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# Assessment of Higher Education Programmes for Enhancing the Postgraduate Community: A Case of Increasing Research Capacity and Scholarly Publishing

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## *Abstract*

This article assesses the higher education research capacity building programmes designed to enhance the postgraduate community and scholarly publishing. Post-graduate studies are potential components for promoting knowledge, increasing institutional outputs. Post-graduate studies are likely to create research profile for students who seek future academic appointments. In spite of that higher institutions in low-income countries face serious challenges in building research capacity. This is compounded by local institutional competition for rankings and ratings. To some extent, investments in research usually take a long time before leading to demonstrable results. Yet again postgraduate students across disciplines feel pressure to publish their scholarship and remain unsure partly due to a lack of explicit training. Once more part of academic written output remains unpublished resulting to grey literature. Publishing requires a cocktail of skills in practical activities, and a broad awareness of theoretical/academic developments and trends. A large number of agencies evolved to offer programmes with the aim to expand research capacity in certain kinds of institutions. Institutions hold opposing mechanisms for supporting and sustaining research capacity among postgraduate students. A desk study approach is considered to collect data. Desktop study reviewed the key strategies, models for building postgraduate research capacity and programmes designed for increasing postgraduate scholarly publishing among the South African universities. The research reveals that the Cooke's framework potentially offers a mechanism to contribute to the realisation of the research capacity building goals. A set of recommendations are offered for programme improvement.

***Keywords:*** *Postgraduate Community; Scholarly Publishing; Research Capacity; Higher Education; Scholarly Publishing Programme*

## *Introduction*

Research capacity building is a subject that has received a great deal of attention internationally. This article assesses the higher education research capacity building programmes designed to enhance the

postgraduate community and scholarly publishing. Post-graduate studies are potential components for promoting knowledge, increasing institutional outputs. Post-graduate studies are likely to create research profile for students who seek future academic appointments. Building the research capacity and capability is recognised as a priority on a global scale. The higher education sector is seen as progressing and transforming gradually and steadily. In spite of that higher institutions in low-income countries face serious challenges in building research capacity. Globalization and increasing global ranking have placed huge pressures on higher education institutions. This is compounded by local institutional competition for rankings and ratings. Yet again postgraduate students across disciplines feel pressure to publish their scholarship and remain unsure partly due to a lack of explicit training. Once more part of academic written output remains unpublished resulting to grey literature. The emergence of PhD reviews followed by masters and honours review are examples of the refinement of research programmes in the sector.

Development of research capacity remains a highly policy-relevant issue for optimising the returns from investment in academic research. Publishing requires a cocktail of skills in practical activities, and a broad awareness of theoretical/academic developments and trends. To some extent, investments in research usually take a long time before leading to demonstrable results. Based on the new developments surely there is a need to develop strategies and take necessary measures for enhancing research and promoting research quality in our institutions.

The article reviews strategies to promote and building research capacity in higher education institutions. A brief description for the methodological approach applied is offered. A review of literature informing the context of the study is outlined. This is complemented by a theoretical framework to comprehend the concept higher education and research capacity building. The eight components of Cooke's framework are also discussed. The conventional approaches to increasing research models for building postgraduate research capacity are reviewed. The study concludes with findings and recommendations of the study are outlined.

## *Methodology*

To achieve the abovementioned objectives, a combination of following methodological approaches is used in the study.

### Research Setting

The author deliberates on how the capacity for research is developed for postgraduate community in the institutions of higher learning respectively in the South African university. The higher education institutions of the developing countries face major resource and academic capacity challenges. In the current study, the author describes the institutional arrangements that focuses on research capacity building on an individual and institutional level.

### Research Framework

A wide variety of approaches and interventions are employed to build capacity, led by development agencies, research funders, foundations, learned societies and academic networks (Vogel, 2012:6). The research framework was informed by the Cooke's framework (2005:44) in which capacity development is conceptualised as a process through which the ability to perform functions, solve problems, and set and achieve objectives is facilitated in a sustainable manner. The Cooke's framework has eight components, namely: infrastructure, continuity and sustainability, Dissemination of and knowledge translation, leadership, empowerment, linkages, partnerships and collaborations, research applicability, and skills and confidence as presented (see Figure 1).

One of the important factors it addresses is that capacity strengthening can be considered as both "an end" and as a "process to an end" (El Achi, Papamichail, Rizk, et al., 2019:4). The framework has four structural levels of development and six principles of capacity strengthening that cut across the four structural levels. The structural levels include individuals, teams, institutions, and networks. The six principles are: building skills and confidence, developing linkages and partnerships, ensuring the research is 'close to practice', developing appropriate dissemination, investments in infrastructure and building elements of sustainability and continuity (Cooke, 2005:44).

