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Evaluation of the Higher Education Partnerships in sub-Saharan Africa (HEP SSA) Programme

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Executive summary

Introduction

In October 2020, Technopolis Group was commissioned to conduct the evaluation of the Royal Academy of Engineering's Higher Education Partnerships in sub-Saharan Africa (HEP SSA) Programme.

The HEP SSA Programme is implemented by the Royal Academy of Engineering with the support of the Anglo-American Group Foundation as well as the UK Government's Global Challenges Research Fund (GCRF). The evaluation also covered projects awarded as part of the Enriching Engineering Education Programme (EEEP) from 2013 to 2016, which preceded HEP SSA.

The programme's objectives are to improve the engineering capacity in sub-Saharan Africa (SSA) by supporting the development of knowledge, skills, and employability of African engineering graduates, and supporting the research capacity of local higher education institutions (HEIs).

The HEP SSA Programme funds projects up to a value of £200,000 for a period of two years and operates through a hub and spoke model where the hub university is the main applicant and fulfils a coordinator and mentor role among the partners in sub-Saharan Africa. In addition, the Academy also provided two sets of special grants: the spoke university grants and the sustainability grants.

The evaluation was designed to deliver an evidence-based report based on credible, reliable, and useful qualitative and quantitative data; demonstrate how the HEP SSA Programme contributed to achieving the three primary objectives of the Academy's previous strategy,¹ showcase the progress made in addressing the gaps identified in the 2012 Engineers for Africa report,² demonstrate Official Development Assistance (ODA) value for money in contributing to socio-economic prosperity in SSA. The evaluation, therefore, covers the programme *process*, the implementation of programme activities, and the programme *effects* including the programme outcomes and impacts. The evaluation took a participatory approach, combined with theory-based methods, making use of the programme's Theory of Change (ToC).

Overall, the evaluation provides a highly positive picture of a programme that is well designed and able to generate outputs, outcomes and impacts that meet or exceed its objectives.

Main programme activities and key results

The evaluation found that the motivations for participation in the programme were strongly aligned with the overarching objectives of the HEP SSA Programme and support its relevance to the needs of engineering universities in SSA.

A foundational set of activities around knowledge sharing and collaborative or community focused activity is a core focus across the projects that is valued highly. A common thread and highly cited objective for projects was to facilitate secondments and staff exchanges.

¹ For further information please see the 2015-2020 Strategic Plan of the Academy, accessible at www.raeng.org.uk/publications/corporate-publications/strategic-plan-2015-2020

² www.raeng.org.uk/publications/reports/engineers-for-africa



The knowledge sharing elements reinforce other activities such as curriculum design and teaching. The engagement with students is less widely practised across the portfolio of projects and the activities undertaken.

The projects have the right balance of activities to achieve the objectives set. An important condition for successful project delivery is efficient project management and planning. There is evidence of clear planned objectives, alongside the activities chosen to achieve the objectives. They are well understood by the project partners (hubs and spokes).

The COVID-19 pandemic led to modifications to the delivery mechanisms of some of the activities, especially around knowledge sharing. Although partners were generally positive about the implementation of necessary modifications, there were certain lessons learned. Online solutions prove most effective where there are already established working relationships between partners. Where new partners are involved, additional time and effort was required to establish trust and build the relationship and establish working methods.

Ensuring that equal access is provided, and gender aspects are considered are expectations set within the HEP SSA Programme. The way in which gender equality is addressed through the projects, programmatically and through the activities, varies. There remain barriers to significantly increasing female participation during the lifetime of the projects (two years), due to the limited pipeline of female staff and students. These issues are, however, acknowledged by the projects and more can be done.

The effectiveness and efficiency of the programme

The hub and spoke model is an effective way to achieve the HEP SSA objectives. Many of the universities participating have previous working relationships or were chosen due to geography, or apparent aligned engagement in engineering education activities. There is a clear appetite for spokes to become increasingly engaged across a wider range of the project activities as the relationships evolve. This is already evident in some projects with appetite for spoke universities to become hubs in subsequent rounds of funding. There is a large degree of consensus that the partnerships are equitable in the way that they operate, with a good understanding of the mutual benefits across the partners.

