The Sustainability of Practices Employed to Build the Research Capacity of Academic Practitioners in South African Universities

Carlo Daniels
https://orcid.org/0000-0002-4003-6185
University of South Africa
daniece@unisa.ac.za

Abstract

The increased investment in enhanced research capacity is grounded in the belief that meaningful research is associated with several economic, social, and environmental benefits. South African universities are on a quest to remain competitive in global rankings. One avenue to achieve improved rankings is to increase the quality and quantity of research and the capacity of those responsible for its production. Scholarly literature exploring sustainable research capacity building is low. Little is known about effective ways to promote the capacity for excellence in research. The purpose of this qualitative study was to explore the sustainability of practices employed to build the research capacity of academic practitioners in South African universities. To achieve the purpose of this study, semi-structured interviews, embedded in grounded theory principles, were employed. The findings revealed that effective practices were employed to foster the research capacity building of their research practitioners. However, limited resources—such as inadequate funding, overwhelming teaching responsibilities, and insufficient competence to engage in interdisciplinary research—hinder the sustainability of the implemented practices. With sustainability in mind, institutions should prioritise fostering a culture of mentorship, collaboration, and active research participation.

Keywords: sustainable research capacity building; academic practitioners; researchers; South African universities; grounded theory

Introduction

Research is characterised by a methodical, critical, and empirical approach to problem-solving, which encompasses several key activities. These include formulating research questions, conducting observations, evaluating the reliability of information sources, designing and implementing studies, creating data-collection instruments, analysing results, proposing solutions, and disseminating findings (Del Savio et al. 2024). In essence, research is a process of critical thinking and systematic inquiry aimed at addressing challenges and leveraging opportunities (Marino-Jiménez et al. 2024).

Jackson et al. (2022) and Kozhakhmet et al. (2022) observe that national governments have significantly increased their funding and policies to enhance research productivity and nurture the next generation of scholars. In developing nations, international development donors and governmental organisations have reaffirmed their dedication to strengthening the research capacity of their respective countries (Vicente-Crespo et al. 2021). Their increased investment in enhanced research capacity is grounded in the belief that meaningful research is associated with many benefits to several stakeholders (Pulford et al. 2020).

For societies, research in all its diverse forms has the potential to drive environmental, social, and economic progress (Daniels, Niemczyk, and De Beer 2024; Marino-Jiménez et al. 2024; Yoshioka-Kobayashi and Shibayama 2021). Environmental research helps address challenges such as climate change, resource depletion, and biodiversity loss by developing sustainable technologies and informing conservation policies. Social research, including health and education studies, improves quality of life by advancing medical treatments, shaping effective public health strategies, reducing inequality, and improving learning outcomes. At the same time, economic and technological research fosters innovation, increases productivity, creates new industries and jobs, and supports evidence-based policymaking that promotes stable and inclusive economic growth. To this end, Del Savio et al. (2024) report that research plays a crucial role in advancing the United Nations' 17 Sustainable Development Goals (SDGs). Zooming in on the economic dimension of sustainability, the economies of affluent countries often rely on the generation of knowledge that serves as the principal catalyst for the development of new products and services (see also Zheng et al. 2024), which benefit national governments and their citizens.

In this context, the role of universities is pivotal, as these institutions allocate substantial resources to nurture future academic leaders and support seasoned research professionals (Del Savio et al. 2024; Yoshioka-Kobayashi and Shibayama 2021). Universities are also beneficiaries of improved research capacity. When viewed globally, research empowers universities to maintain their relevance amid the forces of pandemics, globalisation, and internationalisation (Del Savio et al. 2024). Esteemed evaluations, such as the Academic Ranking of World Universities (ARWU), Quacquarelli Symonds (QS) World University Rankings, and Times Higher Education (THE) World University Rankings, assess institutions based on their academic and

research outputs (Ulla and Tarrayo 2021). According to Jackson et al. (2022), institutions that achieve a higher number of publications tend to secure better positions in these rankings, which subsequently enhances their funding prospects and attracts talented faculty and students. Therefore, it has become increasingly important for universities to implement policies and incentives that encourage faculty members to enhance the quality and quantity of their research outputs, engage in international research collaborations, and publish in well-regarded, indexed journals. While such measures are essential for ensuring academic rigour, visibility, and global competitiveness, publishing research should not be limited to meeting performance indicators. Rather, the broader significance of research lies in its capacity to advance knowledge, inform evidence-based policymaking, drive innovation, and address pressing social, environmental, and economic challenges. High-quality research that is widely disseminated has the potential to influence institutional practice and contribute to sustainable development at local, national, and global levels. Consequently, universities should adopt a balanced approach that values publication excellence with societal relevance, ethical integrity, and long-term impact.

As regards those responsible for its production and dissemination, the academic profession is associated with a spectrum of challenges (Le 2024). Daniels, Niemczyk, and De Beer (2024) highlight the increasing pressures faced by academics in universities caused by the institutions' ambitions to attract enhanced investment, skilled personnel and students, and to achieve improved positions in global rankings. Research output is recognised as a vital measure of an academic's productivity, qualifications, and potential for career advancement (Kozhakhmet et al. 2022; Ulla and Tarrayo 2021). Wilkins, Hazzam, and Lean (2021) further emphasise that, for the past 30 years, the publication of scholarly work has been an essential requirement for academic professionals. Furthermore, Mydin and Surat (2021) and Del Savio et al. (2024) indicate that the expectations of academics extend beyond mere research production; they are also required to secure research funding, engage in international collaboration, and meet specific citation metrics. As a result of these expectations, academic professionals report that feelings of anxiety and pressure are common as they navigate their way through the academic arena (Hernández-Peña, Maldonado, and Cardenas 2022). Compounding pressure and anxiety can be ascribed to the fact that the research landscape is in constant flux because of societal and institutional transformations, including the expansion of higher education, globalisation, and advancements in technologies such as artificial intelligence (Hernández-Peña, Maldonado, and Cardenas 2022). Each of these factors imposes distinct demands and expectations on academic institutions and their faculty (Le 2024).

In light of the critical importance of research for governments, society, universities, and academic professionals, research capacity building (RCB) emerges as a crucial strategy. RCB can be employed by nations and academic institutions to cultivate the capabilities of individuals involved in research production (Del Savio et al. 2024). Common RCB initiatives at universities include workshops focused on research methodologies and

seminars tailored to publication strategies (Kozhakhmet et al. 2022). Nevertheless, scholars such as Cash-Gibson, Guerra, and Salgado-de-Snyder (2015), Cordrey et al. (2022), McGuire et al. (2020), and Niemczyk and Rossouw (2018) advocate for sustainable research capacity building (SRCB). The latest definition, and the one employed in this study, is provided by Zuzovsky and Guberman (2024), who state that SRCB is the product of three dimensions: expertise, motivation, and opportunities. Expertise refers to the essential methodological knowledge and skills required at both individual and institutional levels for effective research and sustainable impact. Motivation reflects the value institutions place on research, including available financial incentives and the supportive attitudes of faculty members. Opportunities involve resources such as time, funding, and institutional support that facilitate research and enhance expertise and motivation. Efforts to strengthen research capacity can target either individual faculty or institutional structures. Financial resources, such as dedicated research budgets or reduced teaching loads, provide external incentives for researchers who aim to engage more actively in research initiatives.

