CoPPGES
Community of Practice for Postgraduate Education and Scholarship

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Creating a research rich environment for postgraduate education

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Chairperson, USAf CoP PGES

Enabling Postgraduate Education Colloquium, Feb 2024

What is a research-rich environment for postgraduates ?

The context for enabling postgraduate education

Institutional context

- ***Research intensive / other***

- The research culture
- The community
- The disciplines

Resources

Expectations

- The student
- The supervisor
- The faculty
- The sponsors
- The public
  - Public awareness, information and trust
  - Transparency and openness to scrutiny

Creating new knowledge

Academic excellence

Impact

Contribution to society

Transdisciplinarity

Research integrity

Collaboration

Internationalisation

Technology

Future of work

Preparing global citizens

The research environment for postgraduates

The national context for postgraduate / doctoral training and supervision

Sector-wide approaches

- **Doctoral education as a national priority**, related to national aspirations to move into the 21st century knowledge and innovation era
- **The pathway** to doctoral enrolment

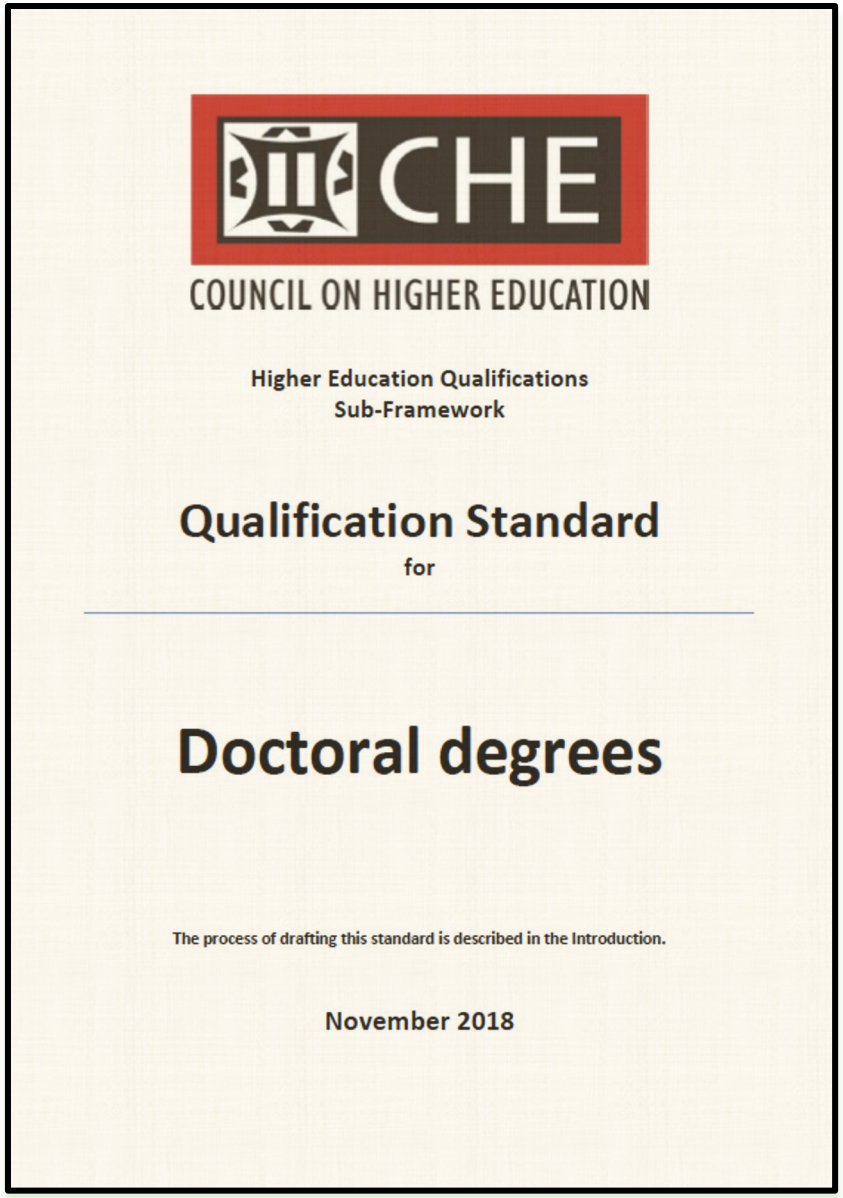
Aspects of the ecosystem

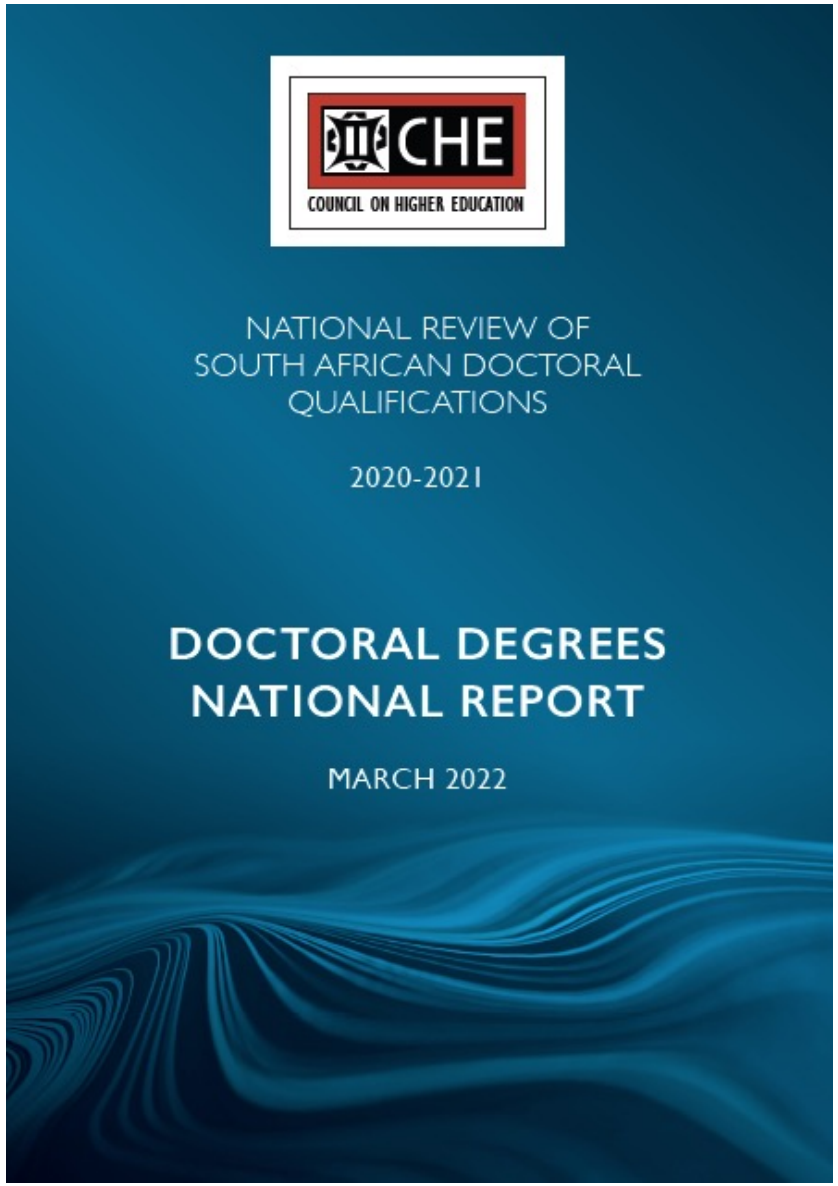
- ASSAf PhD survey
- Emerging Scholars study
- Internationalisation policy
- **CHE Doctoral Degrees Review** – Standard and quality assurance exercise.

