Appendix B
Ideas for the measurement of capability domains and functionings

We take account of both functionings (achievements) and capabilities (freedoms to achieve functionings) for a richer informational base which enables attention to capability-functionings gaps or dislocations.

Domain: *Epistemic contribution*. Equality in gaining degree knowledge, being able to reason, understand, apply, share, discuss and examine knowledge critically, alone and with others.

**Key functioning (‘learning outcome’):** Being an epistemic contributor

**Supporting functionings:**
A. Attains a threshold of academic knowledge, reasoning (argumentation) and understanding and applying of knowledge through access to higher education teaching and learning;
B. contributes and receives knowledge materials (informational and interpretive) to and from the common pool of interpretive materials; shares/communicates this knowledge with others and is taken seriously in the process;
C. thinks critically, taking diverse viewpoints into consideration;
D. is critically aware of curriculum issues, including but not limited to decolonisation; and
E. is reasonably confident in speaking, reading and writing in English.

**Inequalities to be aware of:** Of significance in this domain are process inequalities (teaching and learning) which relate to who is included in and participates effectively in teaching and learning processes. There are also horizontal inequalities (culture) which are linked to who the student is, and who participates in various pedagogical activities with confidence. Vertical inequalities in this domain could include differences in attainment between groups, by race, ethnicity, gender, social class, disability, nationality as well as family background.

**University education:** The capability is at the core of university education. It is important to know whether university education fostered this capability by encouraging participation in contributing to epistemic materials inside classrooms, in particular,
with students also self-reporting on how they experienced the process of enhancing epistemic contributions. The capability also relates to acquiring a good understanding of (inter)disciplinary knowledge; an appreciation of how the subject matter relates to the social and/or natural world; and a grasp of what it means to be critical and to argue in relation to the subject matter.

**Academic department:** Academic departments could collect evidence about professional development workshops offered in the faculty or centrally: counting who attended; evaluating how effective they were based on self-reporting and more informal discussion; and, ascertaining how widespread these are in the department based on self-reporting. Each department could hold an annual focus group discussion with lecturers about teaching and learning practices in the department and what needs to change. Students could be asked clusters of questions which relate to the supporting functionings A–E of the capability, with indicators such as: I am contributing to knowledge in my subject; I can make arguments based on what I have learned; I contribute to discussions in class or tutorials; I am open-minded about different points of view and able to arrive at my own perspective; I feel able to contribute to decolonisation debates on my curriculum.

Alternatively, the relevant capability questions on the Miratho survey would provide some basic information (survey questions on Academic Progress, and Knowledge and Learning). Such information would enable the department and university to consider whether specific groups of students have more and better opportunities to develop as epistemic contributors.

**University:** University managers could collect data on the resources and leadership they have in place to support student and lecturer development in relation to this capability. For example: an aggregate of 60% or more in degree outcome; number of distinctions achieved in the degree; number of modules failed; time taken to completion; and, number progressing to honours – all of this data by race, gender, school quintile, NSFAS funding recipient, declared disability.

Institutions would also need to deliberate across relevant forums, drawing on the evidence sources above, about which students are provided with opportunities to develop the capability and achieve the functioning, where these opportunities are provided, and what the university enablers and constraints are, with a view to implementing change beyond tickboxes and checklists. Universities could also draw on relevant questions in their own Student Engagement Surveys or data from their relevant existing teaching and learning centre. Finally, an annual focus group, one in each faculty, could yield rich qualitative data.

**Domain: Practical reason.** Equality in reasoning about, reflecting on, and forming a view of a good life and in planning purposively to work towards this.

**Key functioning:** Planning one’s (good) life

**Supporting functionings:**

A. Forms ideas about living a good life that are valued and informed by critical reflection;
B. imagines alternative good lives that are valued and informed;
C. aspires for a good life that is valued and informed;
D. chooses and plans for a valued and informed good life; and
E. makes decisions and pursues a plan of action to achieve a valued and informed good life.

Inequalities to be aware of: It is important to gauge whether students are adjusting aspiration downwards in response to deprivation (vertical inequalities). Austin (2016) found that, during ‘austerity’ in the UK, people – especially young people – from low-income households moved away from higher human potential goals towards such ‘subsistence goals’ as material security, which, she argued, is a diminishment of internal capability. In relation to horizontal inequalities, students do not have the same access to and contact with individuals and networks which support planning their futures. University education and the policies and practices of universities can establish and embed processes that tackle such inequalities.

