Student mobility and doctoral education in South Africa

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This article analyses doctoral education programmes in South Africa with a particular focus on student mobility. It investigates pull and push factors as a conceptual framework, arguing that the patterns of student mobility in doctoral education programmes in South Africa follow the patterns of international student mobility elsewhere, which are driven mainly by the quest for better opportunities. Contrary to previous studies, which do not focus on the role of the state, this article sees the state as playing a key role in facilitating such mobility. This article uses comparative education methods to compare the patterns of enrolment of doctoral education students in South Africa during 2005 and 2009. Statistical data from the Department of Higher Education and Training were used to analyse the enrolment patterns of doctoral students in South African universities. Secondary sources in the form of government documents, a literature review and internet sources were employed in contextualising the study.

Introduction

This article analyses doctoral education in South Africa with a particular focus on student mobility. This focus is located within the phenomenon of globalisation, finding expression through the movement of people and ideas across the globe, particularly in the domain of higher education. As the demand for greater access to higher education grows, it prompts outward mobility when local demand cannot be met. In this regard, Altbach and McGill-Peterson (2008) argue that students, whether supported by government, scholarships, their families' or their own resources, will constantly move in the direction of educational opportunities. This article demonstrates the role that the state is playing in facilitating the mobility of scholars and students. Globally, this responsibility finds expression through, *inter alia*, a state issuing study permits, recruiting students from abroad to meet local needs, sending students abroad to undergo training in response to a lack of capacity at home, and facilitating access for students to local or overseas institutions for study purposes. These issues are described in this article as pull and push factors.

The focus of this article is on inward-bound international student mobility, which constitutes 30% of doctoral student enrolment in South Africa. This substantial number of international doctoral students in South Africa provides the rationale for the focus of this article. The pull and push factors are used as a conceptual framework to analyse international student mobility in doctoral education programmes in South Africa. This article argues that the patterns of inward-bound student mobility in doctoral programmes in South Africa follow the patterns of international student mobility elsewhere, which are driven mainly by the quest for better opportunities. Globally, many nation states and higher education institutions are active participants in determining the flow of students in response to various pull and push factors. However, in South Africa, the state created policy frameworks for the inward flow of students into the country, but does not actively recruit international students or send students overseas for training. In developing the argument, this article explores the following issues: (i) the definition of student mobility; (ii) a conceptual framework to inform the study (pull and push factors); (iii) a review of current literature; (iv) the phenomenon of South African and global student mobility globally and in South Africa; (v) enrolments according to field of study; and (vi) South Africa as a regional hub for attracting international students.

Methodology

This article uses statistical data from the databases of the Department of Higher Education and Training (DHET) to analyse the enrolment patterns of students in doctoral education programmes in South African universities. It also uses secondary sources in the form of official policy documents of the South African government, and written documents and internet sources to contextualise the study. The study employed

comparative education methods in comparing the 2005 and 2009 enrolments in doctoral education programmes in order to highlight their changes and patterns of growth.

Defining student mobility: Challenges and limitations

De Wit, Agarwal, Said, Sehoole & Sirozi (2008) argue that, despite much work on international education and student mobility in the past decade, the issues of what constitutes student mobility, and who is a mobile student remain unresolved. According to UNESCO (2006:30), internationally mobile students can be defined by citizenship, permanent residence, or prior education, and they observe that "countries differ in the criteria used to actually report data concerning mobile students, and that such data may not be entirely comparable". Richters and Teichler (2006:83) define an internationally mobile student as a "student having crossed a national border in order to study … for at least ... a certain period of time in the country they have moved to", which is the definition adopted in this article. Bhandari and Blumenthal (2011:4) point to the challenges in defining and comparing mobile student data, including:

> *(i) a time-lag between data collection and data releases; (ii) because the data are primarily collected through Ministries of Education, they do not always capture enrolments at private institutions, thus resulting in an underestimate of international students, (iii) only students enrolled for the duration of a year or more are counted in the data, thus resulting in an undercount of these students.*

Conceptual framework: Pull and push factors

The movement of students around the world has been characterised by De Wit *et al.* (2008) as being influenced by pull and push factors. Pull factors refer to aspects which make a country and institutions within it attractive to students and inform their decision to move to study in that country, while push factors refer to aspects which make a country or its institutions less attractive and, as such, cause students to seek opportunities elsewhere.

