COUNCIL ON HIGHER EDUCATION

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PERSPECTIVES ON THE POSSIBLE FUTURE OF HIGHER EDUCATION IN SOUTH AFRICA IN THE ERA OF COVID - 19

2022

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The Council on Higher Education is an independent statutory body established in terms of the provisions of the Higher Education Act No. 101 of 1997, as amended. It advises the Minister responsible for higher education and training, and it is the national authority for quality assurance and promotion in higher education in South Africa. In terms of the National Qualifications Framework Act No. 67 of 2008, as amended, the Council on Higher Education is the Quality Council for Higher Education responsible for, among other functions, the development, further development, and management of the Higher Education Qualifications Sub-Framework (HEQSF), which is one of the three sub-frameworks of the National Qualifications Framework (NQF).

Disclaimer

The *Higher Education Monitor* series comprise of publications emanating from the research and monitoring work of the Council on Higher Education. These are scholarly publications that do not present policy positions, plans or strategies formally adopted by the Council.

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Content

Foreword

Section 5(1)(*d*) of the Higher Education Act No. 101 of 1997, as amended, mandates the Council on Higher Education (CHE) to undertake research work seeking to identify key developments within the higher education system, monitor the trajectories of the identified key developments over time, assess their implications regarding the future of higher education in South Africa, and publish the information as reports on the state of higher education in the country. The CHE fulfils this mandate by undertaking research and monitoring work focused on specific themes of concern, or of interest to the higher education system, and publishing the data and findings in a publication series known as the *Higher Education Monitor*. Fourteen issues of the *Higher Education Monitor* series were published between 2003 and 2017. These were on diverse themes such as access and student success, funding, teaching and learning, private higher education, ICTs in higher education, students with disabilities, provision of programmes leading to Master of Business Administration (MBA) qualification, and postgraduate studies.

After a hiatus of five years, the CHE is pleased to publish the latest issue of the *Higher Education Monitor* which focuses on the changes that are unfolding within the higher education sector in response to the Covid-19 pandemic; and on predictions about the higher education landscape in the long term. It is important to take account of these predictions as one means of envisioning the future of higher education in the era of Covid-19. This can enable the sector to start planning proactively for this future in ways that mitigate potential challenges that can result from the predicted changes.

The publication reviews and analyses different perspectives on the future of higher education in the era of Covid-19 at a global level and assesses the implications of these perspectives in relation to the future of higher education in South Africa. The results of these analyses are thought-provoking. For instance, while a dominant perspective at a global level is that student enrolments in higher education institutions are likely to decline in the era of Covid-19, contextual factors in South Africa suggest that higher education in the country will experience growth and not reductions in student enrolments. Similarly, while the prediction at a global level suggests that there will be significant decline in funds that governments allocate to higher education institutions, the situation in South Africa will likely be more nuanced as a result of the influence of contextual factors and the need to prioritise education opportunities. Although the government may decrease funds it provides directly to higher education institutions, indirect funding through the National Student Financial Aid Scheme (NSFAS) and the National Research Foundation (NRF), for example, could increase.

On the other hand, the prediction at global level that higher education in the era of Covid-19 will be less inclusive and more unequal, will likely also be the case in South Africa. The analysis indicates that the pandemic has already exposed and further entrenched inequalities in terms of student access and success in South Africa, and that these inequalities will likely deepen. The analysis also suggests that there will likely be a decrease in student and staff mobility, and that internationalisation of higher education initiatives could stagnate in South Africa, as also at global level.

The recommendations presented at the end of the publication provide much food for thought. The CHE, the higher education institutions and the Department of Higher Education and Training (DHET) are encouraged to consider these recommendations carefully and develop and implement appropriate measures to ensure that the higher education sector in the country is able to face the predicted challenges boldly. Higher education ought to continue to serve as a key driver of socio-economic development, through the preparation of graduates who are critical thinkers, socially engaged and who can transition effectively into workspaces. Higher education should also continue to conduct research that results in new knowledge and innovation, including through international collaborations; and pursue community engagement efforts that could be of assistance to communities to recover from the ravages of the pandemic. The higher education institutions in South Africa should continue to be institutions of choice for South African, as well as international students.

It is recommended that the sector holds more colloquia and/or roundtable discussions on the key perspectives presented in this issue of *Higher Education Monitor*. Meaningful sector-wide engagement with the predictions and perspectives on the future of higher education, can help to prepare the sector for the envisioned future in a proactive, rather than reactive, fashion.

As I take the pleasure to present this issue of *Higher Education Monitor* to local and international readers, I also wish to express appreciation to the CHE staff and external experts who were involved in the research and monitoring work that led to the publication. I thank the Chief Executive Officer (CEO) of the CHE, Dr Whitfield Green, for providing able leadership to this work. It is the wish of Council that this type of work is fully supported and facilitated as part of the strategy to strengthen the intellectual and research identity of the CHE, including through a return to the tradition of producing and publishing an issue of *Higher Education Monitor* at least once every year.