University education: Practical reason depends on both internal development and external material conditions, which indicators should try to capture. Austin (2018: 24) argues that practical reasoning as an ‘activation factor’ deserves special attention in evaluations of well-being and justice. Students who succeed in coming to university have thought of being a student as a component of a good life, especially those for whom this achievement has been against the odds. An important question is whether the experience of university education has retained and strengthened the capability of practical reason by, for example, supporting aspiration, expanding horizons, deepening values or offering practical help to achieve goals – so there should be some ‘process’ indicators.

Practical reasoning is a personal process, experienced subjectively – in Nussbaum’s terms an internal capability – so indicators need to reflect this. For example, students can self-report that they reflect about and plan their lives. As university students, they are in a specific situation: for a few years they need to plan and act to gain a degree and plan for a post-university life that has yet to unfold. All capabilities are dynamic, and people constantly use practical reason to adjust their plans depending on circumstances often out of their control.

Academic department: Practical reason is a capability dependent on educative processes: that is, students should have as many opportunities and as much freedom as possible to reflect on what is a good life (and imagine alternative good lives) and how to achieve it. So, academic departments can deliberate where it is appropriate in the curriculum to offer students such opportunities. Professional development for personal tutors in departments could include signalling how important it is for students to be able to imagine future possibilities for themselves and to be able to understand where opportunities lie and what barriers need to be overcome.

University: To get a broad picture in relation to this domain based on self-reporting, the university might institute a survey (perhaps longitudinal or final year, like the Miratho survey) with a Likert-scale in which clusters of questions would relate to the sub-domains of practical reasoning. For example, for sub-domain 1: I think about what
I would like to do in life; I think about what kind of person I want to be; I think about what matters to me most in life; I have ideas about the reasons for my goals in life. The results of such a survey would allow an institution to gauge whether specific groups of students are systematically more or less able to reason about, reflect on and form a view of a good life and to plan purposively to work towards it.

With regard to process, the university might organise audits of curricula and of other services and extra-curricular opportunities at university, which could lead to reforms and innovations. We did not find that students were accessing careers services, which could play an important role by organising creative opportunities for students to consider their future. For example, the students who had taken part in the Miratho Project told us that annual interviews enhanced their capacity for reflecting on their lives and seeing opportunities and barriers more clearly.

**Domain: Navigation.** Equality in the ability to manoeuvre through university and to adapt to succeed academically.

**Key functioning:** Navigating university culture and systems

**Supporting functionings:**

A. Recognises inequalities at the university and how they affect self and others;
B. understands how the university works both for academic learning and for life at university;
C. possesses critical navigational skills: is resilient, with inner resources; has supportive relationships and cultural strategies to confront obstacles; and, learns from experience;
D. knows where to go for advice for academic and well-being support; and
E. possesses a measure of financial literacy to be able to budget available funds sensibly.

**Inequalities to be aware of:** Navigation as a capability points to the need to be aware of horizontal, vertical and process inequalities. Horizontal and vertical inequalities intersect in this domain to give rise to systems and structures promoting unequal access and participation in higher education. This could be based on differences in attainment between groups – by race, gender, social class, disability and family background. For instance, because low-income students are usually first (in the extended family) to go to university, they are likely to be ‘doubly disadvantaged’ by lacking family members with prior knowledge of university culture and systems, capable of providing hot knowledge in addition to coming from a context where accessing cold knowledge from the internet or universities is limited (Ball & Vincent 1998). Thus, these students lack (high-stakes) information on university culture, how to navigate the application process, and how to participate equally in higher education, limiting their academic success and general well-being. Process inequalities relate to teaching and learning, where students may struggle academically and socially without being familiar with university culture and processes or aware of the different academic support and welfare services offered by universities.

**University education:** As a capability, navigation acknowledges the more common
deficit approach adopted by universities aiming to foster cultural capital in which ‘the locus of control is with the student (albeit influenced by their interactions with staff and other students) to determine their final outcome’ (Naylor & Mifsud 2020: 267). Instead of focusing only on students, there needs to be a shift in responsibility for all university actors to understand the difficulties that some students face in grasping how a university works.