The motivation behind this study was grounded in the scarcity of research on the topic of SRCB. Currently, little is known about effective ways to promote the capacity for excellence in research (Niemczyk and Rossouw 2018). Although most studies on SRCB are grounded in health research, publications remain low (Jack et al. 2020; Kasprowicz et al. 2020; Kwedi-Nolna et al. 2022; McGuire et al. 2020; Schmidt et al. 2022; Squires 2019; Van Rensburg, Armstrong, and Geyer 2017; Van Wyk, Wolvaardt, and Nyoni 2020; Wittayapun and Nawarat 2021; Wong Shee et al. 2022). Scholarly literature shows that the need for SRCB in African countries such as South Africa is immense, as nowadays, researchers are expected to operate in the context of globalisation, internationalisation, technological advancements, and new, innovative research methodologies (Van Wyk, Wolvaardt, and Nyoni 2020). This study addressed the above-mentioned research gaps by exploring the specific practices applied to foster SRCB in faculties of education, law, and community and health sciences. The research was guided by the following research questions:

RQ1: How effective are the specific practices employed to foster sustainable research capacity building of South African research practitioners?

RQ2: To what extent are challenges threatening the sustainability of the specific practices employed to foster sustainable research capacity building?

RQ3: What does the emerging theory reveal about sustainable research capacity building in South African universities?

Literature Review

The literature review explores the unique context of South African universities, the research productivity and capacity in these institutions, and the challenges threatening SRCB initiatives in Africa.

The Influence of Global Rankings on South African Universities

The public university system in South Africa is deeply influenced by a historical legacy rooted in the colonial and apartheid era policies, which served predominantly white communities and perpetuated systemic inequalities (Luvalo 2020). With the abolition of apartheid in 1994, the landscape of higher education began to undergo substantial reform, largely driven by government initiatives such as the White Paper on Education and the National Plan for Higher Education. These strategies were designed to address historical injustices and promote inclusivity (see Department of Education [DoE] 1997, 2001, 2008). The focus of these reforms included increasing access to higher education for populations historically marginalised, facilitating institutional transformation, and ensuring that university curricula align with national development goals. Currently, South Africa is home to 26 public universities that collectively provide a wide array of academic programmes and engage in various research initiatives. The presence of 26 public universities offering diverse academic programmes and research initiatives represents a national asset for the country. These institutions provide a platform for skills development, knowledge production, and innovation. However, the uneven distribution of resources, research capacity, and institutional support across the sector remains a key challenge that must be addressed to ensure that all universities can contribute meaningfully to sustainable national development and social transformation.

One important driver behind improving the research capacity of institutions and their academic practitioners is the desire of South African universities to improve their reputation in global rankings. South African universities promote RCB through policy (see Department of Higher Education and Training [DHET] 2015) and funding initiatives such as the National Research Foundation (see NRF 2022). The concern for South African scholars is that local universities duplicate the example of more successful research-intensive institutions, without considering contextual factors, which leads to ineffective uniformity (Mafenya 2019). Consequently, academics are compelled to devote their attention and resources to satisfying the research excellence criteria set out by global-ranking institutions, often at the expense of their research autonomy and other core activities such as teaching and learning (Wolhuter 2023).

In global ranking criteria, the quality of research and research output statistics are analysed to score the research contribution of universities. In addition, South African academics have been motivated to produce high-quality research, as they, too, are assigned a rating based on their contribution to their scholarly field of study (Mafenya 2019; NRF 2022). Kaidesoja (2022) reports that university rankings and their impact on universities have received mixed reviews. Advocates of university rankings claim that ranking systems have a positive influence on research quality and research outputs at higher education institutions (HEIs). On the other hand, opposing views indicate that university rankings are counterproductive to educational activities. Wolhuter (2023) warns that, in their quest to remain competitive in global rankings, HEIs should keep in mind that global rankings undermine the autonomy of universities and that rankings do not consider the contextual uniqueness of universities.

Research Productivity and Research Capacity

Over the past two decades, research capacity building in South African universities has intensified. Considerable financial investment and policies have been directed towards the development of skilled researchers (Niemczyk and Rossouw 2018). Consequently, South African HEIs have experienced considerable growth in the publication of journal articles, conference proceedings, books, and theses. The increase in such publications can be attributed to the implementation of the Research Outputs Policy in 2015 (DHET 2015) and the establishment of internal research policies in respective South African HEIs. In addition, the NRF has played a pivotal role in promoting research and capacity building through the provision of funding and research infrastructure (NRF 2022). As a result of ongoing support in internal and external policies and the provision of funding, the DHET (2021) was pleased to report that the total number of publications (in the country's 26 public universities) has increased from 7,230 units in 2005 to 21,019 units in 2019.

Examples of SRCB initiatives from the 26 public universities in South Africa show that support towards SRCB in the form of RCB programmes is in place. As reported by Durban University of Technology (2023) and the University of Johannesburg (2021), annual RCB programmes aimed at developing new, emerging researchers are hosted at their institutions. The RCB programmes provide opportunities for staff and students to engage with highly respected expert academics. The focus of the training was to link research objectives to questionnaires and assist supervisors with the process of postgraduate supervision. Specifically focusing on education, Tlhapi (2023) reports that the North-West University (NWU) School of Professional Studies in Education hosted its second annual workshop aimed at empowering research professionals with the necessary knowledge, values, and competencies to improve the quality and quantity of research. A key feature of the workshop was the element of sustainability in RCB.

Challenges Threatening the Sustainability of Research Capacity-Building Initiatives in Africa

According to scholars from the developing world (Kasprowicz et al. 2020; Marongwe et al. 2022; Van Wyk, Wolvaardt, and Nyoni 2020), factors that hinder SRCB in Africa are twofold. On the one hand, Africa has low levels of research output. As indicated by Kasprowicz et al. (2020), although Africa houses 15% of the global population, the continent produces 2% of the world's research output. The same authors attribute the low levels of research output to a lack of skilled research practitioners and inadequate access to research databases. It is important to note that many educational leaders at African universities are not active researchers; therefore, they are not the most equipped candidates to evaluate research competencies or to implement effective SRCB principles and practices at their respective universities (Fredua-Kwarteng 2021). On the other hand, funding is not always available for research endeavours and SRCB initiatives. Despite low budgets for research, which often account for less than 1% of an African country's gross domestic product (GDP), African researchers are still expected

to show their full research potential and productivity (Marongwe et al. 2022). Although universities in Africa have received support and funding towards RCB initiatives and forged partnerships with institutions globally, local governmental investment in higher education remains low (Marongwe et al. 2022). As reported by Marongwe and colleagues, insufficient funding hinders progress towards the development of novice researchers and hampers the dissemination of high-quality research outputs.

