The Size, Shape, Success and Substance of Postgraduate Education in South Africa

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EQPE Colloquium
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Quality in PG Education: Considerations of size, shape, success and substance

Information Sources: CHE Resources

HEQC-online

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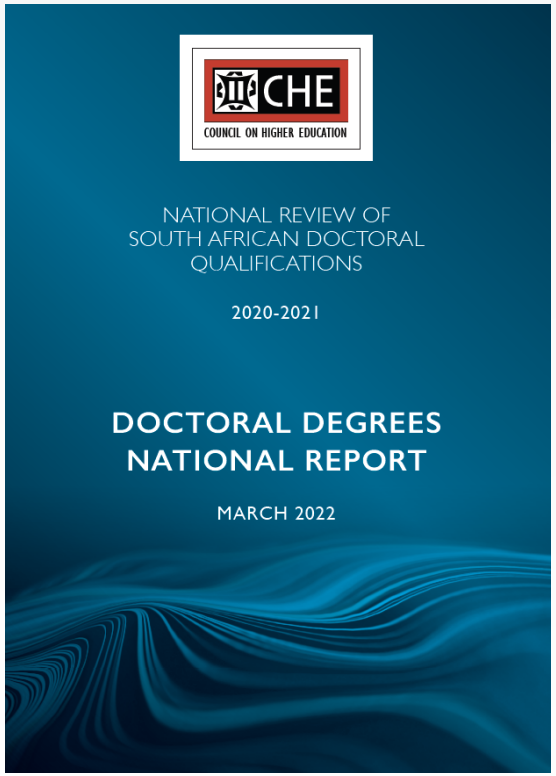