**Academic departments:** Various university departments can, for example, provide professional development support enabling lecturers to effectively teach diverse students and making the curricula accessible and relevant to all students (Naylor & Mifsud 2020). They might also ensure that students know about available support and services.

**University:** Universities can foster this capability by being more inclusive and dismantling structures of inequality. An examination of vertical and process inequalities in this domain would entail asking whether the institutional set-up (culture and systems) reduces barriers to, and supports diverse students' access, participation and academic success. Questions illustrating vertical inequalities would reveal students’ awareness of existing inequalities and how they navigate these. Such questions can be drawn from statements on supporting functionings A, B, C and E of this capability through quantitative or qualitative methods. This includes indicators such as: I understand inequalities and how they affect me; I know how life at the university works; I know how to find my way through university procedures on my own (e.g. financial aid, registration); and I know how to budget my finances and make it work. Questions pertaining to process inequalities would reveal students’ awareness of how they can navigate the system and succeed academically. These can be drawn from statements on supporting functionings B, C and mostly D of this capability through quantitative or qualitative methods. They can include indicators such as: I understand what it takes for me to be academically successful at this university; and I know where to go for academic support and advice.

Relevant questions in the Miratho survey provide information on knowledge and use of services such as the university wellness centre and extra-curricular activities. The survey also provides data on academic progress such as number of distinctions acquired and failed modules. Such information would enable the university to evaluate whether different student groups have equal opportunities to participate and succeed.

**Domain: Narrative.** Equality in telling one’s own higher education story with confidence.

**Key functioning:** Telling one’s higher education story

**Supporting functionings:**

A. Tells their story of access, participation and outcomes in higher education;

B. confidence in telling this story to diverse others in diverse situations; and

C. has this story listened to, heard, recognised and valued in the university and by policymakers.

**Inequalities to be aware of:** Vertical inequalities in this domain would include unjustifiable discrepancies in whose stories are being told, listened to or acknowledged by
universities, across different student groups – by race, ethnicity, gender, social class, dis/ability and nationality. It would be important to know whether university education fostered this capability by encouraging students to self-reflect and talk about their life and university experiences, with students also self-reporting on how they experienced the process of telling their story or listening to the stories of others. This indicates that there may be horizontal inequalities to look out for too, which are brought about by a university culture that limits a sense of belonging and community for disadvantaged students. Horizontal inequalities may also manifest when oral traditions are less recognised as a mode of sharing social or academic knowledge, or when English is culturally dominant in universities, at the expense of building on the range of languages or modes of expression that culturally diverse – in our case black low-income rural and township students – bring with them into the university. Again, most students who took part in the Miratho Project reiterated the personal and social significance of having the opportunity to tell their life and university stories either through the participatory photovoice process, or through the annual life-history interviews.

University education: University teaching and learning processes should enable and enhance students’ linguistic and narrative capital. Doing so would increase possibilities for all students to recognise themselves and to be seen by others as articulate storytellers who are able to use their life and university experiences to construct narratives that contribute to shared pools of knowledge about higher education. Linguistic capital refers to having multiple language and communication skills (Yosso 2005). It includes the intellectual and social skills attained through communication experiences in more than one language and/or style (Yosso 2005). It often entails experience as engaged participants in storytelling traditions that may include listening to and recounting oral histories, parables, stories and proverbs (Yosso 2005).

On the other hand, narrative capital is a more specific form of linguistic capital. It entails having a ‘good’ story to tell, a story that is of value to the teller, and valued by the listener, both because of the content of the story and the way it is told or articulated (Watts 2008). However, both narrative and linguistic capital are rendered meaningless in the absence of narrative capability, or the real opportunities individuals have to tell their stories (Watts 2008). As such, a necessary condition of this narrative capability is the freedom to be listened to (Watts 2008).