In the context of this paper push factors are analysed from the point of view of government priorities as result of lack of capacity and or lack of potential students to take up higher education opportunities , whereas pull factors are "magnets" of opportunities that attract international students (from the student point of view).

According to Bhandari and Blumenthal (2011:7-8), many factors, real or perceived, can affect a student's choice of destination, including:

> *the cost and quality of higher education programmes, the value of the degree or professional credentials for future careers, the availability of certain areas of specialisation, access to the education system and a country, and important historical, linguistic and geographic ties between the home and destination countries.*

There are also a number of push factors which cause people to search for better opportunities elsewhere, such as a lack of adequate funding, significant overcrowding, low quality of academic programmes, and poor working conditions for academic staff and administrators.

Doctoral education, mobility and the role of the state

Doctoral education is seen as lying at the core of university research capacity and as the primary source of research productivity and innovation in the global knowledge economy (Nerad, Tryzna & Heggelund, 2008). By its very nature, doctoral education is expected to produce new, cutting-edge and original ideas and knowledge, through research and exchange of ideas, knowledge and information between professors, researchers and students. This exchange of ideas can take place locally, at institutional level, or across national borders, through transactions that occur within networks of researchers located in various parts of the globe. Cross-border transactions may take various forms: by means of correspondence via the

web, e-mail, Skype or video conferencing; or through the physical movement of scholars or researchers across national borders as a manifestation of research collaboration. These transactions, be they virtual or physical, suggest the notion of mobility, which is one of the currencies that anchors and sustains the phenomenon of globalisation. Cross-border transactions and the exchange of information are what constitute the nature and form of the knowledge economy. According to Carnoy (2001), in the globalised information technology environment, knowledge formation and power over knowledge are moving out of the control of the nation state. Dominant values and norms are increasingly being organised around knowledge and information that circulate globally and serve a globalised innovation and profit-making structure. The most highly valued forms of information and knowledge now have their locus in the global economy, not in any single national site.

The centrality of the notions of the exchange of ideas and the mobility of students and scholars globally in their quest to generate and utilise knowledge, suggests a relationship between globalisation and higher education, in general, and doctoral education, in particular. De Wit *et al.* (2008) see higher education as becoming increasingly influenced by globalisation and the latter becoming a more vigorous actor in higher education. On the other hand, Nerad and Trzyna (2008) question whether globalisation is contributing to the creation of inequalities in doctoral education globally, or whether doctoral programmes are simultaneously influencing the process and nature of globalisation by producing a new generation of researchers and leaders. These issues remain a debate for further exploration.

Given that doctoral education programmes are concerned with the generation of knowledge and skills, which are the lifeblood of globalisation, the relationship between globalisation and higher education cannot be refuted. However, the role of the state needs to be added to the dynamic of this relationship. This article adopts the view that the state is playing an active role in the process of globalisation of higher education and of doctoral education programmes, especially with regard to facilitating the mobility of students and scholars. This takes the form of active recruitment of foreign students; sending local students abroad for the purposes of studying; granting visas for inward-bound students; arranging intergovernmental agreements to facilitate the exchange of students; or making scholarships available for international students or study abroad programmes.