Prof N. Themba Mosia
Chairperson of the Council
July 2022

Preface

The resilience of the higher education system has been tested by the Covid-19 pandemic which has made it impossible for teaching and learning, research, and engaged scholarship to continue in the manner in which they have previously been conducted. The three steering mechanisms for higher education– funding, planning and quality assurance – have equally been challenged in many ways. The net effect is that all role players have been compelled to rethink higher education not only in terms of ensuring that it endures the ravages of the Covid-19 pandemic, but most importantly, in terms of envisioning the higher education that should be expected in the era of Covid-19. The latter is critical because it is the basis for identifying changes that should be made to the steering mechanisms to ensure that they remain fit for purpose, effective and efficient.

The CHE is fully responsible for the quality assurance steering mechanism. It also has significant roles to play in the funding and planning steering mechanisms through the mandate of providing advice to the Minister responsible for higher education and training, on request or on its own volition. Funding and planning are two of the critical areas identified in the Higher Education Act that the CHE is mandated to advise the Minister on. The discourse on the future of higher education is therefore important to the CHE in terms of both its quality assurance and advice mandates.

Furthermore, the CHE has a mandate to identify and monitor key developments in higher education and publish information on them so as to assist stakeholders and other interested parties to develop an understanding of the state of higher education in the country.

These considerations provide the backdrop to the work that the CHE undertook to review and analyse key perspectives in the discourse on the future of higher education in the era of Covid-19 at a global level, and to examine these in light of the contextual factors in South Africa in order to acquire a broader understanding of how the local higher education system is likely to change as a result of the pandemic. This is the focus of this issue of *Higher Education Monitor*.

The key messages in the publication include acknowledgement and appreciation of the respective roles played by the Department of Higher Education and Training, and the higher education institutions, in responding effectively to external pressures and threats posed by the Covid-19 pandemic. The Department took a lead in producing guidelines, frameworks, and emergency policies for the sector, which individual higher education institutions implemented taking into consideration specific institutional circumstances, norms, and values. As discussed in detail in the publication, this approach has some merits, not least of which is that it maintains respect for the core principles of institutional autonomy and academic freedom. However, the flipside of it is that the responses by higher education institutions to the pandemic have been influenced by the resources, capacities, capabilities, and local support systems available to each institution. This approach potentially highlights that some institutions were able to adapt better than others, depending on resources and capabilities. Therefore, the impact of and response to the Covid-19 crisis has not been equal across the sector.

The publication discusses key changes that are predicted for the higher education landscape in the long term, in the era of Covid-19. These include sharp increases in student enrolments, institutionalisation of blended learning and teaching, entrenchment and exacerbation of inequalities, stagnation in student mobility and in internationalisation of higher education, and reversal in the gains made over the last twenty-seven years in research performance. It is critical that the higher education sector adopts a uniform, coordinated and effective response with respect to the predicted changes which present challenges. The sector should engage on how such an approach can be adopted and implemented effectively and efficiently without compromising the core values and principles of institutional autonomy and academic freedom. To this end, the CHE commits to facilitating such intellectual engagement by providing relevant platforms such as colloquia, on the subject. Accordingly, readers are encouraged to contribute to the discourse by providing comments on this publication. These should be addressed to research@che.ac.za.

The ongoing planning for the implementation of the new Quality Assurance Framework (QAF) will undoubtedly take into consideration the prediction that blended teaching and learning will likely be institutionalised following the Covid-19 pandemic. The key quality assurance functions will make the necessary changes to their criteria, standards, processes, and procedures to ensure that they will be in sync with this rapidly emerging reality. The CHE will also work closely with the sector to give attention to the issues of enrolment planning, transformation and inequality, funding, and the future of research, so that appropriate responses to the predictions on these issues could be developed going forward.

The efforts of Dr François van Schalkwyk and the internal CHE research staff members who worked with him on the project that produced this issue of the *Higher Education Monitor* are acknowledged with much appreciation. I would also like to express sincere gratitude to the peer reviewers, and to the participants in the colloquium that was held in October 2021 to engage the contents of an earlier draft of this publication.

Dr Whitfield J Green
Chief Executive Officer
July 2022

Acronyms

BER:	Business Confidence Index
CHE:	Council on Higher Education
CSIR:	Council for Scientific and Industrial Research
CREST:	Centre for Research on Evaluation, Science and Technology
DHET:	Department of Higher Education and Training
DPSIR:	Drivers, Pressures, State, Impact and Response Analytical Framework
DSI:	Department of Science and Innovation
FTE:	Full Time Equivalents
GDP:	Gross Domestic Product
GERD:	Gross Expenditure on Research and Development
HEDA:	Higher Education Data Analyser
HEMIS:	Higher Education Management Information System
NRF:	National Research Foundation
NSFAS:	National Student Financial Aid Scheme
PhD:	Doctor of Philosophy
PSET:	Post-School Education and Training
RSA:	Republic of South Africa
SACC:	South African Chamber of Commerce and Industry
SADC:	Southern African Development Community
SARB:	South African Reserve Bank
SAULM:	Students' Access to, and Use of Learning Materials
SEP-TLF:	Staff Experience of, and Perspectives on Teaching and Learning and its Future
Stats SA:	Statistics South Africa
TVET:	Technical and Vocational Education and Training
UFS:	University of the Free State
Unisa:	University of South Africa
USAf:	Universities South Africa