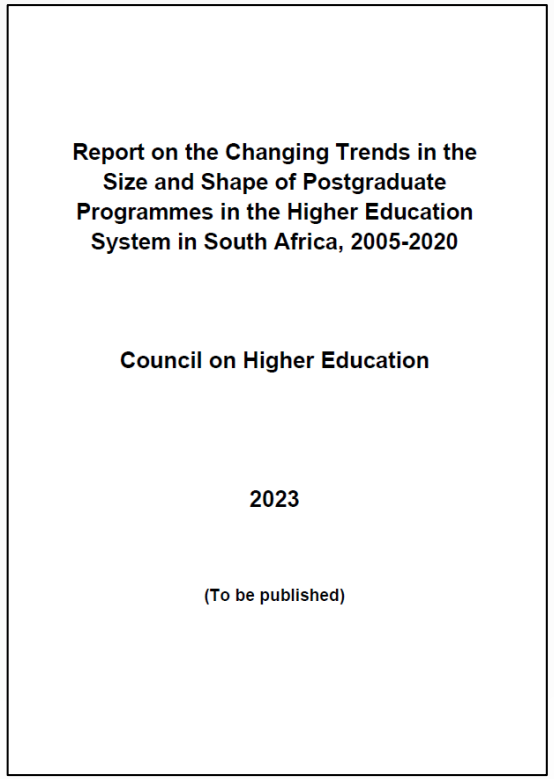

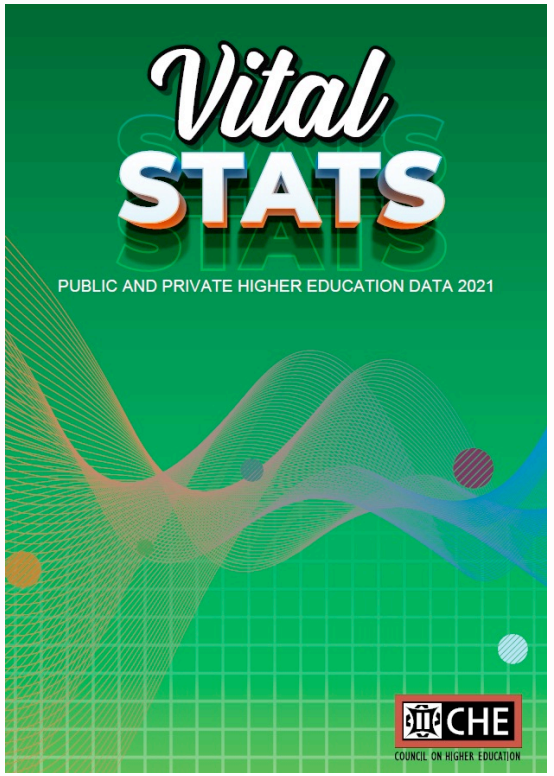

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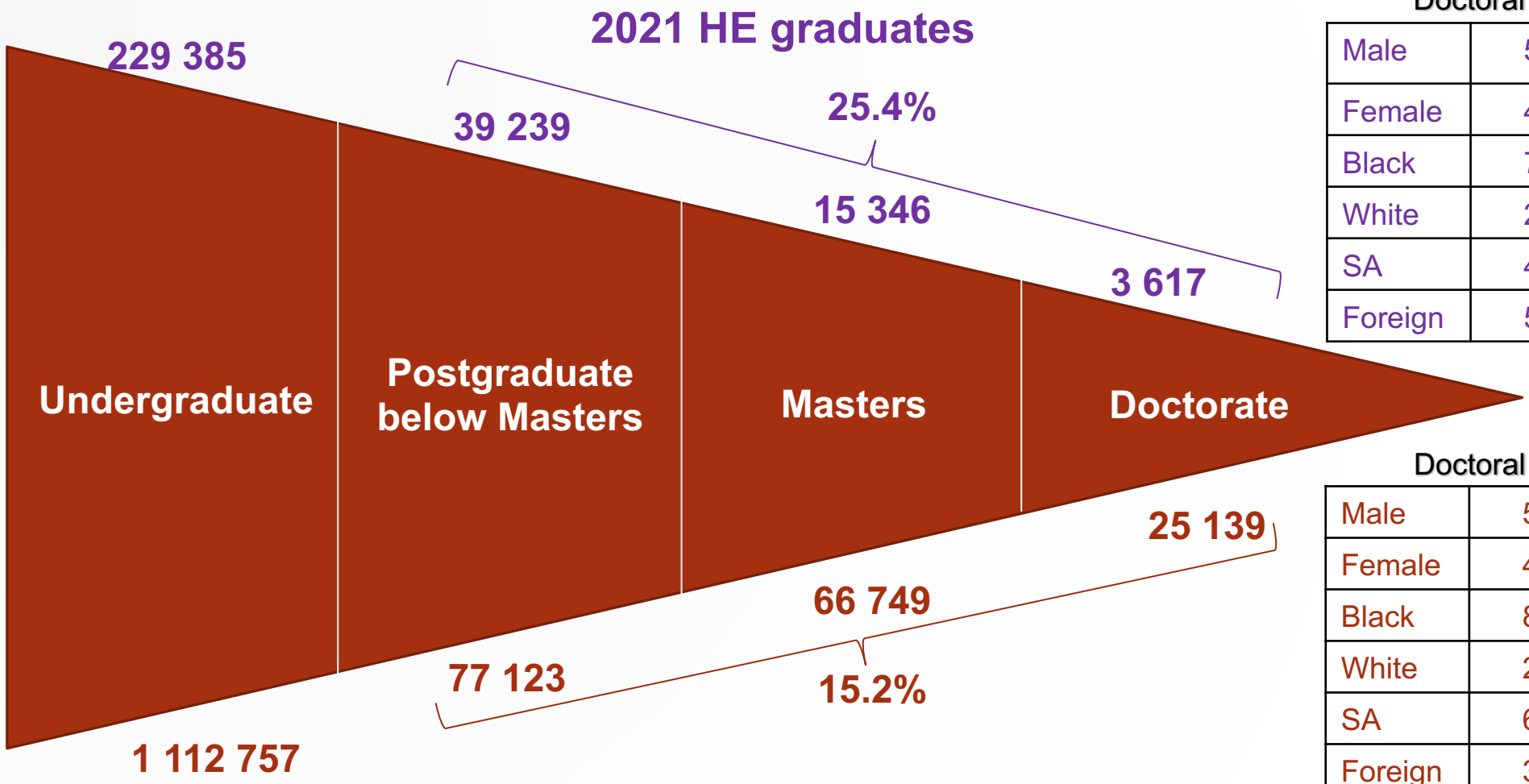
UG and PG HE Enrolments and Graduates

Undergraduate

Male	35.2%
Female	64.8%
Black	89.0%
White	11.0%
SA	96.9%
Foreign	3.1%

Undergraduate

Male	38.0%
Female	62.0%
Black	91.0%
White	9.0%
SA	97.4%
Foreign	2.6%



Doctoral

Male	54.0%
Female	46.0%
Black	76.3%
White	23.7%
SA	43.3%
Foreign	56.7%

Doctoral

Male	51.6%
Female	48.4%
Black	80.0%
White	20.0%
SA	63.1%
Foreign	36.9%

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UG and PG HE Enrolment Growth – 2005 to 2020

	2005	% Total	2010	% Total	2015	% Total	2020	% Total	%C
Undergrad	600 620	86%	726 882	86%	804 469	86%	925 489	86%	54%
Postgrad	98 725	14%	115 766	14%	132 745	14%	151 268	14%	53%
Total	**699 345**	**100%**	**842 648**	**100%**	**937 214**	**100%**	**1 076 757**	**100%**	**54%**

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PG Enrolment Growth by Qualification Type – 2005 to 2020

	2005	% T	2010	% T	2015	% T	2020	% T	% C	AAG
PG Dip/Hons	44 970	47%	57 477	50%	57 686	43%	67 548	45%	50%	3%
Masters	44 321	45%	46 699	40%	55 546	42%	60 132	40%	36%	2%
Doctoral	9 434	10%	11 590	10%	19 513	15%	23 588	16%	150%	6%

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PG H/C Enrolments: Race (SA and International) and Qualification Level, 2005-2020

	2005	2010	2015	2020	% Change
Black					
PG/Honours	32 925	44 677	44 876	56 528	72%
Masters	26 721	30 251	38 696	46 365	74%
Doctoral	4 601	6 614	12 936	17 915	289%
Total: Black	**64 247**	**81 452**	**96 508**	**120 808**	**88%**
White					
PG/Honours	11 967	12 145	10 918	9 932	-17%
Masters	17 504	16 015	15 028	11 605	-33%
Doctoral	4 811	4 853	5 777	4 986	4%
Total: White	**34 382**	**33 013**	**31 723**	**26 523**	**-23%**
Unknown	96	1 301	4 514	3 937	4001%
Total	**98 725**	**115 766**	**132 745**	**151 268**	**53%**
Black as % of Total PG	65%	70%	73%	80%	
White as % of Total PG	35%	29%	24%	17%	
Unknown as % of Total PG	0%	1%	3%	3%	

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PG H/C Enrolments: Gender and Qualification Level, 2005-2020

	2005	2010	2015	2020	% Change
Female					
PG/Honours	27 112	36 431	36 091	42 027	55%
Masters	20 127	22 340	28 077	33 076	64%
Doctoral	3 905	4 888	8 649	11 304	190%
Total Female	**51 144**	**63 659**	**72 817**	**86 047**	**68%**
Male					
PG/Honours	17 858	21 046	21 595	25 510	43%
Masters	24 194	24 356	27 467	27 039	12%
Doctoral	5 529	6 700	10 862	12 282	122%
Total Male	**47 581**	**52 102**	**59 924**	**64 831**	**36%**
Unknown	0	5	5	390	
Total	**98 725**	**115 766**	**132 745**	**151 268**	**53%**
Female as % of Total PG/Hons	60%	63%	63%	62%	
Male as % of Total PG/Hons	40%	37%	37%	38%	
Female as % of Masters	45%	48%	51%	55%	
Male as % of Masters	55%	52%	49%	45%	
Female as % of Total Doctoral	41%	42%	44%	48%	
Male as % of Total Doctoral	59%	58%	56%	52%	
Female as % of Total PG	52%	55%	55%	57%	
Male as % of Total PG	48%	45%	45%	43%	
Unknown as % of Total PG	0	0	0	0	