DHET Staffing SA Universities Framework – identified issues relevant to increasing the number of doctoral graduates (to address an aging professoriate)

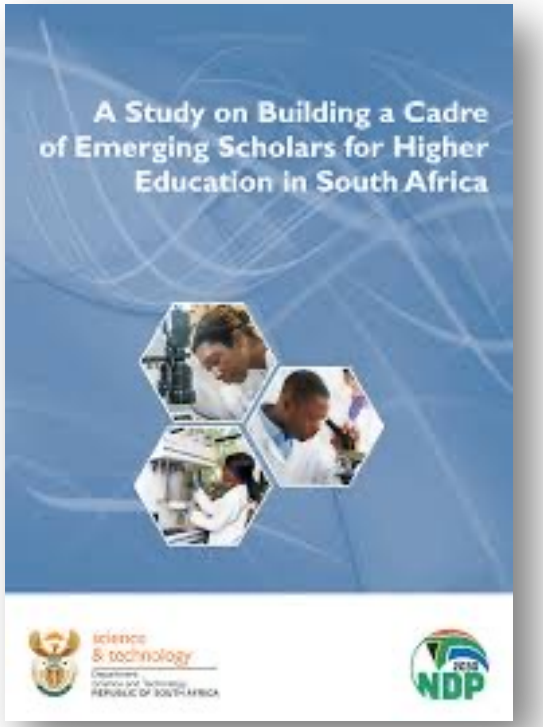
- Inequality of demographic representation among existing staff
- Unequal and/or unfavourable staff:student ratios
- *Low throughput rates*
- *Qualifications and expertise of existing staff*
- A growing but still inadequate postgraduate pipeline.

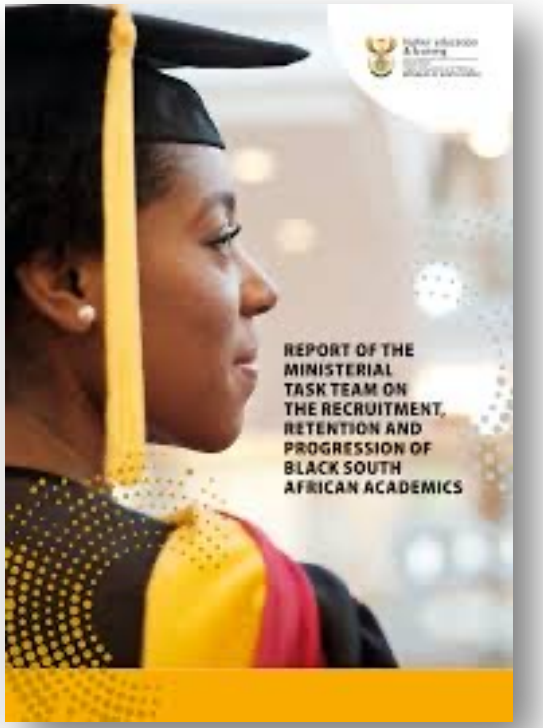
CHE Doctoral Degrees Review





Background - AECRS





- **'Implementing the Outcomes of a Study on Building a Cadre of Emerging Scholars for Higher Education in South Africa' project**

  - report recommendations led to

- **Advancing Early Career Researchers And Scholars (AECRS) Programme** established by **USAf** in 2020 to implement recommendations

- The AECRS programme has introduced four interventions - to be completed during 2024/5

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Measures of postgraduate success

The national context for postgraduate education

Research-intensive universities -

Indicators of research intensity

- Proportion of postgraduates: total number of students
- Number of PhD graduates per year
- Number of staff with PhDs
- Academic reputation in the international rankings

Postgraduate access and success

Indicators of success

- Graduation rate - the % of enrolled students completing in recommended time
- Completion time - the time it takes to complete the degree

We also need to ask -

- ***Quality ??***
- ***Employability ??***
- ***The in-depth learning experience ??***

The purpose of a doctoral degree

The purpose of studies towards the Doctoral degree is

- *to develop the highest level of systematic understanding, and stewardship, of a field of study through* ***an original, innovative contribution that advances the frontiers of knowledge***.
- advance the frontiers of professional practice or/and creative activity
- mastery of appropriate research methods and skills, and pursuit of knowledge, that characterise the disciplinary, professional or inter-disciplinary discourse
- demonstration of the ability to engage in an extended course of research, showing thematic and conceptual coherence.
- *The defining characteristic of this qualification is that* ***the candidate is required to demonstrate high level research capability*** *and* ***to make a significant and original academic contribution at the frontiers of a discipline or field***