1. Introduction

For over two years, South Africa and the global community have endured the grip of a pandemic caused by the SARS-CoV-2 virus, which is commonly known as Coronavirus (hereinafter referred to as the Covid-19 pandemic). So far, there are no indications that the end of the pandemic is in sight. Besides causing loss of life at a significant scale, the Covid-19 pandemic has caused massive disruptions in human activities: social, economic, cultural, and religious. Essentially, all spheres of human life have been significantly impacted. Higher education has not been spared the impact of the pandemic. Government, through the Department of Higher Education and Training (DHET), has led efforts to ensure that academic activities in higher education institutions persist notwithstanding the ravages of the pandemic. These efforts have seen public universities being able to complete the 2020 academic year, and also being able to reopen for, and complete the 2021 academic year. They have been able to do so by investing handsomely into interventions to mitigate the effects of the pandemic. Most of the interventions have focused on developing digital infrastructure to support online teaching and learning, and on putting in place measures to secure the safety of staff and students.

As the pandemic grinds on, some of the interventions, which were initially designed to be of emergency nature, are gradually being entrenched to the extent that it increasingly looks like it would not be easy (nor desirable) to reverse the changes they have brought, even when the pandemic comes to an end. In other words, it increasingly appears that some of the changes taking place may outlast the pandemic. This then raises the question about the long-term implications of the pandemic to the higher education that people knew and were accustomed to before the pandemic. This is a question about how higher education is likely to look like in the future, in the Covid-19 era. This is an important matter to mull over and ponder on because understanding how higher education is likely to look like in the future, as the world learns to live with Covid-19, would go a long way towards making it possible for all key higher education stakeholders to start preparing for the unfolding new reality. Planning for the future of higher education after the Covid-19 pandemic is essential to avoid such a future being much of a surprise to critical role players in the same way the advent of Covid-19 surprised and caught higher institutions, regulatory bodies, and other key stakeholders, largely unprepared.

The Council on Higher Education (CHE) is one of the key role players in the sector. It is fully responsible for one of the three mechanisms for steering higher education in South Africa, namely quality assurance. It is interested to establish whether or not the measures implemented by institutions to salvage the academic years are simply for expediency, or they also take into account the need to maintain quality of higher education. The CHE is focused on safeguarding the quality of higher education in the country and recognises that it needs to do so in collaboration with the higher education institutions. It needs to establish if the changes in teaching, learning and assessment that have been implemented in response to the Covid-19 pandemic are likely to become the new normal for the future, or whether there would be a return to the dispensation prior to the Covid-19 pandemic. The middle of the road dispensation incorporating aspects of the dispensation

possibility, and therefore cannot be ruled out. The first and the last possible futures of higher education would necessitate the CHE to develop new fit for purpose quality assurance tools and processes, or to adapt existing tools and processes.

The CHE also plays important roles in the other two mechanisms for steering higher education, namely planning and funding. It does so through its mandate to advise the Minister of Higher Education, Science, and Innovation (RSA 1997), who is the executive authority responsible for planning and funding. It is important that the CHE acquires good understanding of the most likely future features of the higher education system so that it may use such understanding to inform its advice to the Minister regarding planning and funding higher education in a post-Covid-19 environment.

Furthermore, the CHE has a mandate to monitor developments within the higher education system, and publish the data and information acquired from the monitoring work to report on the past, current and future states of higher education regularly (RSA 1997). In this regard, it is necessary for the CHE to undertake some analyses of the key changes taking place within the higher education system in the wake of the Covid-19 pandemic, examine different scenarios projected by researchers locally and globally, assess their implications for the future of higher education in the country, and publish the resultant information to alert stakeholders of the likely future features of the higher education system.

Flowing from the above, the CHE reviewed and analysed the key predictions presented in popular higher education-related media and academic literature about the future of higher education in the Covid-19 era and assessed the implications of such predictions for quality assurance, planning and funding of higher education in South Africa. This issue of *Higher Education Monitor* describes the review and analysis conducted and presents and discusses the findings thereof.

2. Purpose

The primary purpose of this issue of *Higher Education Monitor* is to present the main perspectives on the possible future of higher education in South Africa in the era of Covid-19 based on the review and analysis of predictions of researchers and other experts in higher education. These perspectives paint different pictures of the future outlook of higher education in the country, pointing to key issues that need to be addressed or responded to, in making preparations for the future, in the era of Covid-19.

A related purpose of the publication is to inform and start a discourse on the future of higher education by drawing attention to the predictions made about the extent to which higher education would be affected by the Covid-19 pandemic. Such discourse is critical because it will sensitise role players and stakeholders about the work that needs to be undertaken to prepare to confront the challenges of higher education as Covid-19 becomes endemic in contemporary society.