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Headcount Enrolments: Nationality and Qualification Level, 2005-2020

	2005	2010	2015	2020
Total: All Nationalities	**98 725**	**115 766**	**132 745**	**151 268**
SADC % of Total Postgraduate	6%	8%	11%	9%
RoA % of Total Postgraduate	3%	3%	5%	4%
RoW % of Total Postgraduate	3%	2%	2%	1%
International % of Total Postgraduate	12%	14%	18%	15%
South Africa % of Total Postgraduate	88%	86%	82%	85%
RoA & SADC as % of Total PG/Hons	6%	7%	9%	6%
RoW as % of Total PG/Hons	1%	0%	1%	0%
South Africa as % of Total PG/Hons	93%	93%	90%	93%
RoA & SADC % of Total Masters	11%	14%	17%	13%
RoW as % of Total Masters	3%	3%	2%	1%
South Africa as % of Total Masters	86%	83%	82%	86%
RoA & SADC as % of Total Doctoral	16%	24%	34%	33%
RoW as % of Total Doctoral	7%	6%	5%	4%
South Africa as % of Total Doctoral	77%	70%	61%	63%

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Postgraduate enrolments from 2005- 2020: Summary

Overall Postgraduate Enrolments	Increased by 53% But proportionally remained static at 14%
Enrolments with respect to gender	The female share of total enrolments increased from 52% to 57% and the male share decreased from 48% to 43%.
Enrolments of Black South Africans	Increased overall by 82%
Enrolment share of Black South Africans	Increased from 64% to 81% Doctorate – 63%, Masters – 86%, PGDip/Hons – 93%
Enrolments of students from SADC/RoA/World	H/C enrolments increased by 92% from 2005, but proportionally from 12% to 15%. Greatest proportional increase is in the Doctorate where the share of international enrolments increased from 16% in 2005 to 33% in 2020.

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Some NPHE/NDP targets for postgraduate education: Where are we?

NDP Target : Increase the proportion of postgraduate-to-total students to 25%.

Current: Stable at about 14% for the last decade.

NDP Target : 5000 Doctoral graduates per annum

Current: 3 617 doctoral graduates in 2021

NDP Target : increase the number of African and women postgraduates, especially PhDs,

Current: Steady growth in participation by woman and African students.

NPHE Target: Shift enrolments between the humanities, business and commerce and science, engineering and technology from the current ratio of 49%: 26%: 25% to 40%: 30%: 30% respectively.

PG Current: 36%: 28%; 36%

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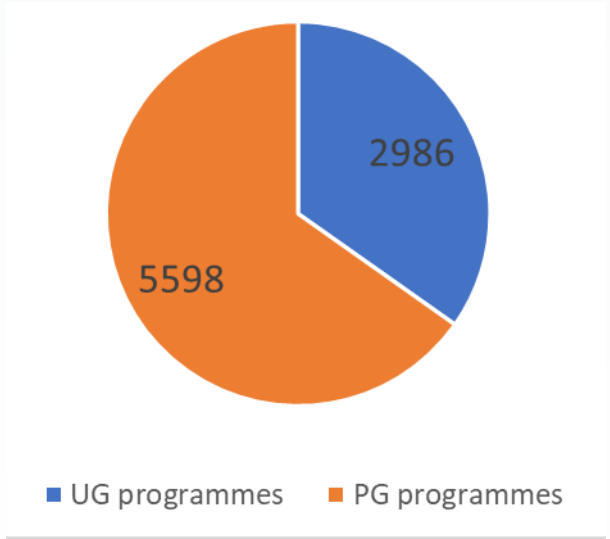
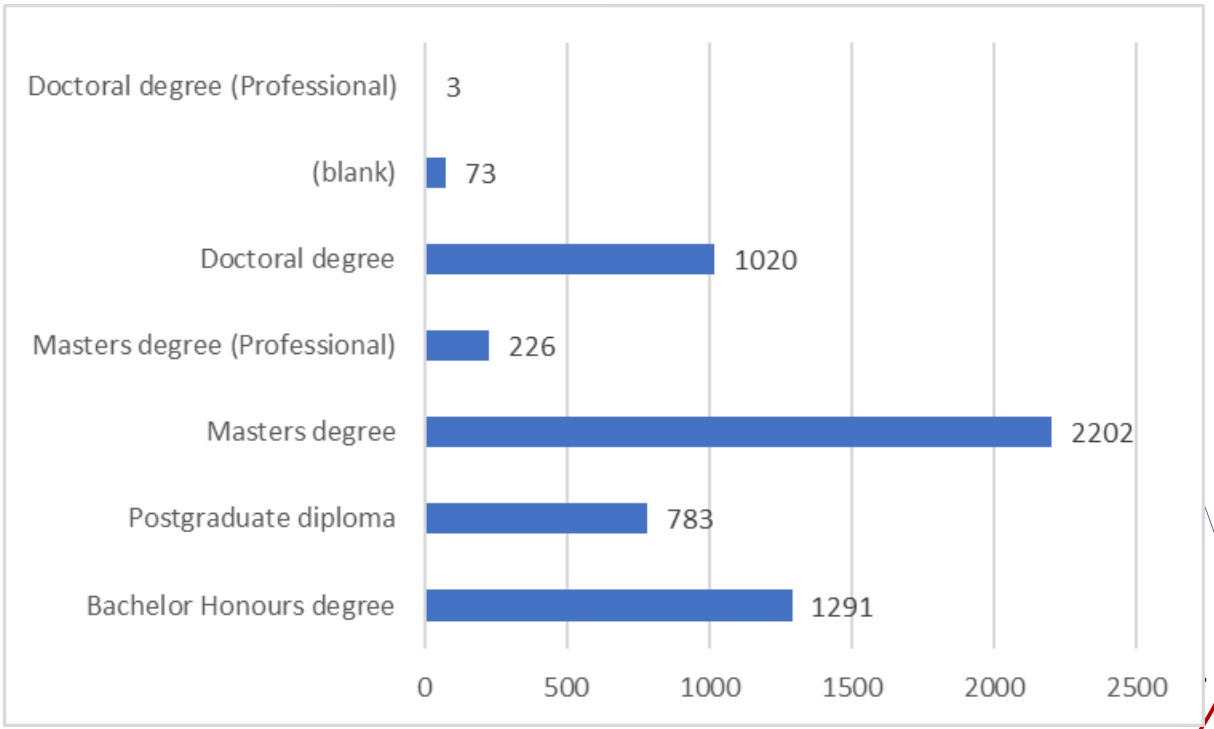
SHAPE