Although it is promising that the African continent has experienced an increase in research productivity, additional funding and improved productivity are required, as the continent's research output does not meet global standards (Kwedi-Nolna et al. 2022). Female academics are placed at a further disadvantage because of inadequate funding sources. In South Africa, the contribution of women to the overall research output of the country has constantly fluctuated at around 30% (DHET 2022). However, between the years 2018 and 2020, the contribution that women in academia made to research was 37%. Although satisfied with the growth, the South African DHET (2022) describes the progress as modest and sluggish.

As regards the sustainability of research projects in sub-Saharan Africa, there is a need for more novice researchers with the necessary knowledge, values, and competencies to pursue research careers (Balandya et al. 2021). The available scholarly literature on the topic of SRCB shows that the inadequate preparation of research practitioners in the subcontinent stems from poorly developed research courses in postgraduate education and a lack of opportunities for professional development during employment (Balandya et al. 2021).

Dell (2019) emphasises that South Africa's commitment to RCB is evident in the fact that, since the year 2000, the country has doubled its research productivity. In the same period, success has not been limited to research outputs. There has also been an increase in the number of doctoral graduates (Dell 2019). The above-mentioned figures appear promising at face value, and the DHET (2021) appears to be content with the average growth rate (8.06%) in research productivity between the years 2005 to 2019. However, Sebola (2023) analysed the substantial financial resources devoted to South African universities and reports that the increase in the number of research publications and doctoral students was too gradual to claim sufficient progress and a sustainable trajectory. Furthermore, research professionals who operate in the developing world are at a disadvantage due to a lack of resources and funding to conduct research and to attend and present their research at (inter)national conferences (Kanmounye et al. 2022).

Research Methods

In this study, a qualitative framework, grounded in a postmodern research paradigm, was used. It facilitated an in-depth understanding of process-oriented phenomena, particularly practices employed to foster SRCB in South African universities. Instead of adopting a predetermined theoretical framework, the researcher adhered to the principles of grounded theory while systematically gathering and analysing data to

identify emergent themes. Such systematic methodologies are critical, as grounded theory emphasises coherent and rigorous data collection and analysis practices. Grounded theory is a qualitative research approach aimed at systematically generating theory from empirical data by examining how individuals interpret and construct meaning within their social worlds, drawing conceptually on symbolic interactionism (Blumer 1969) and methodologically on the traditions of Chicago School sociology (Glaser and Strauss 1967).

Employing grounded theory principles was the most suitable for this study because researchers employing this methodology primarily engage in qualitative techniques, such as interviews, to collect data (Nieuwenhuis 2020). In addition, Nieuwenhuis advises that qualitative researchers refrain from commencing their inquiries with a predetermined theoretical framework aimed at testing established hypotheses. Rather, in accordance with an inductive approach, an emerging theory may emerge organically during the processes of data collection and analysis. This approach minimised the potential of researcher bias and enriched the findings.

The central aim of grounded theory analysis is to distil concepts, develop conceptual categories, and elucidate relationships among these categories derived from the data. This process culminates in the development of a theory that derives from the experiences of the research participants, rather than being anchored in pre-existing theoretical constructs. Unlike other interpretive methodologies, grounded theory prioritises the understanding of variations and complexities in social phenomena. Additionally, it provides insights into how social processes generate meaning and how contextual factors impact these processes. To this end, an emerging theory naturally arose from the data and is elaborated on in section 5.

This research is a component of a broader project that involves an extensive review of existing literature, an analysis of 40 relevant documents, and 10 semi-structured interviews. This section focuses on the findings derived from the semi-structured interviews. Data were collected from participants detailed in Table 1 below.

Table 1: Participant profiles

Name	Institution	Gender	Experience and Faculty
Participant A	SA1	Female	Experienced researcher in the Faculty of Education
Participant B	SA1	Female	Experienced researcher in the Faculty of Community and Health Sciences
Participant C	SA1	Female	Experienced researcher who served two terms as the Deputy Dean of the Faculty of Education
Participant D	SA1	Female	Novice researcher in the Faculty of Law. She recently completed her doctoral studies and is shifting her attention to producing research outputs.
Participant E	SA1	Male	Experienced researcher in the Faculty of Education with a proven publishing track record and the holder of a research grant.
Participant F	SA2	Male	Novice researcher in the Faculty of Education
Participant G	SA2	Male	Novice researcher in the Faculty of Education
Participant H	SA2	Male	Experienced researcher in the Faculty of Education with a proven track record of research outputs
Participant I	SA2	Male	Novice researcher in the Faculty of Education
Participant J	SA2	Female	Experienced researcher and head of postgraduate education in the Faculty of Education

With reference to Table 1, the participants (males = 50% and females = 50%) were equally represented during the semi-structured interviews. Based on the information, most of the participants were experienced researchers (60%) compared to the number of novice researchers (40%). Most of the participants were from the Faculty of Education (80%). Moreover, 10% were from the Faculty of Law, and 10% were from the Faculty of Health Sciences. Experienced researchers were selected because of their long-term understanding and insights into the research process. Novice researchers were selected because they understood the initial and recent challenges and opportunities presented to inexperienced academics.

In line with grounded theory methodologies, a purposive sampling approach was employed in this study. Participants were purposefully selected from three faculties of

two different universities (SA1 and SA2) to gain insights into the practices and challenges related to SRCB among academic professionals. Recruitment strategies entailed a combination of snowball sampling, telephone interviews, and email communication to ensure that the subject matter was relevant to potential participants. Semi-structured interviews were conducted, ranging from 45 to 90 minutes, and incorporated open-ended questions tailored to elicit rich, detailed narratives of participants' experiences. The author facilitated the interviews, which were audio-recorded and transcribed verbatim for analysis.

The data analysis process was initiated with the first interview and unfolded in several distinct phases. Transcripts were subjected to open coding through a framework based on Schatzman's dimensional analysis. This involved a continuous comparison of open codes and their interrelations, facilitating the development of higher-order classifications referred to as axial codes (Schatzman 1991). Eventually, selective codes emerged by correlating concepts and contextual conditions, supported by thorough memo-writing to exhibit and scrutinise an evolving theoretical framework (Strauss 1987). Throughout the analytical process, insights informed the refinement of interview questions and shaped recruitment strategies. Additionally, findings were shared at multiple points with participants and contributors for their input, thereby enhancing the validity of the study. The analytic phase concluded upon reaching theoretical saturation, indicated by the absence of new information or categories.

A robust qualitative research design extends beyond effective methodologies and also encompasses adherence to appropriate ethical standards. In accordance with ethical guidelines, the identities of both the institutions and participants were kept confidential. Participants provided signed informed consent letters, which ensured their anonymity and safeguarded their rights. Given the considerations of time constraints, resource availability, and limited access to universities and academic professionals, this study was confined to two universities. Consequently, while the findings provide significant insights, they are not generalisable to a broader context.

Findings

This section explores how effective the specific practices are in fostering SRCB. In addition, the extent to which the challenges threaten the sustainability of the implemented practices is elaborated on.