3. Approaches and methods

The contents of this issue of *Higher Education Monitor* are derived mainly from the analysis of existing literature, broadly conceived, as a source of data on the future of higher education in the era of Covid-19. Two bodies of literature were drawn upon to conduct systematic reviews of predictions made about the future of higher education in the era of Covid-19.

The first corpus reviewed and analysed consisted of specialist online reporting on higher education with a global remit. For this purpose, *University World News* was selected as a source. It is important to note that other potential sources such as the *Times Higher Education, The Chronicle of Higher Education* and the like, are more focused on regional higher education issues, and therefore could not be used as the principal sources for this purpose. A search of the *University World News* website was conducted on 13 May 2021 using the keywords 'post covid' and 'covid era'. The search query returned 550 results from 79 unique web pages and/or articles for the period April 2020 to May 2021. The articles were reviewed manually following which eight articles were excluded as they did not make any explicit predictions about the future of higher education. The final sample of 71 articles was imported into the text analysis software package Atlas.ti for coding.

A free coding approach was followed in the case of predictions relating to the future of higher education in the era of Covid-19. The coder created new codes as predictions were identified in the text. Once all 71 articles had been coded, the codes were cleaned and consolidated into 32 predictions (see Annexure A for the full list of predictions). In addition to coding according to prediction, the text was coded according to whether the prediction indicated a change or no change to higher education in the long term, in the era of Covid-19. If the prediction was for change, it was coded according to whether the change was presented as positive, negative or neutral.

Articles were also coded for author and affiliation, and for predictor and affiliation in cases where the predictions were not made by the authors themselves. All predictions made by a single predictor were reviewed and collectively assigned to one of the following affective categories: negative (all predictions were negative); slightly negative (some predictions were negative); neutral (predictions were neither negative or positive); balanced (both negative and positive predictions); slightly positive (some predictions were positive); positive (all predictions were positive).

The second corpus analysed consisted of journal articles from the higher education studies literature. Articles were identified from the two of the top higher education journals[1] – *Higher Education* and *Studies in Higher Education* – as well as from two South African journals – *The South African Journal of Higher Education* and *The South African Journal of Science*. Journal articles for the period 1 March 2020 to 30 April 2021 that included the term 'Covid' in their titles were selected. In the case of *The South African Journal of Science* which, unlike the other three journals is not subject-specific, an additional requirement was that the titles of selected articles make reference to higher education, or a

[1] According to Google Scholar: https://scholar.google.com/citations?view_op=top_venues&hl=en&vq=soc_highereducation

relevant aspect thereof. All types of articles were selected including research articles, commentaries, editorials, letters, and so on. This process returned 21 articles. Articles were then searched using the terms 'predict*' and 'post' to limit the sample to only those articles making predictions about the higher education landscape after Covid-19 has become endemic. The resulting 11 articles were analysed to produce synopses of only those articles that included predictions related to higher education.

The first draft of this publication was circulated to several experts in the area of higher education, within and outside of the CHE, for comment. Some of these experts are mentioned in the section on 'acknowledgments'. The comments received were considered and, where necessary, incorporated into a revised draft. The second draft was presented at a colloquium convened by the CHE on 15 October 2021. Key inputs and comments from the colloquium were subsequently incorporated into the document to produce this final publication.

4. Limitations

It is important that readers of this issue of *Higher Education Monitor* at all times bear in mind that the predictions on the future of higher education in the era of Covid-19 presented and discussed herein are those derived from the *University World News* and the four scholarly journal publications on higher education. Whiles these sources were deemed sufficient for the purposes of this study, they might not have emphasised strongly on some key issues in higher education in South Africa. Such key issues include transformation and decolonisation of 'the university'. Therefore, predictions reviewed, analysed and discussed herein, do not cover such issues directly, and this is one of the limitations of the approaches and methods used, and of the data and information derived therefrom. However, it is possible to make inferences about transformation from the predictions on enrolments and access to higher education, as well as on inclusion and inequalities. As will be discussed later, the pandemic seems to have had the critical effect of exposing the fault lines in the higher education system including lack of, or slow progress in achieving the goals of a fully integrated and transformed higher education system in South Africa.

The second limitation is that the official verified system-wide datasets on higher education are normally released and made available to the public one-and-half to two years after the academic year for which the datasets relate to. For example, the datasets for the 2020 academic year, which was the first to suffer the effects of the Covid-19 pandemic, is expected not earlier than June 2022. The implication is that, at the time of preparing this publication, towards the end of 2021 and early 2022, there were no official system-wide datasets to help indicate, for instance, the impact of the Covid-19 pandemic on the 2021 enrolments in public higher education institutions in South Africa. On this basis, data on the Covid-affected 2021 enrolment period will only be available in April 2023. It therefore remains unknown how many students enrolled at South Africa's public universities for the 2020 and 2021 academic years; or how Covid-19 has impacted on the composition of university staff. The most recent data available are

for the 2019 academic year, available either as complex data tables on the DHET website[2] or via the Higher Education Data Analyser (HEDA) platform[3] of the private company IDSC.