Number of accredited PG programmes by institutional and qualification type*

	Private HEI	Public HEI	Public Nursing	Grand Total
Bachelor Honours degree	78	1213		**1291**
Postgraduate diploma	70	702	11	**783**
Masters degree	35	2167		**2202**
Masters degree (Professional)	10	216		**226**
Doctoral degree	14	1006		**1020**
(blank)**	31	42		**73**
Doctoral degree (Professional)		3		**3**
Grand Total	**238**	**5349**	**11**	**5598**

*As at end Dec 2023.
**The qualification type field was only introduced in 2010/2011 so some applications don't have this data..
***8584 programmes altogether, meaning 2986 UG programmes.





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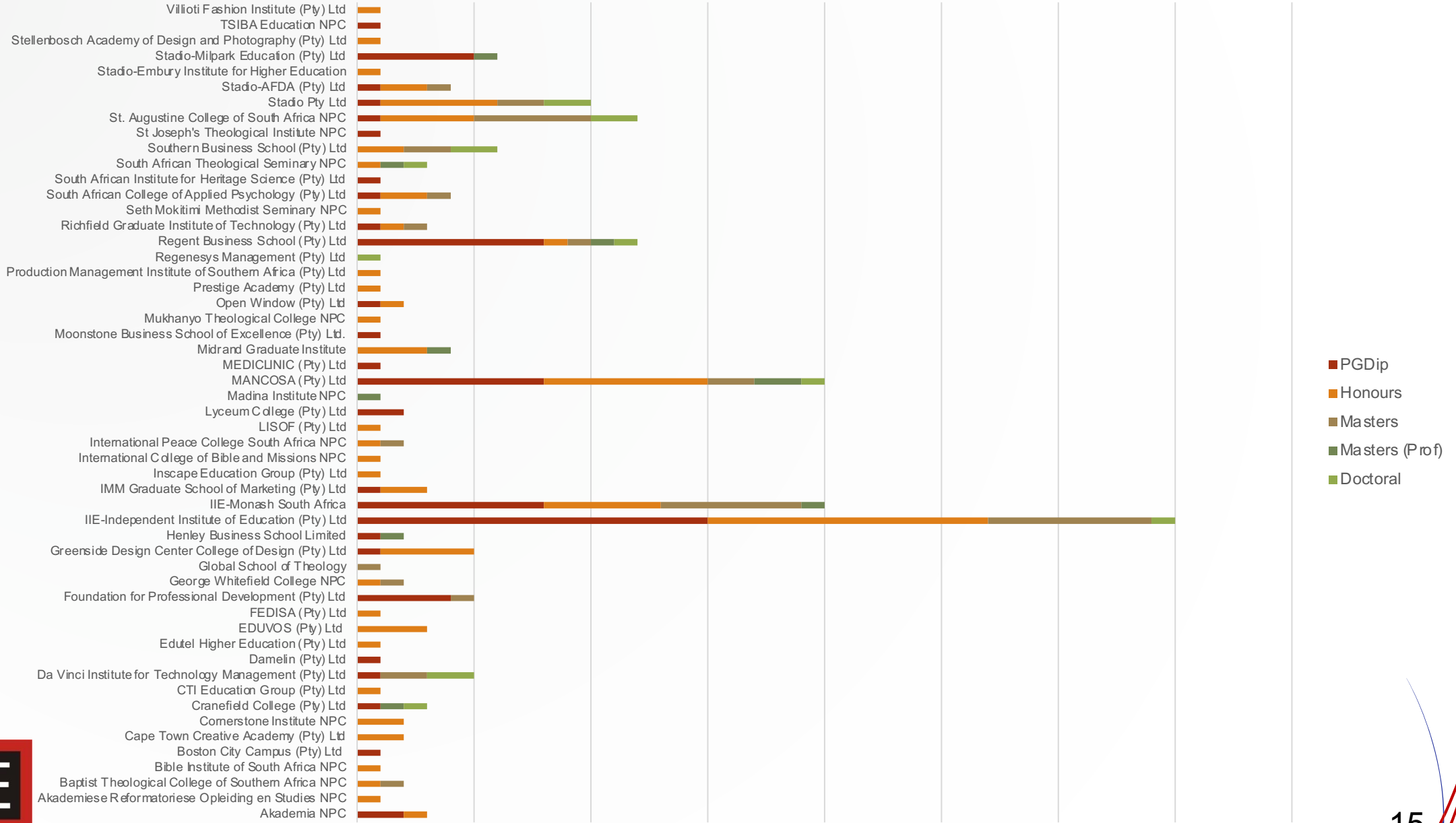
Number of accredited PG programmes by pHEI