Academic departments: Research at departmental level can investigate through quantitative or qualitative methods when, where and how students can have their university story told, listened to, heard, recognised and valued in the university by lecturers (but also by university leaders and policymakers). Questions can be drawn from functionings A and B of this capability. Indicators would include students reporting whether they have safe spaces to talk about their life at university; talk about their struggles and challenges; tell their community about experiences of university or tell their university story with confidence to people from different backgrounds (as asked in the Miratho survey). In relation to functioning C, for example, students can self-report whether they think their story matters in their field of study, whether they believe telling their story is important, or whether they see value in listening to the life stories of other students.
University: As Watts (2008) argues, everyone has a story to tell, but the different lives that inform and frame the stories we tell of ourselves are valued differently. Universities should question whether the stories of different students are valued differently at institutional level. It would also be important to ask whether the university fosters a culture of storytelling and a culture of taking their students seriously when they do recount their university experiences.

Domain: Inclusion and participation. Equality in being respected and participating fully in classrooms and in the wider university.

Key functioning: Being a respected and participating member of the university.

Supporting functionings:
A. Is treated with respect and empathy and treats others with respect and empathy;
B. does not experience discrimination from lecturers or students in the classroom;
C. does not experience discrimination in the wider university;
D. feels socially included in the wider university; and
E. participates in the classroom, the wider university, and community/political activities.

Inequalities to be aware of: In terms of vertical inequalities, not having enough money excludes students in several ways: not gaining access to books and computers; not being able to socialise; not wearing acceptable clothes; and not having sufficient toiletries, etc. To add to exclusions caused by a lack of resources, horizontal inequalities play out: the culture of the university is often alien and alienating to students from low-income, deep rural backgrounds. Our Miratho students told us of the efforts they made to adapt to such an environment, but there was little the universities appeared to be doing to meet students halfway by appreciating their efforts and adapting policies and practices.

University education: Being included and participating relate strongly to the horizontal category of inequalities whereby the culture of universities marginalises students who struggle for a sense of belonging. Opportunities in this domain, then, depend on process equalities.

Academic department: Measuring can take the form of audits of policies and practices which support inclusion and participation (e.g. inclusive, participatory, transformative and affirmatory pedagogies). For example, how many lecturers attend professional development education and training about being inclusive, or to what extent is the academic department engaging with discussion and action about decolonising the curriculum.

University: Clearly, being included and participating also belong to the realm of subjective experience. Measurement, therefore, would include asking students how they feel and what they do either in a survey or in interviews or focus groups. The Miratho questionnaire contains statements pertaining to this domain:
• In relation to ‘Is treated with respect and empathy’, the survey statement is ‘Others treat me with respect’;
• in relation to ‘Does not experience discrimination from lecturers or students in the classroom’, the survey statement is ‘I do not feel overwhelmed by anxiety over academic work’ matched in relation to ‘Does not experience discrimination in the wider university’ and the survey statement ‘I do not feel overwhelmed by anxiety over aspects of my life at university’;
• in relation to ‘Feels socially included in the wider university’, the survey statement reads ‘I fit in, in my university’ and ‘I can communicate with people in at least two African languages’; and,
• in relation to ‘Participates in the classroom, the wider university, community/political activities’, the three survey statements read ‘I belong in my study programme’, ‘I participate as an equal in social activities in my university’, and I have enough money to participate in leisure activities of my choice’ (Survey Q. 7.6).

More statements and questions could be generated in relation to the sub-domains above in surveys, interviews or focus groups. There is some evidence that feeling excluded and unheard affects academic achievement. So there is also statistical data which can inform evaluating this domain, for example, charting by race, gender, disability, rurality, social class ‘throughput’, retention, and the ‘attainment gap’.

**Domain: Ubuntu**. Equality in understanding that a person's well-being is connected to the well-being of other people.

**Key functioning:** Connected to the well-being of others

**Supporting functionings:**

A. Understands that their well-being is connected to the well-being of other people; shows support, care and concern for the well-being of others, and values this; has a larger sense of meaningful purpose beyond own self-interests;

B. has good friendships and is a good friend to others;

C. has mutually trusting relationships with other people;

D. shares resources with other students who do not have these resources, and has others share their resources; and

E. shares information gained at and about university with others, for example, about getting into university (credible knower and teller about university life).