The Covid-19 pandemic has amplified the effects of viscous data flows. Delays in the availability of data result in a lack of a systemic overview and may lead to spurious predictions about the current and future state of the higher education system. Institutions with the capacity to do so can analyse their own data much earlier than the official Higher Education Information Management System (HEMIS data) is available. This may result in uneven and uncoordinated responses. Previous research has already drawn attention to the slow and limited flow of reliable higher education data throughout the national ecosystem (Van Schalkwyk *et al*. 2016).

5. Structure of the publication

The publication begins with an introduction that sets the scene for what follows. It provides background information on the theme or title of the publication and explains the interest of the CHE in it. After the introduction, the purposes of the publication and the work that led to it are presented, followed by the approaches adopted and the methods employed in acquiring, processing and analysing the relevant datasets and information. This is followed by a discussion of the limitations. It then delves into presenting a review of predictions made about the future of higher education in the era of Covid-19. The review includes an analysis of the future scenarios to produce a set of themes that emerge from the literature, and to identify the most common themes. Predictions are then reviewed critically based on the available evidence to consider the likelihood of the predicted scenarios playing out in the South African context. The publication concludes with a set of recommended actions to prepare for the most likely future of higher education in the era of Covid-19.

6. Global scale predictions of the future of higher education in the era of Covid-19

This section presents and discusses the predictions about the future of higher education in the era of Covid-19 on a global scale. The predictions identified from the popular higher education media are presented and discussed separately from the predictions identified from higher education scholarly journals.

6.1 Predictions identified from the media

Early indications were that most of the reporting on the impact of Covid-19 on higher education focused on its teaching and learning function (Phakeng *et al*. 2020; Walwyn 2020). Where reporting considered the impact on research, the focus was either on the future funding of research or on those research activities unable to transition to online or virtual modes (Hedding *et al*. 2020; Servick *et al*. 2020).

[2] https://www.dhet.gov.za/SitePages/Higher-Education-Management-Information-System.aspx
[3] https://www.heda.co.za/PowerHEDA/dashboard.aspx

Findings from the content analysis of predictions in *University World News* articles show that the six dominant topics[4] are (in descending order): funding, internationalisation, hybrid/blended teaching and learning, research, enrolments, and inclusion. Predictions related to teaching and learning and to research occur in equal measure (38 predictions in both cases).[5]

Table 1: Main prediction topics related to higher education post-covid

Prediction topic	Frequency (n)
Enrolments[1]	24
Funding	50
Hybrid/blended teaching and learning[2]	38
Inclusion	23
Internationalisation[3]	49
Research[4]	38

1 Includes access | 2 Includes digitisation | 3 Includes mobility | 4 Includes collaboration

In instances where change was predicted, predictions were coded according to sentiment in terms of whether it was predicted that the pandemic would likely have a positive, negative or neutral impact on higher education (see Figure 1).

Figure 1 shows that the impact on student enrolments, inclusion, internationalisation and funding are generally described as being negative, while the predicted impact of the Covid-19 pandemic on teaching and learning, resulting in a shift to hybridisation, is generally seen as positive. The impact of the pandemic on university research is mixed, although positive predictions may be skewed by the inclusion of collaboration under research because the pandemic is generally described as having a positive impact on collaboration.

Instances were also noted where no change was predicted. Figure 1 shows that while there are instances where no change was predicted, such predictions were always in the minority relative to predictions of change.

[4] These represent the top quantile of prediction topics identified. See Figure A2 for all topics and topic frequency.
[5] Only one prediction related to the so-called 'third mission' (or engagement) of the university was identified from the sample of 71 articles.

