as those at the end. The final year students had completed placements (or ‘attachments’ as they are known as in Kenya) in industry and hospitals across the country and were planning their careers following these varied experiences. Prior to the focus group discussions, students’ views were gathered from questionnaires that had been distributed to understand how they had reached their decisions as to their choice of course and university, as well as capture their future aspirations.

Following this preliminary fieldwork, a strategy to modernise the curriculum was co-created through a series of communications including workshops and a literature review. Colleagues from across the partnership collaborated to design, plan and deliver a series of workshops in Kenya to share aspects of curriculum change with a strong emphasis on pedagogy and assessment founded on the principles of CBE. Representatives from CUE and the PPB were invited to some of the workshops, as well as industry partners and preceptors. Critically, the CEO of

the Pharmaceutical Society of Kenya (PSK), the pharmacists' professional development organisation, participated in the workshops, and it was decided that PSK, as the professional body for pharmacy, would be a key driving force for the curriculum changes agreed during the workshops. Each partner university would take responsibility for their curriculum review and re-development following these workshops, supported by the project team, CUE, PPB, PSK and industry partners as appropriate.

7 | PRELIMINARY FINDINGS

The 5-year Pharmacy course structure in Kenya includes 2 years of General Science with 2 mandatory units as stipulated by CUE and PPB—'HIV and Aids' and 'Communication'. During staff discussions, Kenyan colleagues expressed a need to embed more pharmacy-related content within the first 2 years of the programme, while acknowledging the challenge therein; the Pharmacy programme must follow directives from PPB, and any changes would need PPB and institutional approval. The Pharmacy colleagues in Kenya also expressed a current disconnect between educational and healthcare institutions, and the needs of the population.

However, during focus group discussions with students across 3 HEIs, the students found value in the 2 years of General Science as they provided a 'strong foundation' and a scaffold for their transition from school to HE. The students expressed a need to diversify the teaching approaches, and a more balanced approach between theory and practice, which staff also highlighted as an issue they were working together on. Additionally, the students expressed a need for more clinical practice as well as more explicit teaching of finance and money management with regards to setting up a business (entrepreneurial knowledge and skills).

Critically, staff and students both emphasised the need to include more 'patient-oriented pharmacy', which is currently addressed during the students' placements in their 4th year of study.

The questionnaires distributed to the 1st and final year students highlighted the reasons students chose their specific university and included some insight into students' future career plans. All the final year students expressed a need to expand work placement opportunities in terms of frequency and variety, as well as a need to begin these links from the first year of study. Interestingly, one partner university has expanded its opportunities for students to further develop their understanding of pharmacognosy (plant-based medicine) by constructing a National Phytotherapeutics Research Centre. This could be due to the fact that Kenya is keen to encourage use of its own natural resources in developing medicines as a result of its historical and cultural traditions and ethos, as well as lack of accessibility to imported medicines, particularly within community pharmacy and rural settings, and in the context of affordability for many Kenyan citizens.

8 | CURRICULUM DEVELOPMENT STRATEGY

The strategy for curriculum development, therefore, was designed in such a way that collaboration between partner institutions, facilitated by the project team, could take place. It was considered vital that a variety of local stakeholders engage in ownership and creation of context-relevant learning outcomes. In the current climate of globalisation; technological, epidemiological, and demographical shifts; rapid expansion of healthcare knowledge and practices, the gap between the current healthcare demands of the Kenyan population and the preparedness of the Pharmacy students faced with tackling these challenges is critical.

Although education alone cannot achieve UHC and solve the workforce crisis, it is an important part of a wider picture of intersecting systems, structures and infrastructure which is highlighted in Figure 1. In order to facilitate discussion and identify the role of the pharmacist in serving the population, the involvement of a wide team of stakeholders was deemed necessary. This includes stakeholders not only from within the pharmacy profession, healthcare and education but also from wider systems such as governmental and other healthcare professional

cadres. This provides not only the opportunity for wider discussion and co-creation but also for networking, interprofessional collaboration and alignment of visions for an allied approach. In terms of sustainability, the local ownership and co-creation of the new locally derived, context relevant competencies for pharmacists will be crucial due to understanding of cultural differences and maintaining momentum to affect real change (Arakawa & Anderson, 2020).

Consequently, PSK was approached as lead collaborator in an attempt to emphasise Kenyan ownership and unified drive from within the pharmacy profession rather than from the separate HEIs. As the different HEIs are varied and disparate to one another, this 'top-down' approach to influence curriculum redesign, rather than attempting to individually convert each separate institution's curriculum, was adopted as a pragmatic approach to achieving health professional education reform and a blueprint for undergraduate curriculum review.