Language Editor

In the context of SA1, an editor was appointed to improve research capacity and quality of research outputs. The editor's role was to provide feedback and language revisions on research drafts before submission for publication in conference proceedings, journals, and books. The practice of appointing a dedicated individual and office to provide guidance on academic writing can improve the quality of academic publications. As stated by Participant E:

Fortunately, we have an editor who has been appointed at the faculty. That is a person who can read your draft before you send it off to the journal and indicate to you where you need to work on your research questions, and you need to work on your title. We appointed this person to assist our lecturers in improving their research capacity and publishing quality work.

However, not all research practitioners capitalised on the editor's service to improve their research capacity and quantity, which hindered the sustainability of this practice. While some academic professionals were thriving and actively publishing, others were perceived as "dead wood". Not all staff members seemed to be motivated, productive researchers. This could hinder the research capacity of a research unit and the university. In fact, such disparities in performance create an uneven research environment where only a limited number of academics carry the institution's research output and mentor colleagues. Participant D observed:

You do get staff that are really thriving—they are publishing like never before, and then you get the ones that are just dead wood. It comes down to how you will utilise the opportunities that are available.

Participant E proposed that academics who were not interested in engaging in research and supervising postgraduate students be assigned increased teaching responsibilities. As suggested by Participant E:

Of course, there are many others that we call stagnant or dormant researchers—those who are not publishing. That must be investigated. We must also have a policy in place. For example, if you are not publishing, then you will maybe have to teach more. If you don't have any master's or PhD students, you will have to teach more.

Conferences

The two universities under investigation were committed to funding opportunities for knowledge exchange and networking opportunities through conference participation. In addition, research practitioners had avenues to seek additional support if they did not have sufficient budgets from their authors' funds. Financial support drives research capacity, professional development, and encourages active participation in academic discourse. In addition, participation in conferences creates a platform for academics to establish long-term research-related collaborations across institutions and borders. As explained by Participants H and I, respectively:

I received a lot of opportunities. When I arrived at the university, I was even supported by the university to go to a conference. I have produced many papers from conferences because I am supported by the research unit.

[Currently], I do not have any funds, but I can go to my director in the entity, and everything will be paid for.

Financial constraints hindered conference participation, in turn, threatening the sustainability of RCB. Participant H said that the existing funding was insufficient. Consequently, many academics could not attend conferences. As explained by Participant H:

> The main challenge will be finance, I think, because it is not enough. For instance, as I am speaking, I have used up all the money that I got from the papers I published. This means that now I cannot go to another conference.

However, it is concerning that Participant J indicated that she would rather set aside her research and conference participation to prioritise the immediate teaching needs of a large student body. Researchers felt obligated to fulfil teaching duties at the expense of their research and conference participation, as teaching had an immediate impact on student learning. It seems that the urgency of teaching and administrative tasks overshadowed research activities such as attending conferences. She explained as follows:

> I would rather put my research aside or my half-written manuscript aside, because it will only affect me and one or two postgraduate students for a week or two. I would rather focus my attention on my teaching and learning, because there are 600 students waiting for me to give a class or to mark an assignment. I struggle to get to conferences.

Individuals who occupy leadership positions in HEIs have a strategic role in promoting internationalisation. With sustainable research partnerships in mind, opportunities should be created (through conferences) for academics to engage in academic circles beyond the borders of their own countries. Participant E pointed out that the university operated like a business. Therefore, formulating external partnerships, marketing the HEI, and attracting resources were necessary. Participating in international conferences and establishing partnerships with universities located in different countries are obvious starting points to market a university and build research capacity through collaboration with international scholars. As recommended by Participant E below:

> It is the responsibility of the rector to have the idea of internationalisation. How can a university be placed at a very high level in terms of publishing in international journals? We are making a difference in terms of research happening at the national level, but you need your academics to then go out, not just stay in South Africa and do online lectures, but also visit international universities and present our work there. This is how we will make new agreements with our universities, and so we also get money to come into the university, because I think universities today are almost like a business. We also need to think about how we can promote the university when we go out.

Funding

Funding opportunities were made available to academics through internal and external research grants. Internal financial backing held great potential to foster sustainability in RCB practices, as it was not limited to funding. The criteria for internal research grants

involved mentoring and ongoing support for novice researchers. Participant H noted that the university provided funding on the condition that novice researchers were mentored and were part of the research process. The practice of providing funding is promising, as adequate financial backing is essential for creating a sustainable research habitat. As revealed by Participants A and H, respectively:

> In more recent years, they [the HEI] have had this mid-career researcher kind of grants out there where you can apply almost every year. The way the grants are structured now, they have a mentoring component and a support component.

> I received some grants previously. If you submit a very convincing research proposal, you will receive a grant. There must be an element of development where newcomers will be part of the project. It will be led by an experienced person.

However, the sustainability of funding as a practice is questionable. Participant D emphasised the importance of alerting academic staff about research funding in advance, as she mentioned the time-consuming nature of applying for funding. Participants D revealed the following:

> I did my first funding application last year. I realised why people are saying no, I do not have time. Initially, in my mind, it was a one-hour process just to find out that it took five days to submit an application.

Regarding funding as a challenge, institutional support was evident, as Participant E expressed gratitude for receiving substantial financial support from the university. However, this participant pointed out that attaining funding was competitive. He was among a few research professionals who had obtained a research grant, while many of his research colleagues did not have similar opportunities. For funding as a practice to be deemed sustainable, it should be accessible to most academic professionals. Nonetheless, Participant E recommended that scholars should take responsibility for actively seeking and applying for funding towards improving their own research capacity. Participant E said:

> What I can talk about in terms of how the university supports us because I have experienced it, so I am fortunate to have received funding from the university over the last five years, but I had to apply. It is important that people apply for this funding. It is important to look out for these opportunities when the university sends them to you.

An impressive response as regards SA2 was that the university had established dedicated offices to assist researchers in navigating the complicated landscape of grant applications and funding opportunities, from which other South African universities could learn. Having dedicated offices and individuals to assist with funding would lead to a simplified administrative process, which the participants described as lengthy. In the voice of Participant J:

Securing funding often involves navigating complex administrative processes. To address this, our institution provides support through dedicated offices that assist researchers in identifying funding opportunities, preparing proposals, and managing grant applications. Streamlining these processes is an ongoing effort to reduce the administrative burden on researchers.

Incentives and Awards

Incentives and awards were employed as a motivational tool to foster SRCB. Regarding awards, the recognition and validation of the achievements of academic practitioners could boost individual morale and encourage others to strive for similar achievements. Participant C mentioned:

> There is recognition by means of awards.

As regards incentives, an author's fund was allocated to researchers who completed supervision of postgraduate students. Through this fund, research-related activities—such as travel, conference attendance, and publication costs—were supported. Tangible benefits were required to motivate researchers to participate actively in research initiatives. As explained by Participants H and I, respectively:

> I mentioned that you have an author's fund. If you complete your supervision, you get an amount that goes into your account for research, for travel and attendance at conferences, for publications, and so forth.