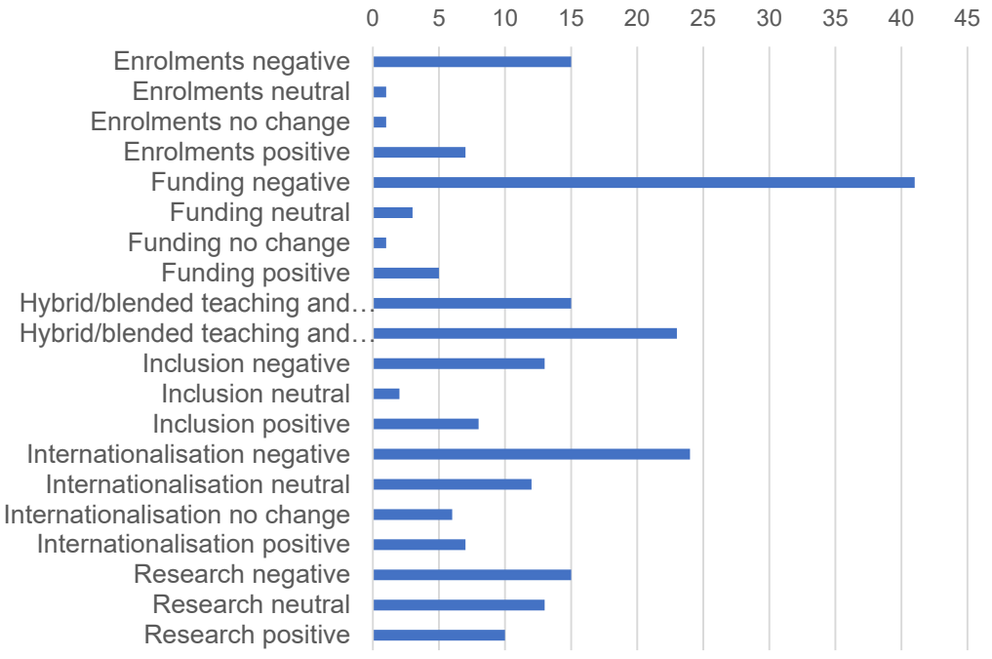


Figure 1: Six main prediction topics and their sentiment in *University World News* articles

A mix in prediction sentiment for any of the topics is to be expected since the Covid-19 pandemic may have a negative impact for one country or region while simultaneously impacting positively on another country or region. For example, changes in student mobility attributable to Covid-19 may impact countries such as Australia, New Zealand, the United Kingdom and the United States of America negatively, while having a positive impact on student mobility between countries in regional blocs such as Southern Africa, Latin America or parts of Asia.

Whether the future of higher education in the era of Covid-19 was described as positive, or negative is also most likely attributable to the prognosticator's profession and expertise. For example, a tech entrepreneur may have a very different, and possibly more positive, outlook than a pedagogue. To account for this variance, stance was coded for expertise. The results show that most of the experts cited in the sample of *University World News* articles were academic staff (53%). Experts not directly associate with universities made up no more than 10% of those cited.

Table 2: Predictions by type of expert (n=81)

Expert type	N	%
Higher Education academic	43,24	53%
Higher Education leadership	8,33	10%
Consultant	7,67	9%
Company	7,00	9%
Non-Governmental Organisations	5,00	6%
Higher Education non-academic	3,08	4%
Supranational Organisations	2,50	3%
Government	2,17	3%
Journalist	2,00	2%

Figure 2 shows that academics, companies, and supranational organisations were predominantly negative about the future of higher education in the era of Covid-19. Unsurprisingly, journalists' predictions were either balanced or neutral. Perhaps equally unsurprising was those predictions emanating from government were almost equally positive and negative, with no predictions in the middle of the spectrum. Consultants and non-government organisations also occupy both ends of the spectrum, but with some being less polarised. Higher education leadership and non-academic staff were similarly slightly more positive in their outlook.