Globalisation can be viewed as creating inequalities around the world in the form of unequal access to knowledge and information (Carnoy, 2001). In particular, it can be considered as contributing to the uneven distribution of doctoral education and research agendas around the world. According to Nerad & Trzyna, (2008) the Shanghai Jiao Tong University Annual Rating System of research productivity by world universities, as measured by international awards, publications in major journals and citations listed in major indexes, shows that of the top twenty world research universities seventeen are in the United States, two in Britain and one in Japan No universities from the developing world, namely Africa, Latin America or Australasia (other than Japan) fall in this league. Despite global inequalities in the distribution of quality institutions as reflected in the results of the rating system, developing countries continue to engage with the phenomenon of globalisation by investing in promoting research productivity and producing highly skilled doctoral graduates. As Carnoy (2001) points out, national and regional governments, which have historically monopolised knowledge and shaped its distribution, are still the major sites for organising knowledge production and transmission, but now for the benefit of the global economy. In the context of this article, this production and distribution of knowledge find expression in the state's facilitation of access to opportunities for knowledge exchange, production and distribution in the form of international student mobility.

Globalisation, which "has collapsed historical barriers to mobility and increased differentials between countries in terms of salaries, employment opportunities and living conditions", is also contributing to movements of people around the world in search of life and educational opportunities (Altbach & McGill-Peterson, 2008:viii). With the pressures of globalisation exerting themselves on national economies and nation states, doctoral education programmes are expected to produce multi-skilled graduates who are competent writers, speakers, managers and team members. Such graduates will be able to effectively communicate research goals and results, and participate effectively in corporate, national and university

research and development projects (Nerad & Trzyna, 2008). Where capacities to produce this kind of graduate are lacking at home, governments should intervene and send their nationals to acquire those skills across the borders; thus, prompting the phenomenon of international student mobility. For example, China's Open Door Policy, which was adopted in 1978, was followed by an increase in outward-bound student mobility sponsored by the government in search of quality education overseas. As Yang (2011:26) asserts, since then "over 100 000 fellows have studied overseas under the Chinese government scholarship programme and approximately 1.3 million Chinese students sponsored by other sources have pursued their studies in over 100 countries and regions". The push factors at home for this development were a lack of quality control in universities, increasing unemployment among school leavers, and a shortage of high-quality faculty members in universities; while the availability of study opportunities in other countries served as a pull factor for students keen to study abroad. Over the same period of time, "390 000 Chinese returnees brought back not only knowledge, but also new ideas and innovations that have contributed significantly to China's rapid development" (Yang, 2011:26). A 2002 survey conducted in 100 Chinese universities on the impact of study-abroad programmes showed that 58% of PhD supervisors were returned fellows. In Peking University, one of the leading universities in China, 80% of PhD supervisors and 79% of academic staff in the Chinese Academy of Sciences and Chinese Academy of Engineering had overseas study experience (Yang, 2011).

On the other hand, push factors, such as a shortage of nationals to train in areas of critical or scare skills, can force a country to recruit international students to meet local needs. For example, Kehm (2007) shows that the United States has a serious problem in generating a sufficient number of highly trained engineers and natural scientists from their own national student body because too few young people choose these subjects. As a result, it actively recruits international students into master's and doctoral programmes in these subjects, which again leads to the phenomenon of student mobility. In such a scenario, the lack of national students to take up training opportunities in areas of critical need serves as a push factor for the government to recruit international students, whereas the availability of training opportunities serves as a pull factor for international students. This balance demonstrates the interplay of push and pull factors in facilitating student mobility. Bhandari and Blumenthal (2011) point out that, since 2006, foreign-born students in the US have earned over 50% of US doctoral degrees in mathematics, computer science, physics and engineering, with most students coming from China, India and Korea. In engineering alone, foreign students earned 68% of all doctorates in 2007. These developments show that nation states need not be passive spectators in the globalisation of higher education, but can become active actors and agents in promoting and shaping this phenomenon.