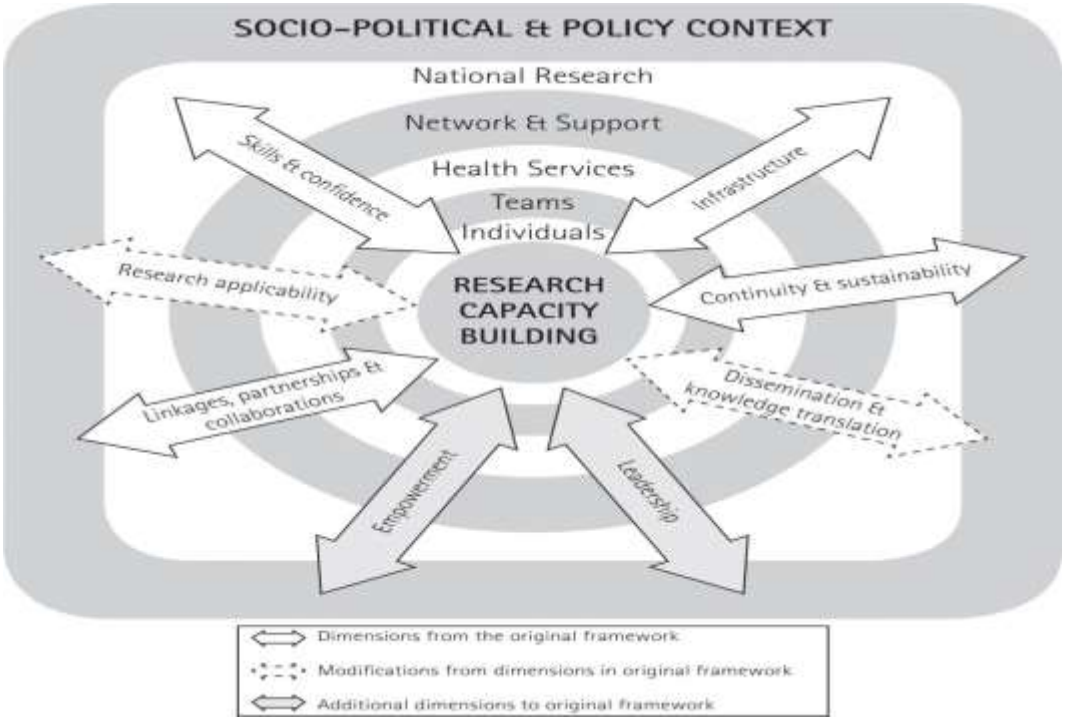


Figure 1: The eight dimensions of the Cooke integrated framework
Source: Adapted from Edwards, Kaseje, and Kahwa, (eds.), 2016:23.

Cooke highlights the impact of policy on research capacity strengthening and how it can strongly influence opportunities to develop, support and sponsor research and researchers (El Achi, Papamichail, Rizk, et al., 2019:4).

**Data Collection Instruments and Data Analysis**

The current research used desktop analysis to gain a clearer picture of the context being studied. The author explores research capacity building and scholarly publishing on postgraduate community. A review of existing (secondary) data was applied. This comprised of a review of the existing research capacity building books, articles, and reports. Most of the data was qualitative in nature. The capacity-building framework was used as the unit of analysis. Data analysis comprised of five stages, namely: familiarisation; identifying a thematic framework; charting; mapping; and interpretation (Crowe, Cresswell, Robertson, et al., 2011). The content was analysed to identify the capacity development outputs of the project.

### *Theoretical Framework*

Governments are increasingly understanding that the entire educational system from early childhood through tertiary education must reflect the new social and economic needs of the global knowledge economy, which increasingly demands a better-trained, more skilled, and adaptable workforce (The World Bank, 2021). Based on the latter statement, the sections below provide an overview for the context of the higher education programmes and research capacity-building.

### Higher Education

Higher education refers to all formal post-secondary education, including public and private universities, colleges, technical training institutes, and vocational schools (The World Bank, 2021). Higher education includes teaching, research, exacting applied work (e.g., in medical schools and dental schools), and social services activities of universities (Pucciarelli and Kaplan, 2016). Currently there are +-23 universities distributed within all nine provinces of South Africa. The respective institutions are all members of *Universities South Africa,* regulated by the Department of Higher Education and Training (DHET). The DHET comprises of four chief directorates for developing and coordinating policy and regulatory frameworks for an effective and efficient university education system. The four chief directorates in the branch consist of:

- University Planning and Institutional Funding
- Institutional Governance and Management Support
- Higher Education Policy Development and Research
- Teaching and Learning Development (Department of Higher Education and Training (DHET), 2021

Pertaining to this study, the Higher Education Policy Development and Research directorate is responsible to develop higher education policy, supports research and regulates the private higher education system. The other directorates are responsible to develop higher education policy, support research and regulate the private higher education system. The directorates also ensures that planning, funding, and providing sector liaison services to higher education (DHET, 2021).

### Research Capacity-Building

Research capacity-building is viewed as a process aimed at equipping researchers with sound research methodologies that enable them to carry out and produce high-quality research (Barrett et al., 2011; Rees et al., 2007; Ridley, 2011). The process also complements existing academic professionals' expertise with research skills (Pickstone, Nancarrow, Cooke, Vernon, Mountain, Boyce, 2008:53). It is an enabler towards defining objectives, and priorities, build sustainable institutions and bring solutions to key national problems (Minja, Nsanzabana, Maure, et al., 2011:12). In terms of developing sustainable abilities and skills the process enables individuals and organisations to perform high quality research (Holden, Pager, Golenko, Ware, 2012). In the educational field, capacity building has been proposed as a means to address the shortcomings of educational research and help researchers produce valid knowledge that responds to the needs of policymakers and practitioners (Barrett, Crossley & Dachi, 2011:25).