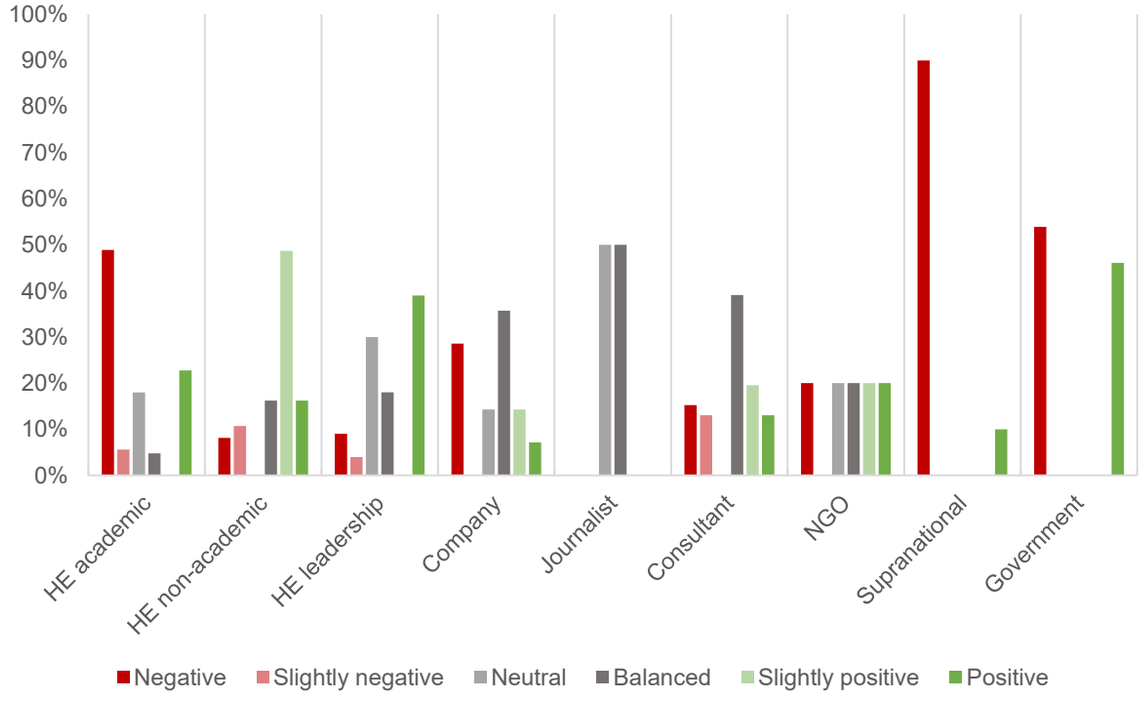


Figure 2: Sentiment according to area of expertise

Lemaitre (2002) argues that two contradictory views of the university exist as a consequence of globalisation: the 'traditional disciplinary' view (also associated with collegiality and focused on the pedagogical and scientific purpose of the university) and the 'operational or entrepreneurial' view (associated with New Public Management, associated practices and focused on the instrumental economic purpose of the university). On this basis one might expect academic university staff who are, on balance, more likely to hold the traditional disciplinary view, to be more concerned about the impact of the pandemic on teaching and learning, and on research. Disruptions to these functions as a result of Covid-19 are therefore likely to be regarded as having a negative impact, and this is borne out in the data. Similarly, those who predominantly subscribe to the 'operational' view of the university – university leadership, non-academic staff, and companies – are more likely to view the crisis as a driver of change, a 'business opportunity' [D10], in which the 'power of technology [will] play a central role' [D9] and there will be a 'greater appetite for global cooperation' [D44]. This was found to be the case for university leadership and non-academic staff, but companies viewed the pandemic in a mainly negative light.

Caution is required when reading Figure 2 as the prediction sentiment calculations are based on small samples. Further analysis is required to link predication sentiment, type of expertise and the nature of the prediction in order to establish more granular patterns and possible correlations.

The sub-sections below provide a brief overview of each of the six main prediction topics identified and include extracts from the articles analysed. The qualifications and cautions about the relationship between sentiment and the ideologically informed views of the university's purpose should be kept in mind when reading the predictions.

6.1.1 Enrolments

Table 3: Predictions in relation to enrolments

Predicted change/impact	Examples
No change	The demand for private higher education is not likely to diminish post-Covid-19 [D67]
Change	
Positive impact	Regardless of current events, the demand for higher education will persist and grow [D77]
Negative impact	Reduced capacity to pay will reduce demand for higher education [D29] While making it easier for elite colleges and universities to design and deliver online courses is a good policy initiative, it will not significantly increase enrolments [D29] It is fairly clear that there will be a big fall in the number of international students and scholars globally [D26]. A lot of local students will be staying away as well. Many will see little point in going deep into debt for online or blended programmes that lead nowhere. Others will be reluctant to pay or borrow money without getting the full campus experience. [D25]
Neutral impact	How adeptly the market responds will dictate success or failure, not just for the next year, but well into the future [D46]

The general outlook for student enrolments in the long term, in the era of Covid-19, is negative. Obvious barriers to student mobility and internationalisation efforts, combined with financial pressures on families as a result of economic decline caused by the pandemic, are considered as factors that would drive a decline in enrolments.

Predictions detailing the extent to which the decline in enrolments will persist, vary. Some view it as a temporary effect and believe that the enrolments will recover at some point and even start to grow thereafter as national economies recover and return to growth, which, in turn will see an increase in the demand for higher education.

6.1.2 Funding

Table 4: Predictions in relation to funding

Predicted change/impact	Examples
No change	For prestigious private universities, mainly in the United States, endowments have lost value with declines in the stock market. Most of them will recover [D2]
Change	
Positive impact	Covid-19 may also be a business opportunity for universities to develop new models which to date are not provided on a broad scale [D10] The commercial side of higher education will benefit from the current wave of nationalism and populism [D36]
Negative impact	In terms of the forecast impact on higher education, the most anticipated negative change expected by university leaders was a fall in institutional revenues [D55] The ramifications of the pandemic for higher education budgets will be felt for many years to come, and will continue to affect the ability of education ministries to provide the required financial support critical for the sustainable development of universities [D57] Because of massive expenditures aimed at stabilising economies during the crisis, it is likely that future public allocations to higher education will shrink [D2] Several colleges and universities worldwide will be forced to close. [D13] The possible impact of the lockdown on new admissions and related challenges is creating serious financial stress that could lead to the closure of many institutions, especially the new ones. [D68]
Neutral impact	Given their need to remain financially viable, commercial partnerships with companies, government bodies or other large institutions will continue [D20]

The most pervasive effect of the Covid-19 pandemic on higher education is predicted to be a decline in revenue from various sources of funding. Declining revenues will, it is predicted by many, result in several changes in the higher education landscape, including closures, mergers and acquisitions, particularly in the United States of America, but also predicted elsewhere in the case of private higher education. More positive predictions describe the resilience and financial gains of elite institutions, and of new sources of funding for higher education institutions in Africa in the long term, as Covid-19 becomes endemic.