* CHE Standard for Doctoral Degrees

What is considered in assessing quality in the Doctoral degree:

The quality of:

- the **candidate** at entry level
- the **doctoral programme** (including standards for acceptance of the research proposal and progress monitoring)
- the **supervisor** (qualifications and experience), and the supervisory process
- the **doctoral graduate at exit level** (including graduate attributes, employability)
- the **thesis** (quality of examiners and their reports)
- in the case of professional doctorates, assessment of **coursework** components
- any **outputs** for the PhD (eg., journal articles)

- *Do we ask the candidates…?*

Research environments in universities…

Research intensive:

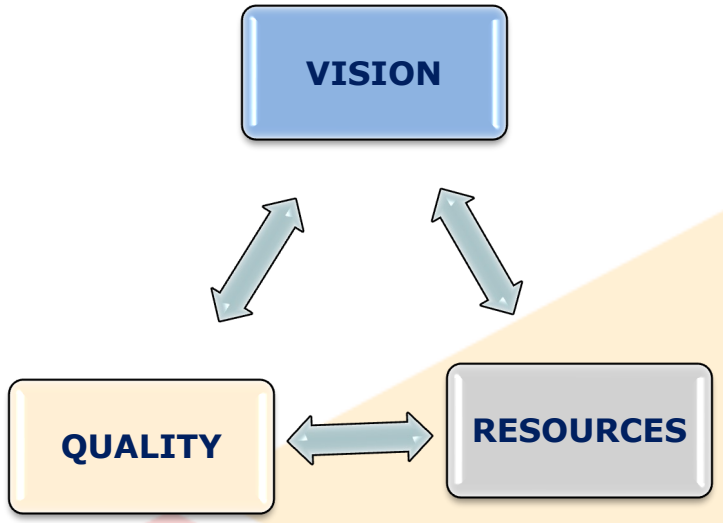
- A strong, recognisable University research culture
- A University-wide academic and postgraduate research community
- Research that is creative and innovative, contributing to diversity and sustainability

Excellence:

- High impact, game-changing research
- International recognition
- Institutional reputation
- Leading scholars, leading institutes
- Most talented students
- Attracting donor funding
- ……

How to develop research intensity?

- Ambition
- Research strengths
- Academic community
- Resources
- Facilities
- Partners
- …



Context from the students' point of view

Context:

- Diversity, preparedness, background of students
- Greater supervision requirements
- More taught components and integrated programmes
- Part time study (60% in SA)
- Preparation for work other than academic careers

Requirements

- Study independently
- Plan and conduct the research project
- Communicate the research results
- …

Quality is an issue frequently raised but rarely addressed directly

The public sees reports of fake degrees, and institutions see an increasing number of theses returned for revision and further examination

What postgrads need to learn to do:

- **Study independently**
- **Plan and conduct a research project**
- **Communicate the research results**
  - Thesis
  - Research papers
  - Presentations

Plan a career path

Seek out mentorship – establish a ‘brains trust’

Become known in the international network

Establish and maintain a publication record

- Start early
- Keep the pipeline going

Learn to write – writing is a craft

- It is the essence of the knowledge society and the core of academic practice

Learn from the literature

Be part of a team of collaborators

- Work together
- Dream up ideas together
- Write together

Challenges in postgraduate education

- Completion times
- Graduation rates
- Funding

- Supervision capacity
- Preparedness of students
- Student issues:
  - Poor planning and management
  - Methodological problems
  - Writing up
  - Isolation
  - Personal problems

- ***Supervisory relationships - How do we manage?***
- ***Processes and progress - How do we monitor?***

Completion time -

An efficiency measure

- Student success – time taken to complete the degree and graduate
- DHET Subsidy income
- Use of supervisory capacity

Recommended completion times:

- Honours 1 year
- Masters 2 years
- Doctoral 3 – 4 years

Why some postgraduate students do not complete

- Survey on why some postgraduate students do not complete
  - (UP) and also Doctoral Degrees Review reports

- Reasons contributing to not completing:
  - Supervision (time, attention, changes)
  - Funding (bursaries and research costs)
  - Unpreparedness (need for training or research)

  - Accommodation close to campus
  - Employment prospects
  - Workload and/or expectations
  - Administrative support
  - Personal issues
  - …

What do postgraduate students need?