Research capacity strengthening is thus the long-term, complex processes aiming to enhance the abovementioned abilities (Vogel, 2012:6). The process is outcome-based, and this condition make performing and utilising research results to be achievable (Vogel, 2012:13). The process is characterised by different levels made up of different components that contribute to research capacity (Mackay, Roux and Bouwer, 2020:4). Capacity development can be considered to occur at three levels; individual, institutional, and environmental (systems) level (Cobban, New, Baudoin, et al., 2017). The individual level involves the development of researchers to build education and training in specific research

competences (Fredua-Kwarteng, 2021). The competences may include training in research skills and soft skills, such as proposal writing, research project management and communication (Vogel, 2012:6) and ethical principles. There has been a realisation that research capacity building must be aimed not only at enhancing skills of individual scientists but also at strengthening institutional systems that enable sustained scientific productivity (Sheikh, Gilson, Akua Agyepong, et al., 2011). Therefore, the institutional level capacity-building focuses on reforming management structures in the respective higher education institutions (Fredua-Kwarteng, 2021). Research capacity strengthening at the environmental level involves creating an enabling environment for research (Vogel, 2012:35). In view of the above description, the motivation for engaging in such programmes aims to promote research in apparent under-researched areas and for increasing research output for professional recognition purposes (Holden, Pager, Golenko, et al., 2012).

### *Literature Review*

The context of research capacity building has been extensively researched. The context is recognised internationally in order to produce a sound evidence base for decision-making in policy and practice to support individuals and teams, organisations, and networks (Cooke, 2005:1). Several existing frameworks outline potential strategies for research capacity building (Hulcombe, Sturgess, Souvlis, et al., 2015). Slade, Philip and Morris (2018) conducted a rapid review of published theories and frameworks for embedding research in the allied health clinical sector. Various authors attempted to develop the debate on research capacity building in peer reviewed journals and books.

The study undertaken by Cooke (2005:1) attempted to develop the debate on measuring research capacity building. It is believed that every activity must be outcome-based. Cooke (2005:1) developed eight components for research capacity building as presented in Figure 1 above. Cooke's paper emphasised on a need to establish a framework for planning and measuring progress, and to identifying what are appropriate outcomes for RCB. The author outlined six principles and suggested that each principle should operates at individual, team, organisation, and supra-organisational levels. Some criteria for measuring progress are also given. It points out the limitations of current measurements that exist in the literature, and proposes a framework for measuring progress, which may form the basis of comparison of RCB activities (Cooke, 2005:1).

A similar study was undertaken focusing on Research Impact Assessment Frameworks by Deeming, Reeves, Ramanathan, et al., (2018:1). This study provided a conceptual measurement framework to assess the impact from health management research. The aims of their study were to elicit the views of Medical Research Institutes (MRIs) regarding objectives, definitions, methods, barriers, potential scope, and attitudes towards RIAFs. Further, the research investigated whether an assessment framework should represent a retrospective reflection of research impact, or a prospective approach integrated into the research process. The wider objective was to inform the development of a draft RIAF for Australia's MRIs. It is assumed that these frameworks are constructed to enable efficiency in research management context.

Kazoka and Wema (2020:45) also examined the factors influencing efforts towards developing research capacity in Higher Education Institutions (HEIs) in Tanzania. The study findings showed that competences, knowledge, and experiences in conducting research are the attributes that faculty members acquire through short training aimed to enhance competences in conducting research (Kazoka and Wema, 2020:45). The study highlights the factors promoting research capacity development. This includes the presence of research policy and its awareness, motivation to conduct research, availability and adequacy of research funds. The authors further identified the challenges faced by researchers in their quest for

academic research writing. Based on the challenges outlined the study made recommendations for regular trainings for academic staff and faculty members on research skills.

The paper by Airhihenbuwa, Shisana, Zungu et al., (2011:27) explored the nature and relevance of partnership model for research capacity building. The training undertaken provided focused on 30 postgraduate students at two South African universities. Their projects examined methodological issues and their relevance to training of postgraduate students in South Africa. The findings of the study recommended that a successful model of partnership should be informed by policies which helps to bridge the health inequity gap globally.

Research is considered to generate practical knowledge and theories. Research is directed towards the discovery of the relationships that exist among the phenomena of the world in which we live (Kazoka and Wema, 2020:45). A study conducted by Ridley's (2011:285) attempted to align the nature of research and ethical principles at Addis Ababa University. The emphasis on this relation seeks to enable research culture with the specific country context. Such trainings are pursued to discover the relationships that exist among the phenomena of the world in which we live (Kazoka and Wema, 2020:45). However, little has been discussed or concluded about how to measure the effectiveness of research capacity building (Cooke, 2005:1). Some of the studies do not capture factors that contribute to developing an environment to support capacity development. The challenges experienced are explained in the following section.

### *Challenges*

Research capacity strengthening has become a growing priority for both local and regional institutions in low and middle-income countries, as well as for international organisations and research funding agencies (Frenk, 2010). Research undertaking forms part of the key performance areas for academic staff; however, the research culture and engagement remains relatively limited due to a number of barriers. One of the constraints that prevents institutions in developing countries from engaging in effective and essential research is a lack of research capacity (Frantz, Leach, Pharaoh, et al., 2014). Hammad and Al-Ani (2021:3) identified some institutional barriers including heavy teaching loads, lack of research assistants, in addition to limited autonomy and lack of job security.