This section has demonstrated the relationship between globalisation and higher education, and the role of the state in facilitating this relationship, which includes facilitating access to and distribution of opportunities for knowledge production through the mobility of scholars in doctoral education programmes. This mobility is driven by various pull and push factors as nation states and students respond to the demand for opportunities and capacities available in national contexts. In addressing national development goals in the face of a lack of internal capacity, nation states can seek external assistance by sending scholars abroad for training, while those with capacity but lacking human resources to take up opportunities, should recruit international students to meet their need. In this regard, the interplay of push and pull factors results in student mobility, as the above examples have demonstrated.

Doctoral education in South Africa: A brief overview

Studies on doctoral education in South Africa are rare and the few that exist have been conducted in recent years (Bawa, 2008; CREST, 2009; Herman, 2009; 2011a). In order to understand the state of doctoral education in South Africa and the issues flowing from it, it is necessary to briefly describe the higher education system in South Africa.

The post-apartheid government that came into power in 1994 inherited a highly fragmented and racialised higher education system riddled with inequalities. The system consisted of 21 universities and 11 technikons (polytechnics). The university sector distinguished between historically black universities

(HBUs), which were meant to populate the civil service for the apartheid government's Bantustan system and had no research mandate, and historically white universities (HWUs), which were endowed with resources and produced the majority of research outputs and doctorates in South Africa. This resulted in a situation described by Bawa (2008) in which 80% of South Africa's scientific human resource base is white, and about 80% of students in academic training are white. Bawa (2008) further points out that approximately 90% of the scientific output of the country is produced by white scientists. As part of the transformation agenda of the new (1994) government, these imbalances had to be redressed.

Starting in 2002, South Africa went through a restructuring process in the form of mergers of higher education institutions. The 21 universities and 11 technikons were restructured and merged into 23 universities. These were further differentiated into 11 traditional universities focusing on research and a mix of discipline-based and professional degree qualifications; six universities of technology offering a combination of technological, vocational and professional programmes leading to a certificate, diploma or degree; and six comprehensive universities that combine both types of institutions (DoE, 2001. All these institutions play differential roles in doctoral education, based on their approved programme and qualification mix as well as their existing capacity and expertise.

Inequities in the doctoral education programmes in South Africa

Despite the restructuring process aimed at redressing some of the imbalances of the past, HWUs continued to be the major producers of doctoral graduates and research (Herman, 2011a). Herman (2011a) further shows how the early higher education policies of the post-apartheid government initially overlooked doctoral education, with priority being placed on the undergraduate level and first entrants into higher education. It was only since 2006/2007 that national policies have begun to view the doctorate as being distinct from other postgraduate degrees. The delay in addressing the doctoral education situation implied a corresponding delay in responding to the gross inequalities in skills and knowledge production highlighted by Bawa (2008).

The challenges of the global economy put pressure on nation states to respond with relevant policies and human resources in order to maintain their levels of competitiveness. In its quest for global competitiveness, the South African government has decided to make resources available for innovation, research and capacity building, particularly at postgraduate level. The Department of Science and Technology (DST) and the National Research Foundation (NRF) have assigned a specific role to the PhD as a key driver for economic development and the transformation of the economy towards a knowledge-based economy (DST, 2007). However, this plan faces challenges because of the current low output of PhD graduates. In order to overcome such low outputs and meet its development goals, the DST proposed the production of 6000 PhD graduates per year in Science, Engineering and Technology (SET) disciplines by 2018. Whether or not this target will be met falls outside the scope of this paper, but has been addressed in the study by Herman (2011b).

The uneven distribution of doctoral education and research agendas around the world as described previously is mirrored at national levels and confirmed by South African doctoral education data as this article will demonstrate. Herman (2011a) argues that, despite policy intentions to abolish the knowledge divide between HWUs and HBUs through mergers, the institutional distribution of doctoral production remains skewed. Only one HBU is among the top 10 universities responsible for 87% of all doctoral graduates produced in 2007. Table 1 shows that these top institutions were also responsible for the enrolment of 83% and 84% of all doctoral students in 2005 and 2009 respectively.