Training and supervision | Networking | Mentoring

Supervision

- Identified needs - **improved supervisor training and mentorship for academics**.
- Insufficient **capacity for training of supervisors**, and **limited internal capacity to supervise** postgraduate research-based programmes.
- Concerns about the **quality of the supervision**, and about **stress** experienced by supervisors and postgraduate students.
- A need for **development of institutional capacity** as opposed to reliance on other collaborating or supporting institutions

Mentorship

- There is **a need for experienced mentors** (who can be from outside of the institution) for supervisors and students
- with expertise in specific fields as well as for general guidance.
- There may be issues regarding institutional culture and power dynamics, in internal mentorship programmes.
- A shortage of black South African mentors

Networking

- **To enable collaboration** and **to support academic development**

Postgraduate supervision capacity

Adequate, high quality supervisory capacity is a draw-card for prospective students

Increased enrollment of postgraduate students requires an increase in the amount of supervision required

- **Increasing the number of supervisors available**
  - nGAP and emerging academics
  - Early Career Researcher Programme
  - Staff with doctorates

- **“Smarter” ways of providing supervision**
  - cohort supervision
  - use of online platforms, international collaborations

- **The supervisory workload of academic staff members needs to be closely monitored and managed**.

Enabling postgraduate education – approaches for student success

A conducive academic environment

- Address completion times – scope and expectations
- Strengthen supervisory capacity
  - → staff with doctoral degrees
  - → supervision skills training, focus on good supervision practice
  - → monitoring system

Plan for effective recruitment

- → link into the University's areas of research excellence
- → support student choices

Recognise postgraduates as emerging scholars

- → part of the academic community of scholars
- → position within the research activity of the University and linked to research strengths
- → fostering intellectual development

Interventions to support postgraduate student success

Taking a student-centred approach, what is required:

- **Building the capabilities that a postgraduate needs**
  - independent learning, critical thinking
  - research planning and management
  - academic writing
  - Inter and transdisciplinary approaches

- **Providing comprehensive, flexible, student-centred support**
  - Informed study choices
  - development of the necessary research skills
  - ensuring student progress through critical milestones
  - Inclusive environment and atmosphere

What else do postgraduates need?

Academic support programmes

- **Orientation programme:**
  postgraduate life cycle, milestones, processes, regulations, expectations…
- **2. Support activities offered throughout the year**
- **Programme of seminars, workshops, tutorials, training**
- **Consultation**
- **Counseling** – help with problems as they arise (and before they can't be fixed)

Advisory help

- **Direction** with respect to access to departments and supervisors
- Advice and **assistance** in accessing funding
- **Training on academic issues**
  - eg. academic practice, ethics, intellectual property
  - Academic writing skills - broadly
- Facilitation of inter-disciplinary interactions
- Induction seminars and orientation

Facilities to promote success

- **Online research preparation** for early stages of postgraduate study
- **Dedicated postgraduate support centres** (GSH, Library services, Faculties)
- **Graduate research monitoring**
- WiFi access, computing, learning devices
- Research facilities
- Language training
- Disciplinary issues
- Assistance with housing
- Graduate placement

Internationalisation opportunities for postgraduates

- **Mobility and exchange** for doctoral / postgraduate students
- **Summer schools and workshops –** aligned with conferences and study programmes
- Joint supervision and joint programmes

- Access to training, development and supporting infrastructure
- **Access to physical infrastructure and international research facilities**
- **Access to data**

- **Sharing expertise and experiences** on the research support side – researcher development, research management
- ***Developing Global citizens***

Postgraduate centres…

Some one needs to wake up every morning and worry about our postgraduates…

A postgraduate centre can add value through:

- wide cross-faculty interdisciplinary interaction
- broad external outreach
- heightened profile and reputation