Teaching loads is most associated with lack of time since the teaching component is not determined. Most academics experience lack of staff support who can assist with data collection and literature review and administering surveys. Despite the efforts to keep up with the writing of research, part of academic written outputs remains unpublished instead such is merely printed up or posted on the Internet as grey literature. Often, manuscripts are rejected, and this creates a low confidence in ability to write. The level of research activity and the ability to carry out research is limited in some areas of practice (Cooke, 2005:1). This relates to low commissioned research undertakings, whereby most evidence-based research is undertaken in the clinical sector. Adequate, qualified, trained, well-oriented and specialised manpower is needed in the right numbers to run the research centers and carry out research in identified thrust areas (Ahmad (2020:4). Huenneke, Stearns, Martinez, and Laurila (2017:3) further asserts that insufficient infrastructure, absence of graduate programmes and postdoctoral researchers to enhance productivity are hindering factors to achieve the milestones.

In some cases, the lack of recognition and reward for teaching excellence by establishing career routes which reward staff who are pedagogically research active (D'Andrea and Gosling, 2003). University funding for research is often fragile, jeopardising the sustainability of individual research training efforts (Joseph, 2015). Researchers need to be made part of policymaking for better productivity, effectiveness, and robustness of the government policies (Ahmad and Delhi, 2020:4). Cooke (2005:2) indicated that both policy advisers and researchers have highlighted a lack of evaluative frameworks to measure progress and build an understanding of what works.

The weaknesses and challenges outlined above point to the need for more concerted efforts by educational research institutions as well as higher education policy makers to develop research capacity building strategies (Hammad and Al-Ani, 2021:3).

### *Measures for Improving Research Capacity*

An institution needs fundamental building blocks to foster a scientific research culture. Several emerging issues are fast gaining momentum and throwing new challenges because of the fast-changing international scenario (Ahmad, 2020:4). It is essential to understand what it entails for building research capacity. This section provides an outline of the measures for improving research capacity derived from the Cooke's Integrated Framework. It is believed that academic success cannot be achieved without adequate support structures. Different approaches have been adopted to build research capacity. The culture and values of higher education institutions varies enormously (D'Andrea and Gosling, 2003:6) and its strategies are formal and informal (Munn, 2008). This growing expectation is led by development agencies, research funders, foundations, learned societies and academic networks (Wilmot and Lotz-Sisitka, 2015:5). The developed measures are explained in the following sections.

#### Research Infrastructure

There is a realisation that access to adequate and relevant research infrastructure is essential to promote the outcomes and quality of research (Department of Science and Technology, 2016:ii). In Cooke's integrated framework, the principle on "investing in infrastructure" is part of a specific intervention for successful research capacity strengthening. Research infrastructure includes facilities, resources, and services used by the scientific community across all disciplines for conducting cutting-edge research. Research infrastructures is managed by academic staff who understand the research culture, resources, and responsibility to work across the whole institution to achieve research objective (D'Andrea, 2000).

Higher education institutions need to have centres which will enable them to take advantage of the levers available at national and local level. In this regard, the South African government developed a South African Research Infrastructure Roadmap (SARIR) to complement the focus on global infrastructure and facilitate a research infrastructure investment programme. SARIR is intended to provide a strategic, rational, medium to long term framework for planning, implementing, monitoring, and evaluating the provision of research infrastructures necessary for a competitive and sustainable national system of innovation. The South African research infrastructures is clustered around six scientific domains, namely, (i) humans and society, (ii) health, biological and food security, (iii) Earth and environment, (iv) materials and manufacturing, (v) energy and (vi) physical sciences and engineering (Department of Science and Technology, 2016:ii).

Facilities for research infrastructure are realised through the establishment of centres to support learning and teaching. Most of the infrastructure depends on standard and sophisticated instruments required to conduct high-end research. Databases also forms part of research infrastructure required to undertake systematic literature reviews, meta-analyses, access to literature through databases (Ahmad, 2020:4). The enabling environment also encompasses ICT infrastructure and the media which can be strengthened to encourage the exchange of research-based knowledge between researchers, policy makers and the private sector (Vogel, 2012:6).

**Funding for Research**

One of the most important requirements for research is the availability of adequate funds (Ahmad (2020:4). Adequate research funding allows a university to address the other building blocks. Research funding allows institutions to:

- Hire more course instructors and reduce the workloads of lecturers and professors involved in scientific research production and publication;
- Allows a university to purchase modern laboratory (state of the art facilities) equipment; and
- To undertake research projects for local or national development (Fredua-Kwarteng, 2021).

Research funding emanates from regional, national, and international levels through public institutions, private industries, Non-Governmental Organisations (NGOs) as well as through opportunities for public-private partnership (Ahmad, 2020:4). National level funding is derived from agencies like Department of Science and Technology (DST), University Grants Commission (UGC) and the Department of Higher education. International funding is derived from agencies like World Health Organisation (WHO), World Trade Organisation (WTO), World Bank, United Nations Organisation (UNO) are approached for research grants (Ahmad, 2020:4). In South Africa, the National Research Fund Centre has supported links with universities and practice through funding a number of Research and Development programmes for supporting new and established researchers (Cooke, 2005:2). Research funding is regulated through institutional policies. Universities also introduced meaningful financial incentives to academic staff to improve their (vertical) qualifications (a generous bursary scheme) (Muller, 2005:97).