In addition, during jointly meetings, it transpired that CUE plays a vital role in how universities adapt to CBE. CUE is the regulatory and quality assurance body for university education and is mandated by the Ministry of Education to ensure universities in Kenya adhere to the core principles of 'professionalism, integrity, teamwork, accountability and responsiveness' (CUE, 2020). It was agreed that in future meetings, representatives from CUE would be invited to listen and understand the curriculum development process, and when appropriate, to meet with pharmaceutical industry stakeholders. Such a move will engage PSK, university curriculum developers and CUE to work together to ensure Pharmacy graduates are aware of the options available for them, and for pharmaceutical industry stakeholders to communicate their needs in their future workforce. As outlined earlier, Pharmacy students are required to undertake work placements in hospitals and community pharmacies during their final year of study, therefore including stakeholders in shaping the curriculum may lead to strengthening relationships between all, and so lead to meeting country-wide needs (Anamuah-Mensah et al., 2007).

9 | COVID-19

2020 has brought challenges to all countries with schools and universities closing and people encouraged to work and study from home. At the start of the pandemic in 2020, Pharmacy graduates were not able to graduate, thus adding to the shortage of skilled pharmacists in Kenya. This has since been resolved within some universities, however the city of Nairobi placed a curfew on its citizens which has led to a significant impact on the healthcare of its people. Patients have not been attending hospital appointments for a number of reasons, including fear, costs of care, lack of transportation (Njue, 2020), as well as delays in access to medicines due to transportation issues (Okereke et al., 2020). Despite this, community pharmacists in Kenya, as in other parts of the world, have provided an essential service in ensuring all have access to necessary healthcare, and supporting people in understanding the nature of the virus and how to combat it (Alves de Costa et al., 2020). As COVID-19 is such a new phenomenon, the role of pharmacists continues to evolve and adapt to the changing circumstances to ensure they meet the needs of the local and wider community. Kenyan colleagues have been forced to diversify their teaching approaches with more online teaching, and are planning to re-evaluate some of the pharmacy modules, particularly around clinical practice in response to the pandemic.

10 | CONCLUSION

Pharmacy programmes in Kenya are undergoing transformation as a result of the government's decision to adapt to CBE across all the educational sectors, and universities must follow suit. As a result of our project, we suggest that to support the move to CBE, key stakeholders are invited to collaborate and form working committees to ensure that Pharmacy graduates are provided with the knowledge, skills and attributes to be successful in their chosen career paths. Involving a regulatory body such as CUE is a novel initiative that may require ground rules to

be established. However, ensuring that PSK leads on this initiative may smooth the way in establishing a working relationship with CUE, PPB, industry stakeholders and academic teams from each university. This may be an approach that pharmacy teams in the global north can learn from as they continue to embed CBE in the curriculum development process. Ranking universities through initiatives such as the accountability measures we are familiar with in the UK places added pressure on staff and students, and as graduate student employment trajectories are varied and uncertain, particularly today as a consequence of COVID-19, we must question the purpose of collating employability data as a measure of student and course success. In addition, the work of pharmacists, and community pharmacists in particular, has been key in sharing information and advice in tackling COVID-19, and pharmacy students need to engage in the wider debate of Kenya's healthcare needs. CBE highlights the importance of identifying country-wide needs and we believe this can be an approach that may lead to success for pharmacy graduates in Kenya.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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REFERENCES

- Alves de Costa, F., Lee, V., Nair Leite, S., Murillo, M. D., Menge, T., & Antoniou, S. (2020). Pharmacists reinventing their roles to effectively respond to COVID-19: A global report from the international pharmacists for anticoagulation care taskforce (iPACT). *Journal of Pharmaceutical Policy and Practice*, 13(12), 1–3. <https://doi.org/10.1186/s40545-020-00216-4>
- Anamuah-Mensah, J., Asabere-Ameyaw, A., & Dennis, S. (2007). Bridging the gap: Linking school and the world of work in Ghana. *Journal of Career and Technical Education*, 23(1), 133–152. <https://doi.org/10.21061/jcte.v23i1.449>
- Arakawa, N., & Anderson, C. (2020). Challenges and opportunities in conducting health services research through international collaborations: A review of personal experiences. *Research in Social and Administrative Pharmacy*, 16(11), 1609–1613. <https://doi.org/10.1016/j.sapharm.2020.06.011>
- Bader, L. R., McGrath, S., Rouse, M. J., & Anderson, C. (2017). A conceptual framework toward identifying and analyzing challenges to the advancement of pharmacy. *Research in Social and Administrative Pharmacy*, 13, 321–331. <https://doi.org/10.1016/j.sapharm.2016.03.001>
- Bruno-Tomé, A., Hadziabdic, M. O., Mucalo, I., & Rennie, T. (2019). Competency (and beyond): Think patient. Collaborate. Develop. Evaluate. Improve. Repeat. *Pharmacy*, 7, 146. <https://doi.org/10.3390/pharmacy7040146>
- Burns, C. (2019). 'Urgent action' needed on pharmacist shortages. *The Pharmaceutical Journal*, 303(7931). <https://doi.org/10.1211/PJ.2019.20207322>
- Commission for University Education. (2020). <http://www.cue.or.ke/index.php/about-us/vision-and-mission>
- Frankham, J. (2016). Employability and higher education: The follies of the 'productivity challenge' in the teaching excellence framework. *Journal of Education Policy*, 32(5), 628–641. <https://doi.org/10.1080/02680939.2016.1268271>
- Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P., Kistnasamy, B., Meleis, A., Naylor, D., Pablos-Mendez, A., Reddy, S., Scrimshaw, S., Sepulveda, J., Serwadda, D., & Zurayk, H. (2010). Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *The Lancet*, 376, 1923–1958. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:4626403>
- Government of Kenya. (2010). *The constitution of Kenya*. <http://kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=Const2010>
- Gruppen, L. D., Mangrulkar, R. S., & Kolars, J. C. (2012). The promise of competency-based education in the health professionals for improving global health. *Human Resources for Health*, 10(43), 1–7. <https://doi.org/10.1186/1478-4491-10-43>
- HESA. (2020). *Higher Education graduate outcomes statistics: UK, 2017/2018—Outcomes by subject studied*. <https://www.hesa.ac.uk/news/18-06-2020/sb257-higher-education-graduate-outcomes-statistics/study>
- International Pharmaceutical Federation. (2012). *A global competency framework version 1*. FIP. <https://www.fip.org/file/1412>
- International Pharmaceutical Federation. (2017). *Research, development and evaluation strategies for pharmaceutical education and the workforce: A global report*. Author. <https://www.fip.org/file/1385>