> The most important strategy they are using is offering incentives.

Writing Retreats

Writing retreats created a dedicated time and space for academics to devote attention to producing publications and being mentored by seasoned researchers. For the duration of the writing retreat, participants receive support and guidance from experienced research practitioners. A writing retreat has the potential to improve the quality of research outputs and promote a culture of collaborative scholarship. In the voices of Participant B and H, respectively:

> The university does well in terms of making sure that there are writing retreats.

> We also use article writing retreats, where you sometimes go to a certain place to produce an article.

However, similar to conference participation, not all academics are available to attend due to insufficient resources. Academics take on too many responsibilities at the expense of their research capacity. Academics who served on multiple committees were burdened by heavy workloads, time constraints, and staff shortages. Participant D expressed her frustration as follows:

> [I have many] administrative duties because I am on two or three different committees. I also have administration in terms of marking and the setting of exam papers, and on top of that, you are expected to publish research.

Interdisciplinary Research

Participant E recommended that a sustainable practice for RCB is to engage in interdisciplinary research. However, he pointed out that there was a tendency among academics to operate in silos, which reflected a lack of interdisciplinary research initiatives. Working in isolation limited the potential of impactful research. Thus, there was a pressing need for collaboration among research practitioners operating in distinctive disciplines and institutions. In the words of the participant:

> As academics, we do not even think to do interdisciplinary research or work with other colleagues from other faculties. But do you realise that we have to? We cannot work in a silo—we have to work with other colleagues.

Emerging Theory

According to Merriam and Grenier (2019), grounded theory research is distinct from other qualitative research methodologies in that it seeks to formulate an emerging theory based on the findings generated during the study. This type of theory, known as substantive theory, encapsulates processes and illustrates how they evolve over time. In this study, the findings served as a basis for the development of an emerging substantive theory, rather than a formal grand theory, given that substantive theory has not been comprehensively validated across a diverse array of practices (Niemczyk 2010).

The universities in this study employed business practices in their operation, and some of their business principles were to internationalise their institutions (global rankings), be financially stable, and generate as many income streams as possible. Therefore, research as a driver of financial sustainability motivated the universities to pay considerable attention to employing practices that served their business needs (improve the quality and quantity of research outputs). In fact, commendable practices (e.g. employing a language editor, encouraging conference participation, and providing funding) were employed to foster SRCB because the development of competent researchers is associated with substantial financial incentives for the university (a basic need). However, the sustainability of said practices is questionable—not all academics made use of the language editor, since some researchers did not produce research. Not all academics had available funds and time (due to teaching responsibilities) to participate in conferences. In addition, although funding was made available, it was often insufficient and highly competitive, resulting in only a few academics holding research grants. To claim a sustainable research ecosystem, most academic professionals should be relieved of their teaching and administrative responsibilities to attend conferences and writing retreats. Furthermore, most research professionals should have access to funding and actively contribute to research productivity.

To this end, the emerging theory indicates that the South African universities implemented sound practices to foster RCB because quality research outputs were associated with increased funding and an improved reputation. However, limited resources, such as inadequate funding, overwhelming teaching responsibilities, and insufficient competence to engage in interdisciplinary research, hindered the sustainability of the implemented practices. Although available scholarly literature confirms the emerging theory generated from the findings of this study, longitudinal studies and case studies to explore SRCB in the context of South African HEIs could test or expand on the emerging theory.

Discussion

This section provides answers to the three research questions outlined in the introduction (section 1). Regarding the first RQ, South African universities employed effective strategies to build the research capacity of their researchers. A practice not reported on frequently in the scholarly literature is the availability of a language editor to improve the quality of scholarly outputs. In developing countries, mentorship has historically been uncommon (Kingiri, Andersen, and Hanlin 2024). Whether formal or informal, effective mentorship plays a crucial role in developing students' research skills through career guidance, support, and collaborative opportunities (Wekullo et al. 2024), especially for those new to research (Bonaconsa et al. 2024). Therefore, it is promising that South African HEIs have made research funding available, provided that funding recipients mentor novice scholars.

Both universities actively encouraged participation in academic conferences by providing funding. According to Brockmann (2023), participating in conferences opens access to regional and international research circles. This could lead to long-term collaboration. A commendable commitment to fostering a research-active culture is evident in the fact that the two universities implemented motivational practices, such as offering time off for participation in writing retreats and offering awards and incentives for high-quality research. The creation of time and space to engage in research through the provision of writing retreats was identified as a crucial driver towards SRCB (Fussy 2024). To improve its effectiveness, writing retreats should be offered upon submission of a research project (Fussy 2025). Furthermore, Jackson et al. (2022) recommend that universities encourage and acknowledge (incentives) their academics who have improved the quality and quantity of their research outputs, participate in international research networks, and publish in reputable, indexed journals (Jackson et al. 2022). Often, universities do not have a functional central research administration office that can assist researchers and laboratories in obtaining necessary equipment and reagents (Chukwudi 2022). Consequently, researchers are often left to navigate the complexities of resource procurement independently, making their endeavours unsustainable. Therefore, it is promising that SA2 established dedicated offices to assist researchers with their funding applications and communicate funding-related opportunities.

Regarding RQ2, although the practices were effective, their sustainability was hindered by the challenges associated with them. It is concerning that not all researchers availed themselves of the support provided by the language editor. The practice is underutilised because some academics are dormant in their research endeavours. The latter is confirmed by Fredua-Kwarteng (2021), who notes that many scholars employed in African universities are not active researchers. Many of the interviewed researchers and the available scholarly literature note that, at times, academics are unable to attend conferences and writing retreats because of a lack of funding (Mapako et al. 2021) and teaching responsibilities (Oancea et al. 2021; Zuzovsky and Guberman 2024). The competitive nature of available funding for research is a concern, as only a minority of academics manage to secure research grants (Daniels, Niemczyk, and De Beer 2024). Some researchers in Nigeria reported that they consequently had to resort to financing their work personally, drawing from their modest salaries (Chukwudi 2022). Another example of unsustainable funding and knowledge production is revealed by Pietersen, Ndofirepi, and Langeveldt (2025), who point out that African universities rely heavily on external funding and accreditation. Donors from Europe and North America often influence research priorities and funding themes, such as climate change, public health, and global governance, that align with their interests rather than local needs. This situation limits African scholarship's visibility globally and reduces opportunities for research that is socially relevant and rooted in local contexts.

Considering the evolving research landscape that seeks solutions to challenges of global change, there is no doubt that all nations need skilled researchers to engage in interdisciplinary research projects that must sometimes span geographical boundaries (Niemczyk and Rossouw 2018). Although the participants were aware of the importance of engaging in interdisciplinary research, many of them did not have the capacity to engage in multi-, inter-, and transdisciplinary research, which was confirmed by Tatto (2021).