**Inequalities to be aware of:** Process inequalities in the capability for ubuntu would include limitations on the freedom for students to learn how to theorise, explain or challenge dominant ideas about humanity based on indigenous cosmovisions. Process inequalities could also include limitations in students' opportunities to learn how to treat each other and relate to other people based on the principles of ubuntu. Inequalities in this domain could be horizontal in terms of Western worldviews and values dominating the academy at the expense of indigenous values and worldviews. Such inequalities could be identified through qualitative means such as student self-reports.
Vertical inequalities could be identified by looking into the distribution of what Fricker (2007) refers to as epistemic materials, and whether or not there is an unreasonable distribution of epistemic materials that are founded on Western ontologies, at the expense of indigenous ones. For example, a reasonable distribution of epistemic materials related to language would include the development of a rich vocabulary in both English and local languages, or a working knowledge of concepts that are rooted in diverse theories on, for instance, education, power, poverty and inequality. These epistemic materials can be stimulated through conversations, discussions, debates or public or academic engagement with students and lecturers whose ontological, epistemic or moral grounding are informed by alternative (non-Western) cosmovisions.

**University education:** Teaching and learning processes could encourage students to challenge pervasive Western ideas about the human condition, for example, by incorporating indigenous philosophical literature into curricula, or incorporating ideas from indigenous epistemologies into pedagogical practices. For example, in his writing on ubuntu as an architectonic capability, Le Grange (2012) argues that achieving any of the central human capabilities on Nussbaum’s list is not possible without the presence of other beings (both human and non-human). That is, human capabilities such as being able to play, to use one’s senses, to imagine, to think, to reason, to produce works, to have control over one’s environment and to have affiliation, can only be expressed in interdependent relationships with other human beings and the biophysical world (Le Grange 2012). Ubuntu promotes the idea that becoming human and humanness unfold as an ongoing process of reciprocal inextricably linked relationships with wider human and biophysical communities (Le Grange 2012). Western ideas about humanity are often less emphatic about these relationships and centre on upholding humanity through securing individual human rights. Teaching students to engage critically with conflicting ideas about humanity, by allowing them to learn more about indigenous cosmovisions could be a starting point for supporting the capability for ubuntu.

**Academic departments:** Ubuntu expresses the idea that one cannot realise one’s true self by exploiting, deceiving or acting in unjust ways towards others – because our well-being is connected. To support the ubuntu capability, university departments would need to know whether staff and students in their department treat each other with reciprocal care and support. Both staff and students could self-report on this.

**University:** As a worldview, ubuntu is likely to be more prevalent in rural communities (than it is in urban spaces) where mutual care and reciprocal support play pivotal roles in minimising everyday struggles associated with poverty. However, when opportunities exist within universities for students to uphold this worldview (and capability), which encourages the notion that one’s own well-being is connected to the well-being of others, spaces are created for students to treat each other and those around them with care and compassion. This is because understanding humanity in ubuntu terms implies a set of principles or values that guide how one relates to others.

In the Miratho Project, students often talked about wanting to uplift and give back
to their communities. For example, a few students volunteered at their former high schools during university holidays to pass on information and assist low-income youth like themselves with completing application forms for accessing university. The Miratho students did this because they see the betterment of others as a process that in itself betters themselves. An important question for universities, then, would be whether they support the capability for ubuntu, through an ethos of ubuntu at institutional level that filters down to how people (academic and support staff, students, the surrounding community) see and treat each other.

**Domain:** Emotional balance. Equality in achieving emotional balance in higher education experiences and learning.

**Key functioning:** Being emotionally balanced at university

**Supporting functionings:**
- A. Derives enjoyment and pleasure in learning degree subject/s;
- B. is resilient in the face of despondency, and able to overcome obstacles;
- C. talks through worries or problems with friends or at the wellness centre; and
- D. experiences happiness and contentment at university, not fear and worry.

**Inequalities to be aware of:** Process inequalities might manifest in teaching and learning which do not recognise or take account of the potential impact of the affective on achievements, or pay attention to that which students are emotionally vulnerable to with regard to their learning. Horizontal inequalities might manifest where students are emotionally affected by feeling that they do not belong in the university or programme, that they are somehow ‘imposters’, that lecturers or the university do not care for them as human beings. Vertical inequalities might be evident in the absence or poor quality of support services for students struggling with emotions and learning.

**University education:** There is a significant challenge in measuring emotions and emotional balance and a real risk in reducing something so subjective and complex to an indicator or number. Nonetheless, questions such as these could lend themselves to a simple self-report survey to canvass key aspects of emotional balance among students. Our suggestions are tentative and open to improvement. Questions might explore which students find enjoyment in learning their subjects, and which do not; which students say they are able to bounce back in the face of university obstacles and which do not; which students say they are able to talk to someone (a friend, wellness centre representative) about their worries, and which do not; and, whether students say they are satisfied or happy at university.