The Academy's expectations for the partnerships were clear and well-articulated. The clarity of expectations helped partnerships guide the projects' implementation and design the delivery plans and associated milestones around the expectations. Expectations were also realistic for the given timeframe to implement the projects. The flexibility in design allowed for aligning the project plans to the needs of the universities while ensuring that the overarching goal of improving engineering skills and enhancing collaboration with industry were kept at the heart of the projects.

Outcomes and unintended effects, lessons learnt

The outcomes of the partnerships are numerous with a strong focus on supporting the strengthening networks and collaboration with industry. There is a high degree of evidence to support the finding that many partnerships have exceeded the expectations set. These results are due to the enhanced take up of the results of the HEP SSA projects. This has included for example, the mainstreaming of problem-based learning, wider implementation of teaching and assessment practices, higher levels of curriculum reviews and more secondments than planned.

The project implementation highlighted some barriers that had to be overcome, predominantly linked to the initial reluctance to engage in the project activities, from staff to industrial partners. There are many lessons learnt that could be disseminated more broadly among the projects. Some of the key areas include the need for enhanced communication among all partners, creating a buy-in to enhance the embeddedness of the projects in the



SSA HEIs, selection and engagement of relevant stakeholders to ensure successful implementation of the projects, and the needs to consider sustainability of the results from an early stage. Sustainability of effect is reliant upon the new networks and collaborative partners remaining active post-project funding.

The HEP SSA Programme within the Academy's wider strategy

The Academy is working in three ways to address the goals of the strategy, through talent and diversity, innovation and policy, and engagement. The most direct links to HEP SSA are through talent and diversity, which calls for boosting the number and diversity of those entering engineering careers.

Increasing the number of engineering graduates is a long-term impact of the HEP SSA programme that cannot be viewed in isolation. The activities of the programme are broadly focused on strengthening activities (curriculum design, mobility or staff training for example), which provides more immediate effects related to capacity building.

The activities of HEP SSA are much more aligned to improving quality of education and graduate skills, rather than the quantity of students. The expectations set by the programme - including sharing tools, upskilling the lecturers, renewing curricula, and linking them with the needs of industry, which in return improve the quality of the content of courses, as well as the experience of the engineering students - were confirmed as important ingredients of addressing existing skill gaps and fostering better employability. However, achieving these objectives takes time.

Under the 2015-2020 strategy for the Royal Academy of Engineering one of the strategic challenges was "positioning engineering at the heart of society". All the programme elements are supporting this challenge, but in particular through stimulating engagement between HEIs and industry. One aspect that has filtered through from the Academy to HEP SSA is the understanding of the connectedness of the engineering disciplines (and the engineering programmes). Community engagement is also an important component of raising awareness of, and interest in, engineering, alongside the connections between Africa and the UK, where there are opportunities to encourage deeper links with the associations and professional organisations and engage with more students in a range of activities. The links with policymakers are also important as a means of increasing interest in engineering and recognising its role in society.

The HEP SSA Programme and value for money (VfM)

HEP SSA projects report a good level of VfM with the benefits outweighing the costs for most projects. The Academy has good oversight of the projects and receives regular reports on progress that support accountability (efficiency). What is less clear is the extent to which the projects and the Academy look at other aspects of value for money, alongside efficiency and effectiveness (economy and equity).

The expected / planned outcomes in terms of teaching capacity, curriculum revision, links made with industry and partnership in general have significant impact for the universities and are more than worth the monetary investment. The effects, however, will take time to come to fruition. The strongest elements of VfM relate to the good alignment of the projects to the strategy and the links of the objectives to the activities (strong coherence with the ToC).

Recommendations

Considering the key findings of the evaluation, a set of recommendations have been formulated. The first recommendation is to enhance the efficiency of project implementation both for the funded projects and the Academy. This also includes the need to unify the reporting requirements in terms of content and the use of a core set of indicators. Additional knowledge and experience sharing among the projects focusing on project management-



related experiences, might also further help to reduce the Academy's workload of managing the programme. The second recommendation is to focus more on the programme objective associated with graduate employability. This can be through encouraging alumni tracking and capitalising on the relationships with alumni to maintain good relationships with industry. The third recommendation is to further integrate considerations related to gender balance in the requirement for the projects. Although it is among the reporting requirements, these efforts could be further enhanced by setting inclusiveness and equity as underlying principles for the project implementation.

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