Table 1: Doctoral enrolments in the top 10 public higher education institutions

University	Enrolments 2005		Enrolments 2009	
	No of PhDs	% of the total	No of PhDs	% of the total
University of Pretoria	1535	20%	1434	17%
University of KwaZulu-Natal	1078	14%	1606	19%
University of Cape Town	967	12%	1055	12%
University of Stellenbosch	800	10%	985	12%
University of the Witwatersrand	694	9%	1038	12%
University of South Africa	975	12%	741	9%
North-West University	373	5%	470	6%
University of the Free State	575	7%	587	7%
University of Johannesburg	552	7%	551	7%
University of the Western Cape	312	4%	419	5%
Total	7861	100	8886	100
Overall enrolment	9435	83%*	10530	84%*

*Percentage contribution of these 10 institutions to the overall doctoral education enrolments

Source: Hemis data; DHET (2010)

With the burden of producing doctoral graduates resting on a small number of institutions, the question remains as to how the targets set by the DST will be met. Herman (2011a) argues that it is unlikely that universities will have the capacity to meet the expanded doctoral production targets on their own. Part of the solution may be the consideration of external examples such as the Chinese model of sending large numbers of students to pursue their studies outside the country. Thus, the lack of internal capacity to produce the required number of doctoral graduates will act as a push factor to seek external support in doctoral training.

An added problem is the challenge of having a small pool of potential doctoral students from which to recruit. In response to this push factor, institutions are beginning to look outside the borders of the country to recruit students from the rest of the African continent (Herman, 2011a) in order to meet their equity targets for the enrolment of black students. These targets serve as a pull factor for potential candidates. The problems identified and the solutions sought point to the pull and push factors which act as catalysts for mobility in doctoral education programmes. Data on international student mobility are presented in the following sections.

International student mobility regarding doctoral education in South Africa: Pull and push factors

Despite the inherent inequalities of the system as mentioned earlier, South African higher education institutions and doctoral education programmes, in particular, continue to attract international students.

Table 2 International student enrolments in doctoral programmes in South Africa

Region of origin	2005	%	2009	%
SADC	1156	12	1260	12
Rest of Africa	727	8	1076	10
Europe	252	3	282	3
Asia	176	2	220	2
N America	223	2	189	2
S America	17	0	23	0
Australia Oceania	13	0	25	0
International total	2564	27	3075	29
National total	6870	73	7454	71
Total	9434	100	10529	100

Source: Hemis data; DHET (2010)

Table 2 indicates that South African doctoral education programmes drew students from all the regions of the world. Of the total 9434 doctoral students enrolled in 2005 in South Africa, 2564 (27%) were international students, suggesting a significant element of mobility. The 2009 data shows that there was a 2% increase in student numbers from 9434 in 2005 to 10529 in 2009. A proportion of that increase was taken up by international students from Africa whose proportion increased from 8% to 10%. As pointed out earlier, the increase in the number of African students can be attributed to the push factor on the part of universities that recruit these students in the quest to meet their equity targets in order to balance out the predominance of white students in doctoral programmes.

The patterns of doctoral education enrolments in South Africa reveal the north-south (with the presence of students from Europe and North America) and south-south movement (with students from Africa, South America and Asia, which is contrary to findings of earlier studies that suggest the predominant north-north and south-north mobility of students (De Wit *et al.*, 2008). The pull factors for students from Europe and North America can be attributed to the quality in some programmes offered by some universities in South Africa, as well as the historical ties South Africa has with some European countries such as England, the Netherlands and Germany (Sehoole, 2008). Language is another pull factor as South African universities offer French, German, Dutch, Italian and Portuguese, subjects which are attractive to European speakers of these languages.