**Academic department:** Academic departments should discuss the impact of the affective on both learning and teaching.

**University:** Annual focus group discussions facilitated through the SRC or the wellness centre could gauge the nature of the support that diverse students need for emotionally balanced lives at university and how to develop an affectively sound university education and environment. At university level, discussion should take place on the availability and
uptake of a university wellness centre’s services and individual counselling as well as the provision of workshops for lecturers and support service administrators on understanding students’ emotional health and the connections of emotions and learning.

**Domain: Future work/study.** Equality in preparation to find a graduate-level job in the public or private sector, self-employment or further study.

**Key functioning:** Employable/qualified for further study

*Supporting functionings:

A. Is well prepared to find a graduate-level job in the public or private sector, self-employment or further study;

B. has had the opportunity to develop knowledge and skills that are relevant for employment, self-employment or further study; and

C. knows the relevant skills and strategies that are required to apply for jobs or further study.

**Inequalities to be aware of:** Inequalities in this domain are mostly vertical and related to process. They result in differences in employability-related capacities stemming from unequal access and participation of different groups, usually by race, social class and family background. For instance, due to a lack of information on higher education access such as degree requirements, some low-income students end up enrolling for diplomas rather than degrees because of a lack of prerequisite gateway subjects such as maths. This is because of a lack of information on grade 10 subject choice, resulting in the selection of maths literacy rather than maths, a pre-requisite for degrees in STEM-related subjects. This, ultimately, affects students’ employment options, as employers are likely to hire someone with a degree rather than a diploma. In addition, process inequalities in this domain would relate to teaching and learning arrangements, including the type of university and its reputation among employers, as well as degree choice. Employers are more likely to hire graduates from higher-ranked historically advantaged institutions, which are comparatively better resourced and connected, than historically disadvantaged institutions, which are generally under-resourced and have more tenuous links with the labour market.

**University education:** One assumption of the emphasis on graduate skills is that all graduates are more or less at the same level of cognitive development and socio-economic circumstances when they access or exit higher education and therefore in a position to achieve broadly similar skills for employment. However, Walker and Fongwa (2017) refute this in their examination of the various factors influencing employment as an outcome. For example, they identify constraints such as university preparedness, financial and language challenges, academic quality such as laboratory facilities, and exposure to potential employers as some of the factors responsible for different employment outcomes. Hence, university arrangements within and out of the lecture rooms should equally expand students’ opportunities.

**Academic departments:** Departments should enable student access to economic opportunities by providing quality teaching and learning, encouraging and support-
ing extra-curricular participation, and fostering links with related employers and other universities. For specific subjects, they can assist students in getting placements and provide support in the form of CV writing and interview preparation.

**University:** While external conditions ‘influence but do not wholly determine opportunities and outcomes for individuals and groups of students’ (Walker & Fongwa 2017: 217), universities are therefore not powerless spectators in developing students’ capabilities. They have the potential to influence knowledge and practices within and outside higher education by employing transformative pedagogies and fostering active and equal student participation. Students should be aware of and have easy access to high-quality careers advice.

The vertical and process inequalities in this domain would entail examining whether the institutional set-up reduces barriers to, and supports diverse students’ access, participation and academic success. An assessment of process inequalities in this domain would entail an examination of how institutional capacities and pedagogical arrangements fostered graduate employability. Questions relating to this capability would reveal students’ self-assessment of their readiness for the world of work or further study commensurate with their level of education. This can be done quantitatively or qualitatively drawing from supporting functionings A to C of this capability. Indicators would include the following: I feel well prepared by my university to find a graduate job, self-employment or study further immediately after finishing this degree; I know how to write a good CV; I know how and where to search and apply for jobs or further study (e.g. newspaper and online advertisements and careers office); and I have people (family and friends) who can put me in touch with opportunities/people/networks to get a job, self-employment or further study. Specific questions on the Miratho survey would provide some information on students’ future employment prospects. Supporting evidence can also be gathered from universities’ graduate employment surveys and employers themselves.