**Manpower for Research**

Improving the scientific research capacity of an institution forms part of its overall scientific research culture (Fredua-Kwarteng, 2021). Planning manpower capacity can be achieved by a large number of instruments. These instruments are particularly suited for long-, medium- and short-term planning (Wild and Schneewei, 1993:95). Manpower is needed in the right numbers to run the research centers and carry out research in identified thrust areas (Ahmad, 2020:4). In established research institutions, expansion of research is often attempted by adding faculty members to existing units and providing mentoring and infrastructure to maximize individual success (Huenneke, Stearns, Martinez, and Laurila, 2017). Specialised training is imparted to the selected manpower on need-basis depending upon the prioritised thrust areas of research identified by the experts (Ahmad, 2020:4). It is believed that research staff who have similar interests can create a critical mass within the institution who can influence others to consider becoming involved themselves (D'Andrea and Gosling, 2003:5).

Established research projects need dedicated lead and manage the respective research projects, comprising of research managers, research assistants and data collectors. Some research managers lead and manage their own respective projects.

The manager also chaired the Faculty Research Committee where research proposals (mostly proposals linked to master's and doctorates of either academic or postgraduate students, rather than research for non-degree purposes) were quality assured, a key input into the research endeavour (Muller, 2005:98). Managers also developed their own inputs to stimulate scholarship, such as regular presentations on research topics, and the development of a resource pack for postgraduate students.

**Policies for Research**

Polices relating to research informs how research is conducted. Universities expects research to carried out to the highest standards transmitting knowledge and conducting scholarly inquiry. Research

policies are contextual and need-based and address the most intriguing problems faced by our society. Such policies should be evidence-based and practiced and implemented in a time-bound manner (Ahmad, 2020:4). Higher education institutions need comprehensive, goal-oriented and focused research policies for enhancing research and promoting research quality in tune with fast changing global trends (Ahmad, 2020:4). An institution with a strong scientific research culture is enabled to support continuous improvement in its research capacity (Fredua-Kwarteng, 2021). Cooke (2005:1) highlights the impact of policy on research capacity strengthening and how it can strongly influence opportunities to develop, support and sponsor research and researchers (El Achi, Papamichail, Rizk, et al., 2019:4).

A number of university policies govern the management of research. The policies formulated are used to solve problems facing societies that need policy decisions (Kazoka, 2005). Research policies may include:

- Code of Academic and Research Ethics
- Higher Degrees and Postgraduate Studies Policy
- Student-Supervisor Relationship Policy
- Policy on Intellectual Property
- Policy of the Classification of Research Structures
- Policy on the Protection, Management and Commercial Exploitation of Intellectual Property
- Research Policy and Strategy
- Strategy for the Identification and Commercialisation if Intellectual Property (University of Johannesburg, 2021).

School deans are responsible for ensuring implementation of this policy. Effective and compliant management of research data is required to instil responsibilities among researchers. Some policies are difficult to interpret, therefore it is essential for the research office to provide support for interpretation and overall coordination of the policy A university policy library is also established in most universities to provide access to researchers. Research policies are continuously modified to ensure that researcher keep abreast with new research developments.

**Incentives for Research**

Incentives Forms Part of the Abovementioned Policies for Capacitating Researchers

Incentives are managed through faculty research office and regulated by faculty research incentive plans or policy. Incentives are rewards offered to researchers in the faculty for sustained externally funded productivity. Good research needs to be encouraged through appropriate incentives (Ahmad, 2020:4). It is necessary to motivate lecturers, professors, and support staff to engage in scientific research activities (Fredua-Kwarteng, 2021). The following features of rewards that are likely to assist in building research capacity:

- Increased publication
- Increased citations
- Increased grant funding
- Increase PhD student productivity (Grant, 2021:10).

There are many types of research incentives that researchers can leverage on. Four different categories are identified including: (a) Monetary Support, (b) Professional Recognition, (c) Academic Promotion, and (d) Capacity Enhancement (Jessani, Valmeekanathan, Babcock, and Ling, 2020:1). Monetary support incentives are paid as salary supplements and are made in a lump-sum payment each October, based upon prior fiscal year activity. Promotion routes give recognition to those who

successfully undertake pedagogic research (D'Andrea and Gosling, 2003:6). The incentive must not be so attractive, and it should not be so large as to encourage reckless disregard of the risks associated with participation. The manner in which incentives are managed should be appropriate in type and amount. Research incentives are proven effective in convincing people to participate in research studies and help to contribute toward high-quality, accurate, robust research outcomes.

**Collaborative Research**

Higher education institutions are highly expected to engage in research activities covering vast areas of disciplines in order to stimulate social economic developments of the state. Creation of partnerships or collaborations is a strategy frequently followed in order to promote institutions learning from one another and pooling expertise and resources (Huenneke, Stearns, Martinez and Laurila, 2017:3). The interventions incorporate initiatives to support individuals and teams, organisations, and networks. (Cooke, 2005:2). Collaboration contributes to a wider base of evidence to inform service planning and delivery, advance their profession's base of knowledge and influence funding bodies. (Hulcombe, Sturgess, Souvlis, Fitzgerald, 2014). Building capacity for multidisciplinary research is believed to be central to achieving the Sustainable Development Goals (Airhihenbuwa, Shisana, Zungu, et al., 2011:28). International collaboration has also been suggested as a possible capacity-building solution.