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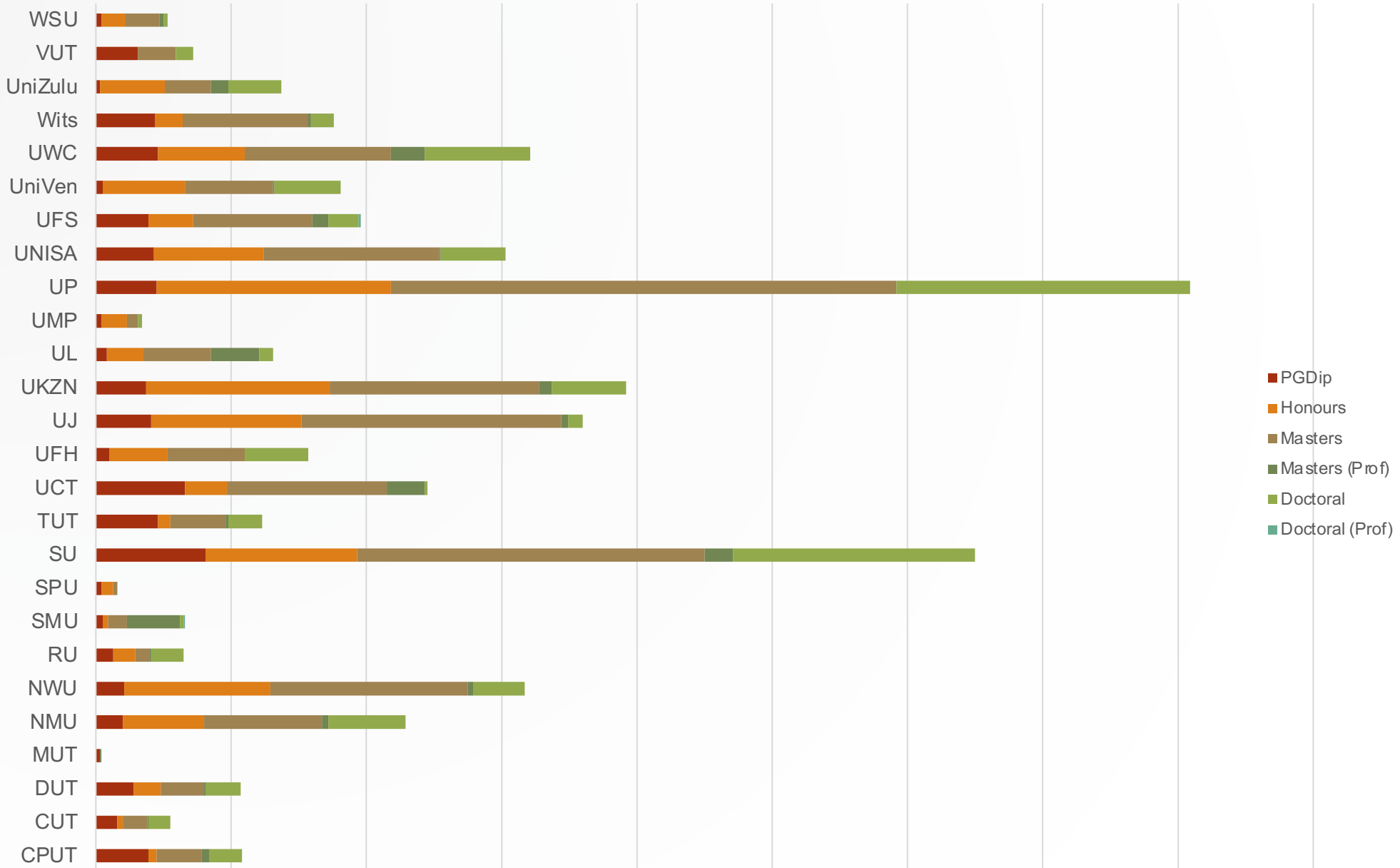
Number of accredited PG programmes by University



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Shape of PG Enrolments by Field of Study: 2005-2020

	2005		2010		2015		2020	
	T	%T	T	%T	T	%T	T	%T
SET	25 822	26%	34 256	30%	45 912	35%	55 210	36%
B&C	21 292	22%	25 362	22%	31 921	24%	42 091	28%
Hum	26 438	27%	26 661	23%	34 629	26%	37 423	25%
Educ	25 173	25%	29 486	25%	20 283	15%	16 542	11%
Total	98 725	100%	115 766	100%	132 745	100%	151 268	100%

- Growth in SET encouraging but decrease in humanities (and education) to below 40% concerning?

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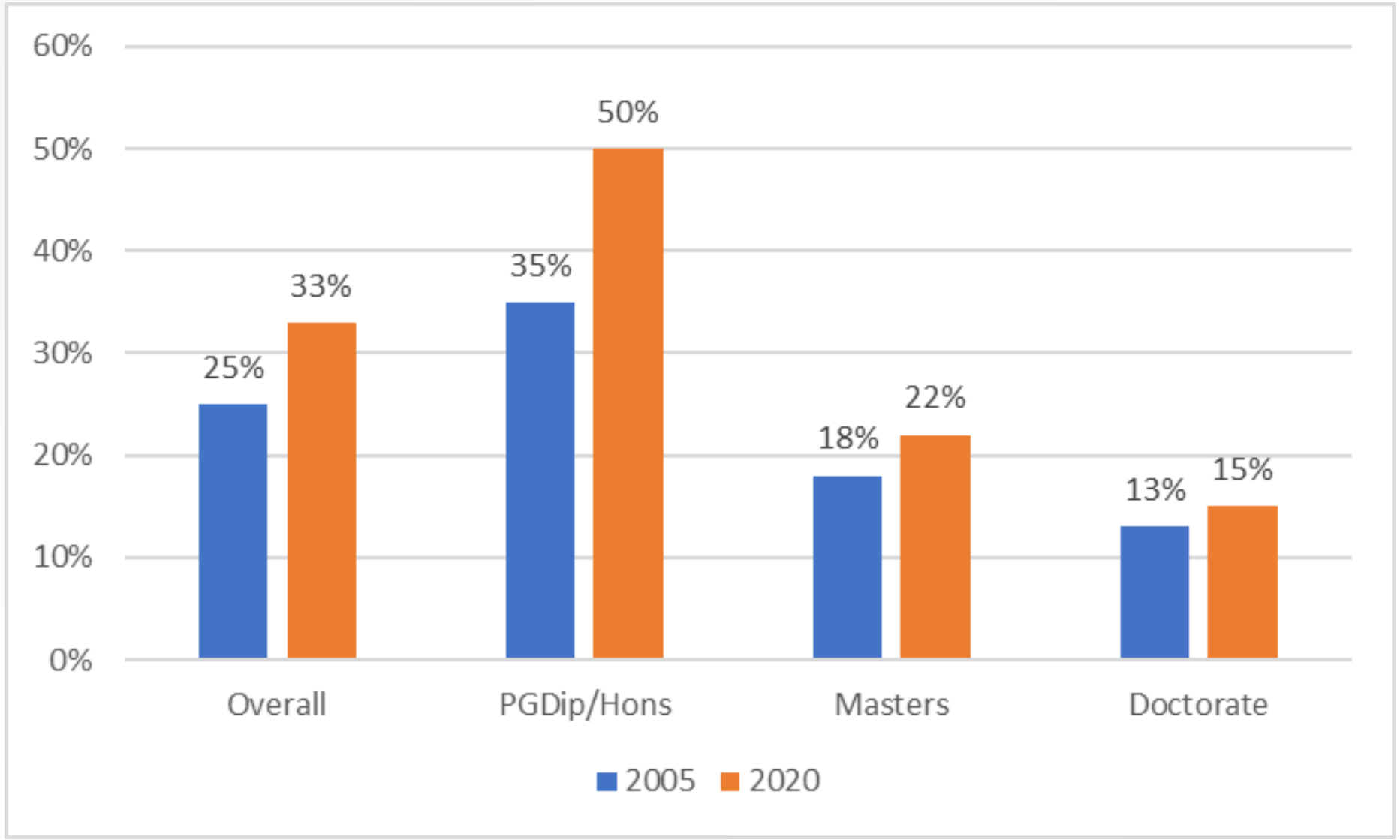
Postgraduate Graduation Rates: 2005 - 2020