Finally, the emerging theory (RQ3) indicates that the universities in this study employed business practices in their research operation, and some of their business principles were to internationalise their institutions (global rankings), be financially stable (produce research), and generate as many income streams as possible (Wolhuter 2023). In fact, academics are expected to contribute to the business objectives of universities through research, as this is a critical indicator of an academic's career advancement (Kozhakhmet et al. 2022; Ulla and Tarrayo 2021; Wilkins, Hazzam, and Lean 2021). The South African HEIs implemented sound practices to foster sustainability in their RCB practices. However, limited resources—such as inadequate funding, overwhelming teaching responsibilities, and insufficient competence to engage in interdisciplinary research—hindered the sustainability of their practices.

Implications of the Findings

For academic institutions, there is a clear need to enhance support for researchers, particularly fostering an environment that encourages the utilisation of available

resources, such as language editing services. Institutions should prioritise creating a culture of collaboration and active research participation among faculty, which would address the dominance of a minority of academics active in knowledge production. For researchers, the findings highlight the importance of seeking out interdisciplinary opportunities and engaging in collaborative projects. This could enhance the quality and quantity of their scholarly contributions and professional development. Internal and external funding agencies play a crucial role in facilitating research by providing accessible funding opportunities that consider the diverse needs of researchers. With sustainability in mind, funding agencies should implement programmes that support attendance at conferences and writing retreats, as such experiences are essential for networking and professional development. In addition, funding criteria should include a component that caters for mentoring novice academics and the promotion of interdisciplinary research. The above implications should be enforced through incentives and policy.

Conclusion

The increased investment in enhancing research capacity by the South African government and universities is grounded in the recognition that research is associated with numerous economic, societal, and environmental benefits (Pulford et al. 2020). Fostering SRCB is demonstrated through the implementation of supportive policies and funding initiatives, such as those offered by the NRF. The findings of this study indicated the availability of essential research resources, including language editing services and funding for conference participation. However, the highly competitive nature of funding acquisition, coupled with the predominant teaching responsibilities researchers face, often limited engagement in RCB activities. To mitigate these challenges, universities employed various motivational practices, such as incentives and awards, to stimulate research engagement. Additionally, the promotion of interdisciplinary collaboration among researchers emerged as a vital opportunity for enhancing research practices. The emerging theory revealed that South African universities adopted effective practices to promote RCB, driven by the link between quality research outputs, funding, and institutional reputation. However, challenges such as limited funding, heavy teaching loads, and gaps in interdisciplinary capacity constrained the long-term sustainability of these efforts.

Acknowledgement

References

Balandya, E., B. Sunguya, D. W. Gunda, B. Kidenya, T. Nyamhanga, I. K. Minja, M. Mahande, B. T. Mmbaga, S. E. Mshana, K. Mteta, J. Bartlett, and E. Lyamuya. 2021. "Building Sustainable Research Capacity at Higher Learning Institutions in Tanzania through Mentoring of the Young Research Peers". *BMC Medical Education* 21 (116): 1–11. https://doi.org/10.1186/s12909-021-02611-0.

Blumer, H. 1969. *Symbolic Interactionism: Perspective and Method.* Berkeley: University of California Press.

Bonaconsa, C., V. Nampoothiri, O. Mbamalu, S. Dlamini, S. Surendran, S. K. Singh, R. Ahmad, A. Holmes, M. A. Rasheed, M. Mendelson, and E. Charani. 2024. "Mentorship as an Overlooked Dimension of Research Capacity Strengthening: How to Embed Value-Driven Practices in Global Health". *BMJ Global Health* 9 (1): p.e014394. https://doi.org/10.1136/bmjgh-2023-014394.

Brockmann, P. 2023. "Hybrid Simulation of a Scientific Conference: Inquiry Based Learning to Enable Master's Degree Students to Acquire Research Skills". In *Proceedings of the International Conference on Cognition and Exploratory Learning in Digital Age*, edited by D. G. Sampson, D. Ifenthaler, and P. Isaías, 91–98. IADIS (International Association for Development of the Information Society). https://doi.org/10.33965/CELDA2023_202306L012.

Cash-Gibson, L., G. Guerra, and V. N. Salgado-de-Snyder. 2015. "SDH-NET: A South-North-South Collaboration to Build Sustainable Research Capacities on Social Determinants of Health in Low- and Middle-Income Countries". *Health Research Policy and Systems* 13 (45): 1–9. https://doi.org/10.1186/s12961-015-0048-1.

Chukwudi, C. U. 2022. "Consolidating and Upscaling Molecular Research Capacity in Nigeria: On Who's Account?" *Frontiers in Research Metrics and Analytics* 6: 788673. https://doi.org/10.3389/frma.2021.788673.

Cordrey, T., E. King, E. Pilkington, K. Gore, and O. Gustafson. 2022. "Exploring Research Capacity and Culture of Allied Health Professionals: A Mixed Methods Evaluation". *BMC Health Services Research* 22 (1): 85. https://doi.org/10.1186/s12913-022-07480-x.

Daniels, C., E. K. Niemczyk, and Z. L. De Beer. 2024. "Challenges Associated with Sustainable Research Capacity Building: A Comparative Study between BRICS Nations and African Countries". In *Education in Developing, Emerging, and Developed Countries: Different Worlds, Common Challenges*, Vol. 22, edited by N. Popov, C. Wolhuter, Z. L. de Beer, G. Hilton, J. Ogunleye, and E. Achinewhu-Nworgu, 82–88. Sofia: Bulgarian Comparative Education Society (BCES).

Del Savio, A. A., K. G. Velarde, L. C. Montero, and M. A.V. Olivera. 2024. "Research Training: Unraveling the Research Methodological Design Challenge in Engineering Programs". *International Journal of Engineering Pedagogy (iJEP)* 14 (7): 30–53. https://doi.org/10.3991/ijep.v14i7.48987.

Dell, S. 2019. "South Africa 'Punches above Its Weight' in Research, Says Study". University of World News, October 2. Accessed February 12. https://www.universityworldnews.com/post.php?story=20191001143824647.

DHET (Department of Higher Education and Training). 2015. *Research Outputs Policy 2015*. Accessed February 13, 2023. https://www.gov.za/sites/default/files/gcis_document/201503/38552gon188.pdf.

DHET (Department of Higher Education and Training). 2021. "Report on the Evaluation of the 2019 Universities' Research Outputs". Pretoria: DHET. Accessed February 12, 2023. https://www.dhet.gov.za/Policy%20and%20Development%20Support/Research%20output s%20report%202021_final.pdf.

DHET (Department of Higher Education and Training). 2022. "Report on the Evaluation of the 2020 University Research Output". Pretoria: DHET.

DoE (Department of Education). 1997. *Education White Paper 3: A Programme for the Transformation of Higher Education*. Government Gazette, Vol. 386, No. 18207. Pretoria: Government Printers.

DoE (Department of Education). 2001. *National Plan for Higher Education*. Pretoria: Government Printers.

DoE (Department of Education). 2008. *Report of the Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions*. Pretoria: Government Printers.