**Translational Research**

Translational research as a concept has been widely used and applied in scientific literature for more than a decade (Fort, Herr, Shaw, et al., 2017:60). The goal of translational research is to translate (move) basic science discoveries more quickly and efficiently into practice (Translational Research Institute, 2022). It is part of a unidirectional continuum in which research findings are moved from the researcher's bench to the patient's bedside and community (Rubio, Schoenbaum, Lee, et al., 2010:470). Translational research was established to bridges the gap between basic research and clinical care (Zarbin, 2020). Translational research:

- Encourages and promotes multidisciplinary collaboration among laboratory and clinical researchers
- Incorporates the desires of the general public, with communities being engaged to determine their needs for health innovation
- Identifies and supports the adoption of best medical and health practices (Translational Research Institute, 2022).

Researchers need to be made part of policymaking process for better productivity, effectiveness, and robustness of the government policies (Ahmad, 2020:6). In developed nations, universities organise research fairs and establish research shops that allow community members to visit them and register their problems, based on which research projects are prepared and research undertaken to find solutions to their actual problems (Ahmad and Delhi, 2020:4). Based on the above statements, postgraduate students are involved in community research surveys to build research skills. The process enables greater coordination between researchers and policymakers for incorporating research findings and recommendations into administrative policies (Ahmad, 2020:6). Embracing translational research would potentially lead to specialisation in different areas resulting in research diversity and high-quality output (Kwizera, Mande, Omali, et al., 2021:1).

**Integrity and Ethics in Research**

Increasing research focus also presents challenges in managing risk and regulatory compliance for institutions (Huenneke, Stearns, Martinez, and Laurila, 2017:3). Staff, students, and visitors should in all aspects of their research activity:

- Demonstrate integrity and rofessionalism, fairness and equity, and intellectual honesty;
- Effectively and transparently manage conflicts of interest or potential conflicts of interest;
- Ensure the safety and well-being of those associated with the research; and
- Record and publish their methods and results in ways that are open to scrutiny and debate (Ahmad, 2020:6).

Research capacity building ensures that integrity, transparency, and accountability is promoted and incorporated as an inherent component of the research. Maintaining integrity in research is of paramount importance. Young researchers are imparted adequate education about related issues like plagiarism, duplication, gift and ghost authorships, salami publications, outsourced publishing at an appropriate level of their training (Ahmad, 2020:6). Knowledge and understanding of the academic research culture, and learning and teaching in higher education, is essential to having a credible leadership role in the development of the pedagogic research capacity (D'Andrea and Gosling, 2003:5). Researchers are encouraged to refer to the University's policies and guidelines relating to research integrity and to use them as a resource.

### *Models for Building Postgraduate Research Capacity*

Higher education pursues specific strategies for building research capacity for postgraduates (Wilmot and Lotz-Sisitka, 2015:5). Many higher education institutions have in place strategies for research capacity building that act as a catalyst for promoting research activities and quality of research outputs. For example, the University of Dar es Salaam in Tanzania has in place a research agenda 2017/2019 - 2028/2029 which clearly articulate on the need to promote research capacity at the university. The research agenda states clearly that research activities will be done by providing an enabling environment and resources for research (UDSM, 2018). A framework for measuring capacity building should therefore be inclusive of both process and outcome measures (Crisp, Swerissen and Duckett, 2000).

There are national and institutional targets being set to increase postgraduate student enrolments. These institutions are required to respond to the key challenge of increasing quality graduate output in ways that are equitable and responsive to the building of sustainable research capacities in South African universities (Badsha and Wickham, 2013:2). Common mechanisms designed for increasing postgraduate scholarly publishing among the South African universities are discussed below.

#### Visiting Professors and Fellows

Universities appoint Visiting Professors and Fellows are high-level research champions (Muller, 2005:97) who bring their experience, reputation, and expertise whose responsibility is to lead the research agenda. They provide advice and guidance to staff especially junior staff and postgraduate staff to deliver papers on accredited journals (D'Andrea and Gosling, 2003:4). They also assist in the development of proposals for external funding and by being associated with applications for research grants. Due to increased staff-workload, Research Fellows have contributed to staff development on research and research methodology, and postgraduate supervision (Muller, 2005:97).

#### Research Development Department and Centres

Universities have a dedicated department or centres for research capacity development. Research Development Centres are regarded as most significant investment for developing research activity. The personnel employed in the centre plays an important role to postgraduate community. Some of these centres are established in the university libraries while some are detached from respective faculties to

support master's and doctoral programmes. The following are examples of the units established for postgraduate research capacity building in the selected South African universities:

- Durban University of Technology: The Research Capacity Development (RCD) programme
- North-West University: Research@NWU
- Rhodes University: Centre for Higher Education, Research, Teaching and Learning (CHERTL); and Centre for Postgraduate Studies (CPGS)
- Stellenbosch University: Research Development and Support
- University of Johannesburg: Research Capacity Development Department
- University of Mpumalanga: Research Capacity Development
- University of South Africa: Capacity building and training
- University of the Witwatersrand: Postgraduate Affairs Office
- Cape Peninsula University of Technology: Research Directorate

These centres are created to provide an enabling environment and conducive working space for postgraduates. The department focuses on initiating and fostering programmes that develop new and emerging researchers and providing training (University of Johannesburg, 2021). The Centre houses team of experts (research managers, research professors) employed for developing opportunities to postgraduate students and post-doctoral fellows (University of Johannesburg, 2021). There is a state-of-the-art resource for various research needs to support academic writing practices in postgraduate studies. This resource is aimed at both academic staff and postgraduate scholars (Wilmot and Lotz-Sisitka, 2015).