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PG Throughput and Dropout Rates- Honours and coursework Masters: 2016 FTEN Cohort

Honours	2016	2017	2018	2019	2020	2021
Graduated	61%	77%	82%	83%	83%	84%
Dropped out	13%	15%	15%	16%	16%	16%

C/w Masters	2016	2017	2018	2019	2020	2021
Graduated	8%	28%	46%	55%	61%	64%
Dropped out	16%	24%	28%	31%	31%	36%

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PG Throughput and Dropout Rates - Research Masters and Doctorate: 2015 FTEN Cohort

Research Masters	2015	2016	2017	2018	2019	2020
Graduated	7%	24%	41%	51%	57%	59%
Dropped out	19%	28%	32%	35%	37%	41%

Doctorate	2015	2016	2017	2018	2019	2020
Graduated	13%	27%	41%	53%	62%	67%
Dropped out	10%	15%	18%	20%	22%	33%

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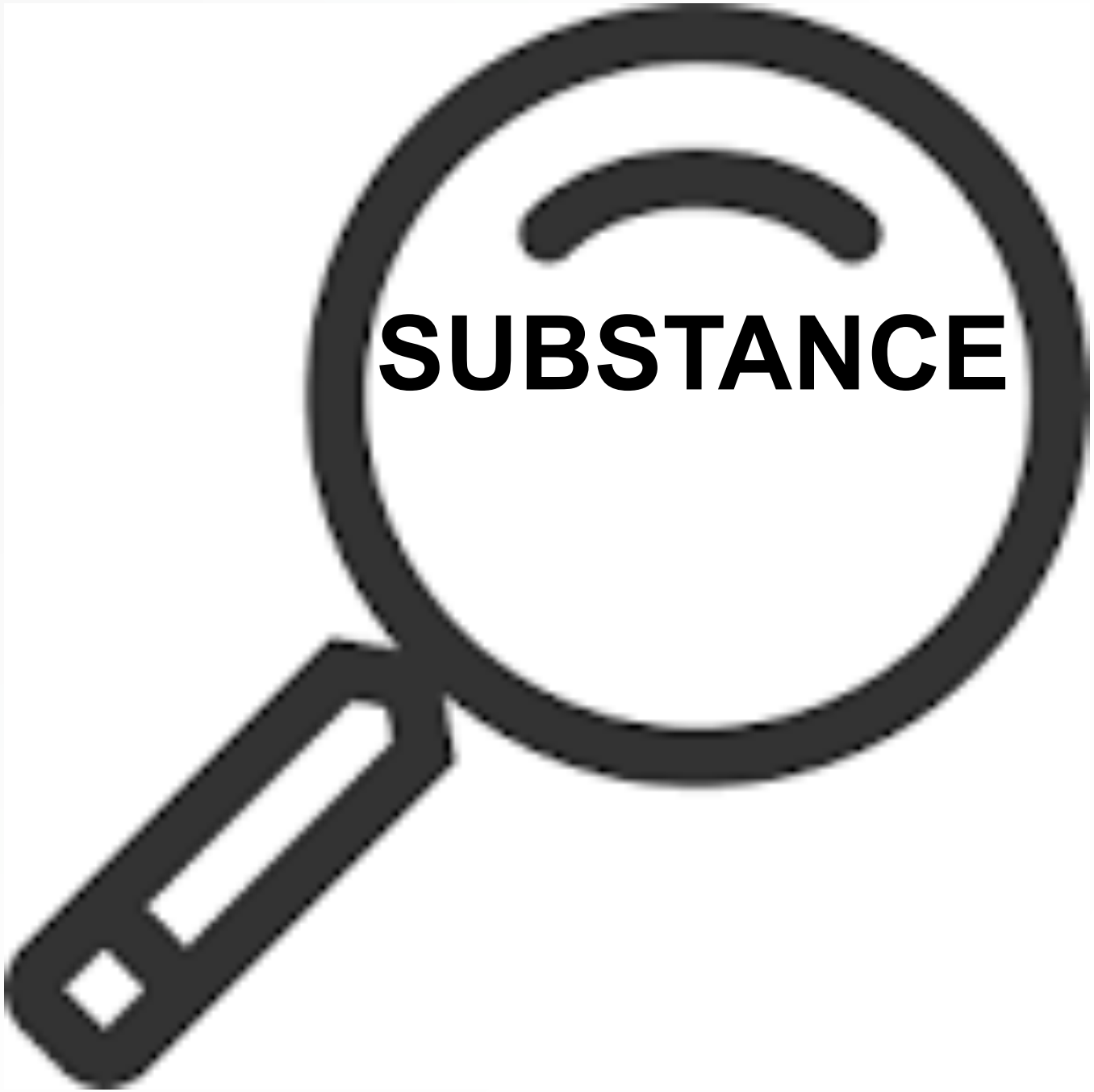
SUBSTANCE