The use of English as the predominant language of learning in South African universities could also be a pull factor in the second trend observed, namely the south-south movement of students from Africa, Asia and South America. As English has become the language of the global economy, many students are seeking opportunities to further their studies in systems that teach through the medium of English. In his comparison of the Indian and Chinese higher education systems, Agarwal (2011) argues that the Indian system has a better reputation than that of China, citing the use of English as a language of instruction as one of the pull factors towards the Indian higher education system. Similarly, Lasanowski (2011) points to the growth in the amount of English-language provision in non-English countries as a factor in attracting an increasing number of "eager-for-English" students from beyond traditional recruitment "pools" or "source" countries. She attributes Germany's growing English-medium curricula as one of the factors explaining why it is gradually becoming a more popular destination among students from Brazil and Vietnam. The South African higher education system has traditionally been English, with Afrikaans added in the middle of the 20th century, and the country is home to reputable and quality English-medium universities.

Costs also play a role as a pull factor to South African universities. Globally, institutions are competing for a market share in attracting international fee-paying students. As a result of decreased public funding of higher education and increased operational costs, some institutions are increasingly

looking to internationalisation activities as a way of generating alternative sources of funding (Nerad & Trzyna, 2008). The purpose or use of the income thus generated is often questioned with regard to whether it is profit oriented, or can be viewed as cost recovery. Due to the fact that the South African government pays subsidies to universities for all students (both national and international), thus absorbing some of the costs, studying in South Africa tends to be relatively cheap. Furthermore, for foreigners, the favourable rand-US dollar and Euro exchange rates contribute towards making studying in South Africa more affordable compared with studying in the US or Europe.

Enrolments according to field of study

Data on global student mobility suggest that students cross borders in search of qualifications in Science, Technology, Engineering and Mathematics (STEM) (Bhandari & Blumenthal, 2011), and South African data show similar patterns. Table 3 shows an increase in enrolments of doctoral students in the natural sciences, from 4037 to 5092. International students accounted for the majority of that increase, with their number increasing from 1117 (27%) to 1732 (34%). This increase was at the expense of enrolment of national students, whose proportion dropped from 72% to 66%.

Table 3: Enrolment of doctoral students according to field and nationality

	2005			2009		
	Total	**National**	**International**	**Total**	**National**	**International**
Humanities	5398	4178 (77%)	1220 (23%)	5438	3845 (71%)	1592 (29%)
Natural sciences	4037	2920 (72%)	1117 (27%)	5092	3369 (66%)	1723 (34%)
Total	9435	7092 (75%)	2337 (25%)	10530	7214 (69%)	3315 (31%)

In addition to the quality dimension highlighted earlier, the growing interest of international students in doctoral education in SET could be attributed to the fact that South Africa is a signatory to various accords governing practice in the field of engineering. For example, South Africa is a signatory to the Washington (1989), Sydney (2001) and Dublin (2002) accords (International Engineering Alliance, n.d.) which advance bench-marking in the engineering profession. A benefit of being a signatory to these accords is that international students who complete engineering programmes in South Africa are certified to practise anywhere in the world.

South Africa's role as a regional hub for doctoral education training

South Africa is emerging as a regional hub in Southern Africa with students from this region showing their preference for studying at South African universities. This trend is enhanced by South Africa's policy of accepting students from the SADC region and the rest of Africa as a way of contributing to the continent's human resources development and helping to stem the crippling "brain drain" (South African Year Book, 2004/5). The movement of students in the SADC regional is facilitated by the SADC protocol on Education and Training[1], of which South Africa is a signatory, which was ratified in 1997 (SADC, 1997).

Table 4: PhD students from SADC and other African countries studying in South Africa

Country	2005	2009
Zimbabwe	254	538
Lesotho	55	104
Namibia	68	97
Botswana	95	95
Zambia	77	87
Malawi	53	85
Mozambique	54	64
Tanzania	41	73
Other African countries	727	1076

Source: Hemis data; DHET (2010)

Table 4 reveals that South Africa is enrolling a significant number of doctoral students from the SADC region and other African countries. The table further shows that Zimbabwe, Lesotho, Namibia and Botswana were the main regional providers of doctoral students to South Africa, with Zimbabwe and Lesotho doubling their numbers during the period from 2005 to 2009. There are a number of pull factors to explain why South Africa is attractive to students from the region. First, South Africa has the most developed higher education system in the region with some internationally renowned institutions. Second, all four major sending countries are South African neighbours and share national borders so that geographic proximity makes South Africa easily accessible. Third, each of the sending countries shares some common language with South Africa, with some of the communities on each side of the border having been divided only by colonial borders. As a result, being in South Africa is like "being at home", except for occasional reported incidents of xenophobia.