Another example is the South African Centre for Digital Language Resources (SADiLaR). It is a national centre supported by the Department of Science and Innovation (DSI). SADiLaR has an **enabling function**, with a focus on all official languages of South Africa, supporting research and development in the domains of language technologies and language-related studies in the humanities and social sciences. The Centre is a new research infrastructure set up by the Department of Science and Innovation (DSI) as part of the new South African Research Infrastructure Roadmap (SARIR) at the North-West University. **SADiLaR runs** a digitisation program and a Digital Humanities programme. The Digital Humanities programme facilitates research capacity-building by promoting and supporting the use of digital data and innovative methodological approaches within the Humanities and Social Sciences (South African Centre for Digital Language Resources (SADiLaR), 2021).

## Academic Writing

The importance of academic writing has resulted in the development of writing support approaches in literacy research in recent years (Wilmot and Lotz-Sisitka, 2015). It is essential to develop a teaching and learning research orientated consciousness among staff. It comprises of publication plan, writing workshops, using journal clubs to discuss the publication process and postgraduate journal, Occasional papers series, Policy briefs, colloquiums and conferences. Publication plans becomes beneficial for students and supervisors to discuss expectations and opportunities for publication early in the student's programme.

### Writing Workshops

Many researchers wish to have knowledge and skills of carrying out research. Higher education institutions offer a variety of workshops, seminars, programmes, and events aimed at researcher development for postgraduate community (University of Johannesburg, 2021). Writing workshops have long been used as a support mechanism for scholars. They are an attractive means of support because they are practical, focused and can benefit a high number of scholars at once. Writing workshops have been used extensively at Rhodes University. The generic workshop series provides a solid foundation for

understanding the process and key issues associated with academic writing (Wilmot & Lotz-Sisitka, 2015).

Occasional Papers Series and Policy Briefs

Occasional papers focus on recent issues in higher education and field of research (O'Reilly, 2000). This series aims to provide a hub for intellectual debate. Occasional Paper Series enable postgraduates to disseminate working papers, original research studies, reflective essays. These papers are internally refereed and where appropriate given a designated ISBN. Internal publication schemes can be well suited to increase postgraduate scholarly publication (D'Andrea and Gosling, 2003:3).

Policy Briefs

Policy briefs emerged as a knowledge transfer strategy to promote the use of research (Arnautu and Dagenais, 2021:1). It is aimed at assisting these key role players to respond to the shared goal of building the next generation of South African scholars and researchers (Badsha and Wickham, 2013:2). Policy briefs are a valuable tool for communicating the essential information in a research report and help to bridge the divide between research and policy communities (Wolfe, 2013). They serve as a vehicle for providing evidence-based policy advice to help readers make informed decisions. Postgraduates work with their research leaders to produce policy briefs which are published on websites.

**Research Seminars, Conferences & Symposiums**

Conferences are an important way researchers stay connected to others in their field and learn about cutting-edge scholarship (Buddie, 2016). The conferences also discuss the challenges faced in the areas of research and expertise. Conferences are usually organized either by a scientific society or by a group of researchers with a common interest created opportunities for publications and presentation at conferences (D'Andrea and Gosling, 2003:3). Institutions such as the AISA now HRSC have established research platforms solely for postgraduate students whereby, workshops, and conferences are held on yearly basis. This institution innovated the competition for best presenter and best paper categories to enhance young professionals in the respective disciplines. These competitions have attracted more student's participation in the previous years. The author of this paper also participated with her postgraduate students since 2010.

The *South African Association of Public Administration and Management*, International Conference on Public Administration and Development Alternatives and the Association of Southern African Schools and Departments of Public Administration and Management also established a subprogramme in the conference devoted to offer workshop for postgraduate students. Established researchers devote their time to develop young researchers on the elements of a research project. There are many benefits associated with presenting your work at a conference. There is a possibility of turning conference papers into manuscripts if they are not published by conferences (Kazoka and Wema, 2020:46). Many universities provide some funding for students who have been accepted to present at a conference and with provision that the paper will be accredited for publication. There are discounted conference rates to enable students' participation in the conference. The incorporation of postgraduate students in the conference offer benefits of co-authorship between the student and supervisor.

The abovementioned strategies and initiatives have promoted research activities among members of staff and postgraduate students (Kazoka and Wema, 2020:46). Postgraduates also have mentors who enhances academic outcomes of their mentees. The abovementioned strategies require good support for supervisors and for the establishment of a strong research culture (Badsha and Wickham, 2013:6).

## *Discussions*

### Research Capacity Building Framework

There is a call for increasing postgraduate student enrolments in higher education. Research capacity building has received a great deal of attention nationally and internationally (Holden, Pager, Golenko, et al., 2012). Research capacity building is perceived as a priority and contributes to promoting research implementation (Friesen and Comino, 2017). Research capacity building process is conceptualised as continuous improvement in an institution's capability when it comes to producing and publishing scientific research (Fredua-Kwarteng, 2021). A model for increasing research capacity in higher education is important to recognise that they both represent a significant commitment by the institutions within which they are situated (D'Andrea and Gosling, 2003:3). A review of the literature reveals that various forms of support to enhance the quality and levels of success of postgraduate students are available in South African higher education institutions. Based on the literature it is evident that a sustainable research culture exists among South African universities. The strategies identified were found to be inclusive, as they all incorporate academics and postgraduate students. The study also found that research capacity building techniques extend to developing a research culture.