- Monitor and improve quality of postgraduate training and supervision
- Improve throughput rates through effective monitoring and guidance
- Enrich and improve the experience of postgraduate training at UP
- Coordinate and smooth administrative processes
- Increase the size of the postgraduate cohort through more effective recruitment

Funding Funding Funding…

- **National (NRF) funding**
  - budget cuts
  - Focus on financially needy
  - Increased bursary levels, fewer bursaries

- **Mobility and exchange can be costly** – mutual/reciprocal approaches will help
- Co-supervision (and joint programmes) need developed relationships and require time, resources

- **Framing opportunities to meet strategic priorities of funders** can leverage resources

*** CoP PGES Working Group on postgraduate funding**

University Bursary plans …

- Increase levels of **Awards for Honours** students, to address the pipeline for enrolments into Masters and doctoral studies

- Increase **Masters and doctoral bursaries**
- Differentiate M(research) and M(c/w) and prioritise?

Use available funding in **priority areas**

Some specific needs and opportunities

Universities around the world face 'a lost generation of researchers' unless careful thought is given now to supporting early career academics through the storm created by the COVID-19 pandemic "

(S. Baker, THE, June 2020)

- We are still working online for much of the time…

- Three areas of support that may be neglected - **mentoring, ethics training,** and **science communication.**
- New ways of addressing them, using post-pandemic approaches are needed

- Such programmes need to be effective in ensuring that **students develop the depth of understanding that will enable them to conduct their studies and careers with integrity.**

Mentorship

"Find a mentor who has a title similar to the one you would like to have one day"

Mentorship:

- Support through interaction with experienced mentors.
- interactions between individual mentor/mentee or mentor/mentees through informal discussion
- practical advice and guidance, based on experience, enabling mentees to achieve their objectives more rapidly
- assist students in **gaining confidence** by being available to offer **encouragement and emotional support** as required.

Students:

- - Different reality, new work
- Isolation and anxiety
- Future roles
- Making progress
- Trust in tough times

- **Mentors:**

- Guidance and wisdom
- Stability
- Experience
- A listening ear
- Can be online

What is the difference between mentoring and supervising?

- the Supervisor is a specialist in the relevant field and is close to the research
- the Mentor may be in a different field and can offer broad guidance and counsel

Ethics and research integrity

The purpose of ethics training – more than ethics approvals :

- to ensure that students become aware of the **need for ethical practices in research and science broadly**
- that they **become conversant with the necessary practical aspects of ethical research**.
- Include **broad and philosophical aspects of Ethics**, and
- Understand **what is research integrity?**
- **Information sessions** to ensure that trainees were informed of **requirements regarding:**
  - ethics approval prior to research project initiation; research data management;
  - confidentiality of data; and
  - national and international regulations.

Science communication

Science communication training programmes

- To enable students to **learn to disseminate and explain their science**
- **Complex concepts and information translated and made accessible** to the **broader public, including policymakers**, who can use it for evidence-based decision-making.
- Learn to address the problems of **fake news and misinformation,** and **assist the general public to make rational decisions** in their personal lives.
- M**ake evidence-based information available** to increase the understanding of **different communities**

Research data management

- **Managing research data to advantage**
  - Smart repositories
  - Use of AIs
  - Enabling discovery and accelerating new knowledge
  - Ensuring compliance
  - Optimising use of data
  - Linkage to partners
  - **Ensuring visibility, making our research discoverable**

- **Research integrity**
  - Public expectation
  - Public trust
  - Ethical use of data
  - Digital trust
  - Cybersecurity

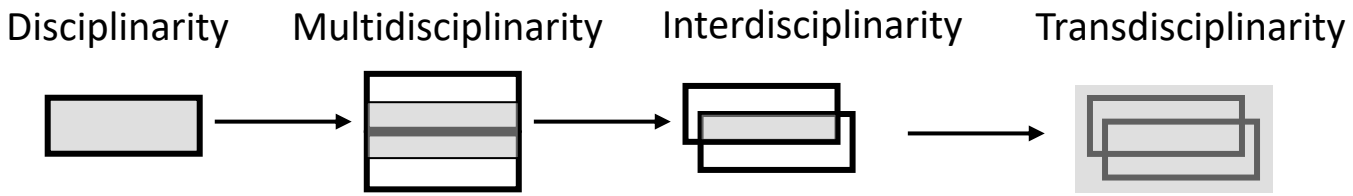
And also… Transdisciplinary research

- A collaborative journey of exploration and discovery about real and relevant issues, bringing together academic and non-academic partners, from different disciplines, integrating diverse perspectives, to achieve meaningful outcomes

  - *has changed how we collaborate*
  - *can change where we publish*
  - *will draw more citations*
  - *leads to a broader scope of influence – publishing, policy…*
  - *should change how we educate*

How should we be training students?