There are also some push factors which drive students from their own countries to study in South Africa. The political instability in Zimbabwe, which has continued since 2000, has led to a near collapse of higher education in that country. The combination of economic hardships and persecution of government opponents contributes to the exodus of students, some of whom choose to study in South Africa. The limited higher education opportunities in Lesotho, Botswana and Namibia, with each country having only one public university, could be a contributory factor in the increase in numbers of students from those countries.

The number of inbound students to South Africa portrays the country as an emerging hub for higher education in the SADC region. Unlike Hong Kong and Singapore, which are deliberately investing in becoming regional hubs driven by economic rationales (Knight, 2011), the South Africa government views education as a public good and not as a commodity.

Conclusion

This article has highlighted the centrality of doctoral education in producing knowledge and human resources for the global economy. With globalisation depending on and being sustained by the movement of people and ideas, this article has demonstrated how student mobility is an integral part of the global doctoral education phenomenon. International student mobility is driven and sustained by pull and push factors as countries and individuals compete for access to the best available minds and opportunities around the world. The tussle of pull and push factors in the quest for best opportunities, skills and resources, in turn, sustain the global competitiveness of countries. Given the inequalities in the global economy with regard to the quality and types of universities and programmes available, countries also have differential capabilities in competing for the best available minds, skills and opportunities. In this regard countries with more financial resources but less institutional capacity are able to buy the best available opportunities around the world for their students, as the case of China demonstrates. Similarly,

countries with institutional capacity but fewer students available to take up these opportunities are able to attract bright minds from around the world, as the case of the United States demonstrates.

South Africa's doctoral education programmes tend to mirror developments in global doctoral education, except that the state is not active in the recruitment of either international students or sending local students overseas for capacity building. The South African government does create enabling conditions for the inflow of international students by issuing visas, providing subsidies, and creating enabling policy frameworks for them to study in South Africa. Higher education institutions have differential capacities and offer varying quality in their doctoral education programmes. This is part of the legacy of apartheid education which continues to reproduce inequalities in knowledge production, with knowledge and skills still being predominantly produced in HWUs and by ageing white academics. Despite these inherent inequalities, doctoral education programmes in South Africa remain the most developed in the Southern African region and on the African continent. These programmes are able to attract students from the rest of the world as demonstrated by enrolment data by regions of the world. This development may be attributed to pockets of excellence and quality that are found in some of the doctoral programmes offered by South African universities.

In order to meet the challenges of global competitiveness and the government's set target of numbers of doctoral graduates by 2018 South Africa needs to expand its institutional capacity and recruitment pool for doctoral education programmes. In this regard China offers instructive lessons with regard to addressing its goals in the context of resource constraints, whereas the United States offers lessons in responding to a small recruitment pool for doctoral education programmes. Both these strategies are based on the phenomenon of student mobility as driven by various pull and push factors. Contrary to studies, which suggest that these global developments are taking place in spite of the state, this article has argued that the state is central to and shapes developments in doctoral education programmes around the globe.

There is a need for further and in-depth study on the phenomenon of internal (national) student mobility which finds expression in students studying outside their home provinces and which appears to mirror that of international student mobility.

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(Endnotes)

1 The protocol has been signed by all 15 SADC member states, namely Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mozambique, Mauritius, Madagascar, Namibia, South Africa, Swaziland, Seychelles, Tanzania, Zambia, and Zimbabwe.