Funding-related challenges

- A decrease in the number of available NRF bursaries.
- Funding needs vary and are more than registration fees and include the need to cover fieldwork costs, access to technology, journal page fees where publication is required, thesis editing costs, financial penalties (in some cases) incurred for extending studies beyond the regulation time and living expenses.
- Many doctoral students take up part-time employment, or study while being fully employed, in order to meet their study and living expenses. This extends their study period or results in non-completion.
- At institutional level, extended study times result in increased supervisory loads and it compromises capacity to enroll new doctoral students.

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Supervision challenges

- The availability of sufficient, appropriately qualified supervisors is a challenge in many institutions:
  - ➢ Overload on available supervisors.
  - ➢ Staff members who are doctoral students supervising other doctoral students.
  - ➢ Use of inexperienced supervisors.
  - ➢ Use of external supervisors not fully embedded in the ethos of the institution and not adequately monitored.

  = poor quality of supervision, to the detriment of the students, and sometimes delayed completion, or even non-completion of the doctoral studies.

- Over-reliance on the one-on-one supervision model.

A recent 2023 CHE *Briefly Speaking* publication:
Models of postgraduate supervision and the need for a research-rich culture in schools or centres of postgraduate studies.

Preparedness of students for doctoral studies

- Academics at several institutions stated that many of the students who are admitted to doctoral studies are ill-prepared, with inadequate foundational skills, whether it be in research methodology, academic writing, or capacity to articulate and defend research ideas.

- Notwithstanding the fact that a master's degree is a prerequisite for admission to doctoral studies, and in some cases an above average score at the master's degree level is a requirement for admission.

- Consequences:
  - Poor quality work.
  - Over-reliance on supervisors' assistance.
  - Longer completion time and/or higher dropout rates.
  - Increased costs to both students and institutions.
  - Negative effect on research initiatives and institutional research programmes.

Lack of programmes and/or facilities to support doctoral students

- Doctoral students need to be supported to develop and ultimately achieve all the graduate attributes defined in the Standard.

- Provision of relevant support facilities or services is necessary, such as:
  Counselling and administrative support, assistance with high-level writing skills, conference presentation, journal publication, thesis construction, and other demanding intellectual activities expected of a doctoral student, such as research planning and management.

- The review found that availability of, and access to these services is highly variable across the sector.

- The review also found a general lack of knowledge and understanding of the Standard and the attributes associated with it, indicators of progress towards its achievement and monitoring of progress over time – implication is that students graduate, but no certainty that the attributes have been achieved?

Slow and limited uptake of the 'professional doctorate variant'

- Professional' variant of the doctorate is awarded for a combination of research output linked to high-level (NQF level 10) coursework and, in some fields of study, work-integrated learning (WIL).

- Globally prevalence of this form of the doctorate is growing, but uptake very limited in SA. Just 2 on offer with a 3rd in the pipeline.

- Possibly a range of reasons which could include:
  - ✓ an unreflective adherence to a 'traditional' thesis-based model;
  - ✓ lack of supervisory capacity familiar with a coursework doctoral component; and
  - ✓ cost implications (not catered for in existing funding models) for design and delivery of high-level coursework modelled on the specific research areas of doctoral students.

- A lost opportunity in terms of:
  - ✓ institutional, programme and qualification differentiation?
  - ✓ a broader spectrum of research applied to specific contextual challenges?
  - ✓ Development of high-level research capacity for applied research contexts?

Inappropriate use of qualification designators and qualifiers

- In some cases, it is difficult to discern differences (if any) between qualifications that have different designators and/or qualifiers. An example cited is the case of a Doctor of Engineering (D Eng) and a Doctor of Philosophy in Engineering [PhD (Eng)] awarded by the same institution and faculty delivered and assessed in largely the same way.

- Institutions use the HEQSF provision for several designators and a maximum of one qualifier for doctoral qualifications and adopt designators and qualifiers that lead to a proliferation of doctoral qualifications with serious implications for the Programme and Qualification Mixes (PQMs) of public universities.

Institutional isomorphism and homogenisation of higher education

- Minimal differences in the nature and orientation of the doctoral qualifications offered by institutions across the sector - inimical to the vision of a differentiated higher education sector.

- Encourages unhealthy competition among institutions at the expense of complementarity, collaboration and cooperation.

- Doctoral education less responsive to the diverse needs of society – some areas over-served, some areas underserved.

- A need for more individualized institutional approaches of focusing research in contextually prioritised niche areas, developing transformational potential and solutions that are aligned with the vision and mission of an institution, taking into account its strategic direction in respect of local, national, regional and global parameters - the notion of fitness of purpose and fitness for purpose.

Recommendations for the way forward?

Some NPHE/NDP targets related to PG education: Where are we?

NDP Target : Increase the proportion of postgraduate-to-total students to 25%.

Current: Stable at about 14% for the last decade.

NDP Target : 5000 Doctoral graduates per annum

Current: 3 552 doctoral graduates in 2020

NDP Target : Increase the proportion of academics who hold doctoral degrees to 75%.

Current: in 2021 only 42.7% of the university academic staff held PhD degrees

NDP Target : increase the number of African and women postgraduates, especially PhDs,
Current: Steady growth in participation by woman and African students.

NPHE Target: Shift enrolments between the humanities, business and commerce and science, engineering and technology from the current ratio of 49%: 26%: 25% to 40%: 30%: 30% respectively.

PG Current: 36%: 28%; 36%

NDP Target : Create a learning and research environment that is welcoming to all.