- Kalei, A. (2016). University graduates' employability skills' mismatch and the labour market demands in Kenya. *International Journal of Business and Management Science*, 2(10), 1–8.
- Kenya Vision 2030 Delivery Secretariat. (2020). *Kenya Vision 2030*. <https://vision2030.go.ke/>
- Kenya Ministry of Health. (2014). *Kenya Health Policy 2014–2030*. Kenya Ministry of Health. <http://publications.universalth2030.org/ref/d6e32af10e5c515876d34f801774aa9a>
- Lo Presti, A., & Pluviano, S. (2016). Looking for trouble in turbulent waters: Employability as a compass for career success. *Organizational Psychology Review*, 6(2), 192–211. <https://doi.org/10.1177/2041386615589398>
- Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: What effects do they have on graduate labour market outcomes? *Education Economics*, 17, 1–30. <https://doi.org/10.1080/09645290802028315>
- McCowan, T., Oanda, I., & Oketch, M. (2018). Towards a national graduate destinations survey in Kenya: An exploratory study of three universities. *Higher Education Policy*, 31(1), 97–119. <https://doi.org/10.1057/s41307-017-0044-x>
- Mills, E. R. (2007). *Developing and evaluating a competency framework for pharmacists working in primary care* [Unpublished doctoral thesis]. University of London.
- Mills, E., Farmer, D., Bates, I., Davies, G., Webb, D., & McRobbie, D. (2005). Development of an evidence-led competency framework for primary care and community pharmacists. *Pharmaceutical Journal*, 275, 48–52.
- Mulder, M. (2017). Competence theory and research: A synthesis. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 1071–1106). Springer Nature.
- Njue, D. (2020, June 25). Declining health service use in Nairobi has health implications beyond COVID-19. *Africatatlse*. <https://blogs.lse.ac.uk/africatatlse/2020/06/25/declining-health-service-use-in-nairobi-has-health-implications-beyond-covid-19/>
- Okereke, M., Adebisi, Y. A., Emmanuella, N., Jaber, H. M., Muthoni, L., & Barka, N. B. (2020). COVID-19: Community pharmacy practice in Africa. *International Journal of Health and Life Sciences*, 6(2), 1–3. <https://doi.org/10.5812/ijhls.104517>
- Tikly, L. (2020). *Education for sustainable development in the postcolonial world*. Routledge.
- United Nations. (2015). *Sustainable development goals*. <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
- Vladimirova, K., & le Blanc, D. (2015). *How well are the links between education and other sustainable development goals covered in UN flagship reports? A contribution to the study of the science-policy interface on education in the UN system*. Department of Economic and Social Affairs, United Nations. https://www.un.org/esa/desa/papers/2015/wp146_2015.pdf
- Wongnaa, C. A., & Boachie, W. K. (2018). Perception and adoption of competency-based training by academics in Ghana. *International Journal of STEM Education*, 5(52), 1–13. <https://doi.org/10.1186/s40594-018-0148-x>
- World Health Organization. (2013). *Transforming and scaling up health professional education and training: Policy brief on regulation of health professions education*. https://www.who.int/hrh/resources/transf_scaling_hpet/en/
- World Health Organization. (2014). *A universal truth: No health without a workforce*. <https://www.who.int/workforcealliance/knowledge/resources/hrhreport2013/en/>
- World Health Organization. (2016). *Global strategy on human resources for health: Workforce 2030*. <https://www.who.int/hrh/resources/globstrathrh-2030/en/>
- World Health Organization. (2019). *Universal health coverage*. [https://www.who.int/news-room/fact-sheets/detail/universal-health-coverage-\(uhc\)](https://www.who.int/news-room/fact-sheets/detail/universal-health-coverage-(uhc))
- Worley, P. (2008). Achieving educational excellence along with a sustainable rural medical workforce. *MEDICC Review*, 10(4), 30–34.

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