DUT (Durban University of Technology). 2023. "Research Capacity Development". Accessed April 4, 2023. https://www.dut.ac.za/research-ps/research_capacity_development/#:~:text=The%20Research%20Capacity%20Developm ent%20(RCD,students%20to%20support%20each%20other.

Fredua-Kwarteng, E. 2021. "Effective Leadership Is Key to Building Research Capacity". University World News, November 6. Accessed March 20, 2023. https://www.universityworldnews.com/post.php?story=20211101123217520.

Fussy, D. S. 2025. "Drivers of Change for Researcher Development in Tanzania". *Studies in Continuing Education* 47 (1): 266–284. https://doi.org/10.1080/0158037X.2024.2336995.

Glaser, B. G., and A. L. Strauss. 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research.* London: Aldine Publishing. https://doi.org/10.1097/00006199-196807000-00014.

Hernández-Peña, Y., E. A. Maldonado, and J. U. Cardenas. 2022. "Training of the Student Researcher in Higher Education in Colombia". *Journal of Language and Linguistic Studies* 18 (4): 473–491.

Jack, H. E., C. Merritt, G. Medhin, R. Musesengwa, C. Mafuta, L. J. Gibson, C. Hanlon, K. Sorsdahl, D. Chibanda, and M. Abas. 2020. "Developing Sustainable Capacity-Building in Mental Health Research: Implementation Outcomes of Training of Trainers in Systematic Reviewing". *Global Health Action* 13 (1): 1–10. https://doi.org/10.1080/16549716.2020.1715325.

Jackson, J., A. Neba, C. Viney, L. Mtwisha, A. de-Graft Aikins, A. Mitchell, H. Kebirungi, and K. Outtara. 2022. "Pathways to Research Leadership for Early Career Researchers in Africa: A Potential Role for African and Global Funders". *South African Journal of Higher Education* 36 (2): 151–172. https://doi.org/10.20853/36-2-4697.

Kaidesoja, T. 2022. "A Theoretical Framework for Explaining the Paradox of University Rankings". *Social Science Information* 61 (1): 128–153. https://doi.org/10.1177/05390184221079470.

Kanmounye, U. S., S. Bandyopadhyay, A. Munoz-Valencia, H. Khalil, H. Sana, N. Badwi, X. Ma, M. Swaroop, and K. Madani. 2022. "Peer Mentorship to Build Research Capacity among Members of the International Student Surgical Network (InciSioN): A Proof of Concept Study". *BMC Medical Education* 22 (868): 1–7. https://doi.org/10.1186/s12909-022-03482-9.

Kasprowicz, V. O., D. Chopera, K. D. Waddilove, M. A. Brockman, J. Gilmour, E. Hunter, W. Kilembe, E. Karita, S. Gaseitsiwe, E. J. Sanders, and T. Ndung'u. 2020. "African-Led Health Research and Capacity Building: Is It Working?" *BMC Public Health* 20 (1140): 1–10. https://doi.org/10.1186/s12889-020-08875-3.

Kingiri, A., M. H. Andersen, and R. Hanlin. 2024. "Mentoring as a Pathway to Building Research Capacity in the Field of Innovation and Development Studies in Africa". *Studies in Continuing Education* 46 (1): 101–20. https://doi.org/10.1080/0158037x.2022.2140333.

Kozhakhmet, S., K. Moldashev, A. Yenikeyeva, and A. Nurgabdeshov. 2022. "How Training and Development Practices Contribute to Research Productivity: A Moderated Mediation Model". *Studies in Higher Education* 47 (2): 437–449. https://doi.org/10.1080/03075079.2020.1754782.

Kwedi-Nolna, S. A., M. Djuidje-Ngounoue, C. Bilounga-Ndongo, M. S. Ndje-Ndje, E. Mvodo-Meyo, and R. Leke. 2022. "A Structured Approach to Effective Mentoring of Women Health Researchers in Africa". *Ghana Medical Journal* 56 (3): 13–21. https://doi.org/10.4314/gmj.v56i3s.3.

Le, A. T. 2024. "Academic Work from the Perspectives of Aspiring Academics: A Study of Doctoral Candidates and Recent Graduates". *The Australian Educational Researcher* 51: 1559–1577. https://doi.org/10.1007/s13384-023-00653-5.

Luvalo, L. 2020. "A Higher Education Case Study in the Global South: South Africa Past and Present". In *Decolonising Education in the Global South: Historical and Comparative International Perspectives*, edited by J. Seroto, M. N. Davids, and C. C. Wolhuter, 265–279. Cape Town: Pearson.

Mafenya, N. P. 2019. "'One Tree Does Not Make a Forest': Academics' Narratives on Research Capacity Building and Development in Higher Education Institutions". *Journal of Educational Studies* 18 (1): 82–99. https://hdl.handle.net/10520/EJC-1d876d5f44.

Mapako, T., C. T. Tagny, S. Laperche, I. Bates, and E. L. Murphy. 2021. "Building Capacities in Research for Blood Services in Africa". *Transfusion Clinique et Biologique* 28 (2): 171–174. https://doi.org/10.1016/j.tracli.2021.01.006.

Marino-Jiménez, M., I. L. Ramírez-Durand, A. Pareja-Lora, and A. Cieza-Esteban. 2024. "Research in Latin America: Bases for the Foundation of a Training Program in Higher Education". *Cogent Education* 11 (1): 1–18. https://doi.org/10.1080/2331186x.2024.2319432.

Marongwe, N., C. Meki-Kombe, L. Kobusingye, and V. Machingura. 2022. "Exploring the Hurdles Faced by Emerging Female Researchers: Experiences and Reflections from Four Selected African Universities". *African Journal of Gender, Society and Development* 11 (4): 157–180. https://doi.org/10.31920/2634-3622/2022/v11n4a8.

McGuire, C. M., K. Riffenburg, S. Malope, B. Jack, and P. C. Borba. 2020. "Mixed-Methods Evaluation of Family Medicine Research Training and Peer Mentorship in Lesotho". *African Journal of Primary Health Care and Family Medicine* 12 (1): 1–17. https://doi.org/10.4102/phcfm.v12i1.2387.

Merriam, S. B., and R. S. Grenier. 2019. *Qualitative Research in Practice: Examples for Discussion and Analysis.* 2nd ed. San Franciso: Jossey-Bass.

Mydin, F., and S. Surat. 2021. "Research Capability: Early-Career Academics' Perception of Doctoral Studies". *European Journal of Educational Research* 10 (4): 1893–1905. https://doi.org/10.12973/eu-jer.10.4.1893.

Niemczyk, E. K. 2010. "Expanding the Research Horizon in Higher Education: Master's Students' Perception of Research Assistantships". MEd thesis, Brock University.

Niemczyk, E. K., and J. P. Rossouw. 2018. "'n Suid-Afrikaanse perspektief op die voorbereiding van wêreldbekwame navorsers". *LitNet Akademies* 15 (2): 297–320. https://hdl.handle.net/10520/EJC-10a956c6e2.