Current: A mixed picture portrayed through the Doctoral review?

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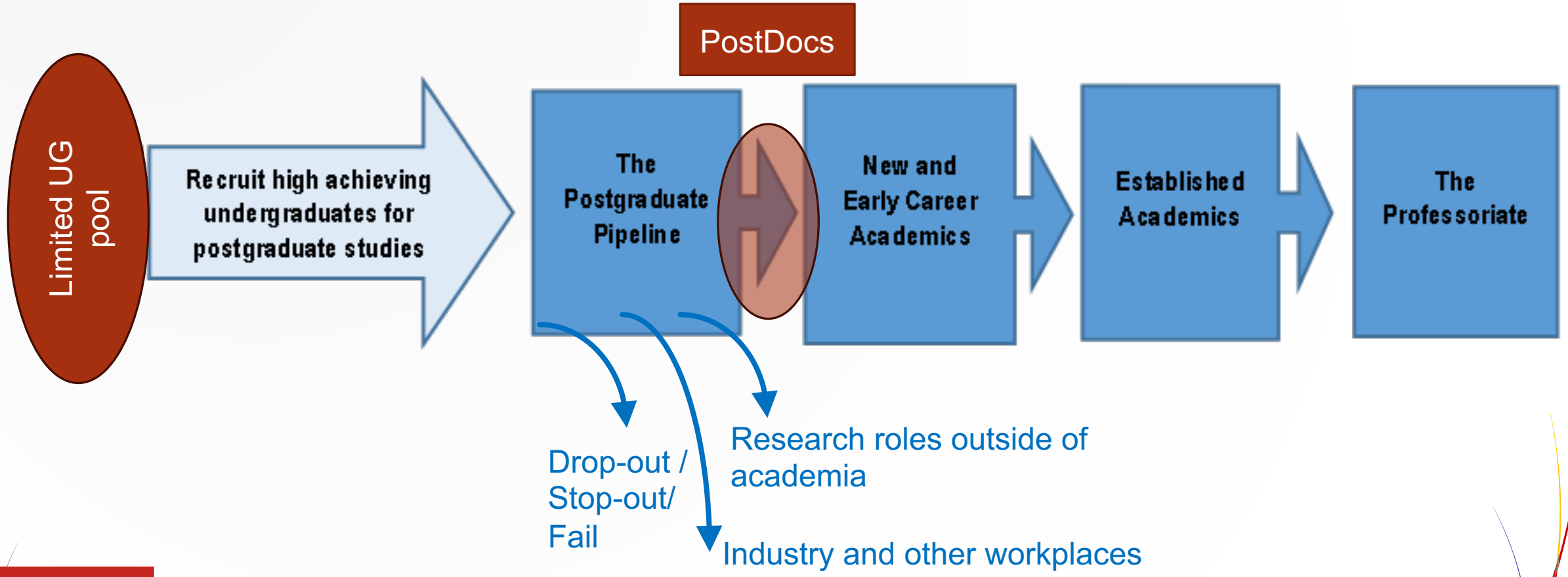
A point of departure: Postgraduate education cannot be viewed in isolation to the full academic pathway



Some possibilities for the way forward – doctoral review report

- Establish and fund a comprehensive national programme for doctoral education, with a greater degree of coordinated academic support, mentorship and financial support for doctoral students, including bursary funding – and pull all the existing, somewhat disparate initiatives under this umbrella.

- Rather than leave this to individual institutions, establish an adequately funded nationally coordinated programme for the development of postgraduate supervision capacity - positioned alongside, and complementing the national doctoral programme above. Part of this could be the consideration of alternative postgraduate supervision models.

- Increase awareness, understanding and uptake into doctoral programmes of the graduate attributes that should be attained through doctoral studies, including how these can be reliably assessed.

- Support institutions to establish Postgraduate Centres dedicated to supporting the academic and intellectual development of postgraduate students – hubs for postgraduate student support.

Possibilities for the way forward – doctoral review report (cont.)

- Further research to investigate the reasons why there is a slow and limited uptake of the professional doctorate qualification.
- Convene a national dialogue of doctoral qualifications naming conventions, particularly the use of designators and qualifiers – agree on a streamlined naming convention.
- Follow the Academy of Sciences of South Africa (ASSAf) recommendation in 2010 already that institutions should be incentivised to diversify and differentiate their offerings and discourage the adoption of a 'one-size-fits-all' doctoral qualification across the higher education institutional landscape. Obtain a clear picture of the PG PQM, at the level of specialization, as a means to identify what the gaps are, what the levels of duplication are etc in order to better inform enrolment planning.
- Make the principle of differentiation one of the main arguments in support of the new higher education institutional types and the criteria for their recognition, as presented in the Draft Policy for the Recognition of South African Higher Education Institutions, 2022 - Use the policy to encourage institutions to find their unique niche(s) for their doctoral qualifications, guided by their institutional visions and missions as well as their institutional typologies and geographical locations.

Possibilities for the way forward – PG Size and Shape report

- Undergraduate curriculum reform and innovation to expose students to research and the development of research skills.
- Identifying talented undergraduate students and providing them with funding, mentorship and other opportunities, which exposes them to the nature of academic work and opportunities to pursue research and academic careers.
- Providing career guidance in schools and academic advising in universities to enable students to make informed choices regarding fields of study and career paths based on their abilities and aptitudes.
- Initiating a sector-wide discussion on the design of the doctorate, in particular, the merits of introducing a structured cohort model to replace the current one-on-one model.

Possibilities for the way forward – PG Size and Shape report

- Addressing the shortcomings in the supervisor-student relationship through developing and implementing policies and procedures to regulate the relationship as proposed in the CHE's Doctoral Degrees National Report (CHE, 2022).
- Funding – increasing the quantum of funds available for bursaries; providing bursary support for four years; and reviewing the criteria and parameters for determining what constitutes a "living scholarship" through a survey of doctoral students and PDFs to assess their living costs.
- Reviewing the NDP doctoral enrolment and graduate targets considering the needs of the labour market.

THANK YOU

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