### Exposure to External Networks

The exposure of students and young academics to broader, external networks is extremely important. Postgraduates in these institutions are supported to attend conferences, and this is evident in the field of Public Administration. As the author also indicates that her students are exposed to participate in these conferences and are able to present and co-author articles that are published in conference proceedings and journals. Conferences serve as platforms for recruitment. Committed and productive postgraduates may leave an indelible impression by dint of their strong credentials and noteworthy academic achievements in their respective fields (Ahmad, 2020:4). Such students are likely to be recruited to institutions with greater financial resources. They often obtain part-time appointments in the employing institutions.

### Investing in Research Infrastructure

Investment in research support has changed as funded research projects have evolved (Huenneke, Stearns, Martinez and Laurila, 2017:431). The South African higher education established adequate centres, department, and units dedicated to support and strengthen postgraduate studies. The available research infrastructure creates access to research students and supportive environment to postgraduates.

### Investing in Institutional Leadership

Good leadership and management practices are essential for the success of the organisation. Effective leadership translates into prudent public policy formulation and implementation (International Institute for Sustainable Development, 2018). The study reveals that sufficient human resources is allocated to the delivery and monitoring of capacity development activities. There are dedicated personnel for supporting postgraduate studies in the form of a dedicated central programme manager and coordinators within research consortia (Mackay, Roux and Bouwer, 2020:15). Research professors and managers and their support staff are appointed. Hiring active research faculty members helps to reduce teaching loads. Active researchers are able to set up a committee that will critically assess research proposals and dissertations. Although in some cases work allocations are hindered by staff load related to teaching. However, relief staff are also appointed to aid with the challenges experienced by senior academic staff. Based on the above sections there is broad recognition that faculty members represent one of the most important elements of research capacity for an institution (Huenneke, Stearns, Martinez and Laurila, 2017:3).

**Research Funding**

Investment in research support has changed as funded research projects have evolved. A range of capacity development activities and funding mechanisms are vital for building soft and hard skills. Mackay, Roux and Bouwer (2020:15) suggested that the financial resources for capacity development should be ring-fenced and available in a flexible, staggered manner to enable accountability and responsiveness research programme. Higher education institutions have well-established sources of funding based mainly on research output. The available financial support and incentives (research grants, conference attendance grants, and publication rewards) contributes to research capacity building.

**Establishment of Research Groups, Interdisciplinary or Trans-Disciplinary**

A key to successful capacity building has been the development of strong partnerships (Airhihenbuwa, Shisana, Zungu, et al., 2011:30). The strategy of developing research in cluster areas has demonstrated advantages for emerging research universities (Huenneke, Stearns, Martinez and Laurila, 2017). Research capacity building is a long-term, complex process that requires the interplay of individuals, organisations, national and international research systems. It is believed that research capacity building is supported and enhanced when there is teamwork. The establishment of research groups is seen as an opportunity that can be utilized to assist research capacity building. It is essential for researchers to work together in order to exchange ideas, knowledge, and skills. The literature reviewed informs that collaborative and interdisciplinary research programmes can provide opportunities to overcome limited access to data, computing capacity and infrastructure. This is a positive impact since resources are shared among researchers in their respective institutions. Collaborations also create research culture among faculties. Most of the institutional leaders are active researchers.

Research capacity contribute to postgraduate development. Comprehensive strategies for promoting research activities in higher institutions are of critical importance (Velho, 2004:177). Publishing requires a set of skills and an enabling environment. Higher education plays a fundamental role in nurturing these capabilities. The process provides a strong, supportive, and stimulating backdrop for postgraduate researchers. Building educational research capacity seems particularly important in the current context of educational reform. Successful development of research requires a long-term perspective. Most universities and research institutes have formulated research policies which guide research activities in these establishments (Kazoka and Wema, 2020:62). Universities have developed policies and practices to shape the productivity of researchers. Despite the successes in these policies there are institutions and countries that lacks research funding.

## *Conclusion and Way Forward*

Publishing requires a cocktail of skills in practical activities, and a broad awareness of theoretical/academic developments and trends. Cooke's framework potentially offers a mechanism to contribute to the realisation of the research capacity building goals. A large number of agencies evolved to offer programmes with the aim to expand research capacity in certain kinds of institutions. Institutions hold opposing mechanisms for supporting and sustaining research capacity among postgraduate students. Building research capacity in teaching and learning in higher education requires understanding the dominant academic culture, the mission of the institution and the ethos of the teaching departments within them. It is essential to have a credible leadership role in the development of the pedagogic research capacity. Infrastructure investment is a basic pillar, and its availability is crucial to research and innovation. Globally the higher education sector is progressing and transforming gradually and steadily. The developments proposed are pleasant but our higher education needs are enormous and dynamic. However, there is an urgent need for reassessment of our research policies procedures and practices. It is essential to measure research quality and outcomes of research activities. The study also found that the

translational research is underutilised and hindered by ethical protocols and lack of innovation from postgraduate students.

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