- Transportable skills and methodologies
- Communication across boundaries
- Embracing complexity
- Dealing uncomfortable ideas
- Valuing all perspectives
- Addressing societal issues



Artificial intelligence - Technologies that will change research, and can change lives

New AIs

- can work through very large data sets
- find trends and patterns in ways which were not possible before

New LLMs are fast and can assist with research

- through information processing
- manipulating text, summarising
- changing style
- making corrections to grammar
- searching for information.

- Finding relevant literature, conducting literature reviews,
- Generating research questions
- Data analysis
- Writing
- Generating new hypotheses, and providing analysis of content in papers

The information space

1. There will be self regulating oversight of AI and machine learning designers
2. World news and video content will be authenticated as real by blockchain, countering fake news
3. Individual activities will be tracked digitally by an 'Internet of Behaviour' to influence benefit and service eligibility

Gartner: 10 Ways Technology Will Change What It Means to Be Human

www.asi-org.net

The concerns about AIs, and what is needed

Postgrad students must learn to navigate a fine line

- leveraging AI tools for efficiency, and
- maintaining the authenticity of their intellectual contributions.

Practically:

Our students still need to learn to write

- To construct reasoning and arguments
- To understand that cheating and plagiarism are not acceptable.

AIs cannot replace teachers, or supervisors, or mentors, and the need to test truth and logic will need to remain human activities

We need:

- New **guidelines** for publishing in journals and theses, where acknowledgement of the assistance of AIs is included
- To clarify and **define what constitutes original new knowledge** and innovation
- **Ethical frameworks** that take into account respect for research and intellectual integrity
- **Plagiarism detection systems**, adapted to account for AI-generated content - will need to become more sophisticated
- **Protocols established to verify the authenticity** of AI-generated data

Developing sector capacity

- **A forum focussing on postgraduate education -**
  - **a community of scholarship and practice** to support supervisors and to sustain the sector in terms of postgraduate supervision quality and expertise.

- Sharing of skills and practices:
  - **interaction between peers**
  - for seminars and conferences focussing on all aspects of postgraduate education

- Should also address:
  - **holistic approaches** to academic capacity development related to postgraduate education
  - **Advocating** for matters relating to postgraduate education
  - **Coordinated national activities**
    - Conferences, colloquia
    - Shared training resources

The USAf Community of Practice for Postgraduate Education and Scholarship

CoPPGES
Community of Practice for Postgraduate Education and Scholarship

- A forum for sharing of best practice
- A strategic think tank
- A lobby to advocate for matters relating to postgraduate education
- Coordination of national activities focussing on postgraduate training and capacity development
- A national platform for discussion, interaction and recommendations
- Collation of information from participating universities
- Facilitation of cooperation and collaboration.

ADVANCING ACADEMICS

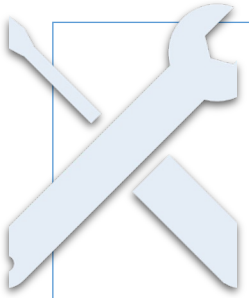
Advancing Early Career Researchers and Scholars

A project to develop an effective system for **monitoring** the impact of academic support interventions

A nationally coordinated **mentorship resource platform**

Thuso Connect

A **national strategy group** focussing on postgraduate education = ***CoP PGES***



An academic capacity development resource database – a **'national toolbox'**

Thuso Resources

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https://thusoconnect.mywisdomshare.com/

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Join us!

Contribute to the success of SA's early career academics and scholars.

Our future in higher education

THANK YOU

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