Nieuwenhuis, J. 2020. "Qualitative Research Designs and Data-Gathering Techniques". In *First Steps in Research*, edited by K. Maree, 72–103. Pretoria: Van Schaik Publishers.

NRF (National Research Foundation). 2022. "NRF Funding Overview Booklet". Accessed April 7, 2023. https://www.nrf.ac.za/wp-content/uploads/2022/03/NRF-Funding-Overview-Booklet-2022.pdf.

Oancea, A., N. P. Fancourt, J. Robson, I. Thompson, A. Childs, and N. Nuseibeh. 2021. "Research Capacity-Building in Teacher Education". In "Teacher Education Research, Policy and Practice: Future Directions", edited by D. Mayer and A. Oancea, special issue, *Oxford Review of Education* 47 (1): 98–119. https://doi.org/10.1080/03054985.2020.1842184.

Pietersen, D., A. Ndofirepi, and D. C. Langeveldt. 2025. "Philosophical Perspectives of Cultural Imperialism, Hegemony, and Knowledge Colonization in the African University". *International Journal of Learning, Teaching and Educational Research* 24 (9): 570–583. https://doi.org/10.26803/ijlter.24.9.28.

Pulford, J., N. Price, J. A. Quach, and I. Bates. 2020. "Measuring the Outcome and Impact of Research Capacity Strengthening Initiatives: A Review of Indicators Used or Described in the Published and Grey Literature". *F1000Research* 9: 517. https://doi.org/10.12688/f1000research.24144.1.

Schatzman L. 1991. "Dimensional Analysis: Notes on an Alternative Approach to the Grounding of Theory in Qualitative Research". In *Social Organization and Social Process: Essays in Honor of Anselm Strauss*, edited by D.R. Maines and Aldine de Gruyter, 303–314. New York: Aldine de Gruyter.

Schmidt, D., K. Duncanson, E. Webster, E. Saurman, and D. Lyle. 2022. "Critical Realist Exploration of Long-Term Outcomes, Impacts and Skill Development from an Australian Rural Research Capacity Building Programme: A Qualitative Study". *BMJ Open* 12: 1–9. https://doi.org/10.1136/bmjopen-2022-065972.

Sebola, M. P. 2023. "South Africa's Public Higher Education Institutions, University Research Outputs, and Contribution to National Human Capital". *Human Resource Development International* 26 (2): 1–15. https://doi.org/10.1080/13678868.2022.2047147.

Squires, A. 2019. "US Nursing and Midwifery Research Capacity Building Opportunities to Achieve the United Nations Sustainable Development Goals". *Nursing Outlook* 67 (6): 642–648. https://doi.org/10.1016/j.outlook.2019.06.016.

Strauss, A. L. 1987. *Qualitative Research for Social Scientists.* Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511557842.

Tatto, M. T. 2021. "Developing Teachers' Research Capacity: The Essential Role of Teacher Education". *Teaching Education* 32 (1): 27–46. https://doi.org/10.1080/10476210.2020.1860000.

Tlhapi, M. 2023. "School of Professional Studies in Education Hosts Workshop Series". Nort-West University, March 4. Accessed April 4, 2023. https://news.nwu.ac.za/school-professional-studies-education-hosts-workshop-series.

Ulla, M. B., and V. N. Tarrayo. 2021. "Classroom Teaching or Academic Publishing? An Investigation of Philippine Doctoral Academics' Beliefs". *Research in Education* 111 (1): 80–88. https://doi.org/10.1177/00345237211024670.

University of Johannesburg. 2021. "Research Capacity Development". Accessed April 4, 2023. https://www.uj.ac.za/postgraduate-school/research-capacity-development/.

Van Rensburg, G. H., S. J. Armstrong, and N. Geyer. 2017. "A System Orientation to Research Capacity Development: A South African Perspective". *Africa Journal of Nursing and Midwifery* 19 (3): 1–14. https://doi.org/10.25159/2520-5293/1733.

Van Wyk, J. M., J. E. Wolvaardt, and C. N. Nyoni. 2020. "Evaluating the Outcomes of a Faculty Capacity Development Programme on Nurse Educators in Sub-Saharan Africa". *African Journal of Health Professions Education* 12 (4): 201–205. https://doi.org/10.7196/AJHPE.2020.v12i4.1389.

Vicente-Crespo, M., O. Agunbiade, J. Eyers, M. Thorogood, and S. Fonn. 2021. "Institutionalizing Research Capacity Strengthening in LMICs: A Systematic Review and Meta-Synthesis". *AAS Open Research* 3: 43. https://doi.org/10.12688/aasopenres.13116.3.

Wekullo, C. S., J. B. Ouda, E. Keseko, J. O. Shiundu, and W. P. Moses. 2024. "Mentorship for Capacity Building among Young Scholars in Knowledge Translation, Research, and Practice in Universities in Kenya". *Mentoring and Tutoring: Partnership in Learning* 32 (2): 165–183. https://doi.org/10.1080/13611267.2024.2323475.

Wilkins, S., J. Hazzam, and J. Lean. 2021. "Doctoral Publishing as Professional Development for an Academic Career in Higher Education". *The International Journal of Management Education* 19 (1): 100459. https://doi.org/10.1016/j.ijme.2021.100459.

Wittayapun, Y., and J. Nawarat. 2021. "Effectiveness of an Academic-Practice Team Approach on Research Capacity Building of Nurses and Public Health Professionals". *International Journal of Environmental Research and Public Health* 18 (7199): 1–18. https://doi.org/10.3390/ijerph18137199.

Wolhuter, C. 2023. "South African Universities in the International Race on Global University Rankings, Part 1: The Rise and Assessment of the Phenomenon of Global University Rankings". Litnet, March 15. Accessed April 3, 2023. https://www.litnet.co.za/south-african-universities-in-the-international-race-on-global-university-rankings-part-1-the-rise-and-assessment-of-the-phenomenon-of-global-university-rankings/.

Wong Shee, A., C. Quilliam, D. Corboy, K. Glenister, C. McKinstry, A. Beauchamp, L. Alston, D. Maybery, D. Aras, and K. McNamara. 2022. "What Shapes Research and Research Capacity Building in Rural Health Services? Context Matters". *Australian Journal of Rural Health* 30 (3): 410–421. https://doi.org/10.1111/ajr.12852.

Yoshioka-Kobayashi, T., and S. Shibayama. 2021. "Early Career Training and Development of Academic Independence: A Case of Life Sciences in Japan". *Studies in Higher Education* 46 (12): 2751–2273. https://doi.org/10.1080/03075079.2020.1817889.

Zheng, X., W. Zhou, C. Ni, and C. Wang. 2024. "The Influencing Mechanism of Research Training on Chinese STEM Ph.D. Students' Career Interests". *Asia Pacific Education Review* 25: 733–749. https://doi.org/10.1007/s12564-022-09775-4.

Zuzovsky, R., and A. Guberman. 2024. "Narrating Stories about Research Units in Israeli Teacher Education Colleges". *European Journal of Teacher Education* 47 (4): 787–804. https://doi.org/10.1080/02619768.2022.2133697.