6.1.3 Hybrid or blended teaching and learning

Table 5: Predictions in relation to hybrid or blended teaching and learning

Predicted change/impact	Examples
No change	We doubt that there will be a profound and lasting 'technological revolution' in higher education [D2]
Change	
Positive impact	It is inconceivable not to see the power of technology play a central role in the act of education and the world of academe. [D9] Higher education will not become totally virtual. But online teaching and learning as well as online research collaboration and networking will definitely increase, and that is a positive development [D17] When 'normality' returns there might be an extreme reaction with students demanding face-to-face contact, but afterwards there will be a "new balance" in which the university can take advantage of their new experiences in online learning. [D52] Online provision will stay and be a solid element of teaching and learning [D56] Accelerating technological and pedagogical innovations in higher education will enhance what universities do on the other side of the Coronavirus. [D37]
Negative impact	None
Neutral impact	It is apparent that a wider variety of channels for teaching, especially online and distance teaching and learning methods, will be used by universities and colleges. [D26] The post Covid-19 era when blended education (online and on-campus learning) will become ubiquitous [D34]

Blended or hybrid learning is generally predicted to have positive impact on higher education and is seen by some as becoming institutionalised in the teaching and learning function of universities. In fact, no instances were identified in which explicitly negative sentiments were expressed in relation to the conversion to blended or hybrid teaching and learning. Many viewed the shift to blended or hybrid learning, and the accompanying digitisation of the university, as simply inevitable, and expressed neither positive nor negative sentiments with regard to its institutionalisation. However, some commentators have cautioned against an overly optimistic view on changes in teaching and learning in the long term as Covid-19 becomes endemic, arguing that the claimed benefits are unlikely to be enjoyed by all. The potentially inequitable distribution of benefits is described further in the section on 'inclusion' which follows.

6.1.4 Inclusion

Table 6: Predictions in relation to inclusion

Predicted change/impact	Examples
No change	None
Change	
Positive impact	Harnessed appropriately, technology promises to address inequities in student access and accomplishment. [D36] This transition could provide not merely cost-cutting benefits to universities longer term but would help create higher education institutions that are more accessible and inclusive than ever before. [D63] Formerly disadvantaged groups and individuals may get easier and greater access to university programmes, international cooperation, virtual networks and the like [D01] offers a chance to reboot and reshape academic mobility, making it more inclusive [D52]
Negative impact	The myth that Covid-19 will be "some great equaliser" should be debunked as its impact on education is likely to increase the gap between richer and poorer regions around the world [D43] Not only will the currency of, generally now non-exam, grades have been destabilised, but the grades themselves will be based on divergent school experiences that reflect, and magnify, social inequality. [D58] Inequality between higher education systems, and within these systems, will increase, as will inequality of access to higher education. [D17] We posit that the commercialisation of internationalisation may result in unintended consequences, such as deepening existing inequalities in higher education. [D22]
Neutral impact	Will it lead in the long term to more inclusive approaches to global learning? Or will we simply slip back into our old ways of thinking about and being international in higher education, with a primary focus on exclusive approaches focused on mobility for a minority of students? [D33]

Despite the positive rhetoric around digitisation and inclusion, equally there are concerns that Covid-19 will exacerbate pre-pandemic inequalities in higher education *vis-à-vis* access and attainment. In other words, there is no consensus as to whether the effects of the pandemic will be positive or negative in terms of increases in the inclusion in higher education of previously marginalised groups. Some argue that distance education and improved and diversified modes of delivery, will result in more inclusive higher education systems. Others point out that limited access to technology for certain segments of the population, combined with data costs, will exacerbate inequalities. The extent to which Covid-19 results in greater inclusion may depend on the accessibility of technology in particular countries, not to mention the skills required to exploit the available technologies. It may well be the case that Covid-19 is

perceived to lead to greater inequality in those countries where pre-Covid inequalities were already entrenched in society.

6.1.5 Internationalisation

Table 7: Predictions in relation to internationalisation

Predicted change/impact	Examples
No change	The basic configuration of internationalisation is likely to remain [D02]
Change	
Positive impact	This could mean more international universities will look to establish new campuses across the continent, signalling a bright new future for education in this region [D20] We advance that, while travel and mobility will resume and remain an aspect of internationalisation, virtual collaboration and local internationalisation will become the main growth areas for institutional internationalisation. [D22]
Negative impact	Colleges and universities worldwide, especially those in countries heavily dependent on Chinese student enrolments, like Australia, Canada, New Zealand and the United States, can no longer expect Chinese students to enrol in the numbers they have for decades. [D14] Every form of international education is currently affected by the crisis and will be for some time, from study abroad schemes to staff exchanges and internships to transnational collaborative programmes and capacity-building projects in developing countries. [D10] The most obvious is that international student mobility will be reduced [D25] Many have predicted a prolonged decline in international student mobility, saying more students will prefer to study online or through local provision. [D71]
Neutral impact	There will be a significant impact and mobility patterns will continue to shift as they have already been doing for quite some time independent of the crisis [D10] It is still not clear how the international student market will recalibrate given the effects of the pandemic [D32]

Generally, and unsurprisingly, it is predicted that internationalisation and student mobility are likely to be affected negatively by the pandemic as travel restrictions, quarantine and vaccine requirements, and the unpredictability of lockdowns, are all impediments to students' ability to travel internationally. In many instances, however, the impacts are perceived to be short-term, and the longer-term effects of Covid-19 on internationalisation are still very much unknown. This may account for the second-most common prediction related to the long-term state of internationalisation and student mobility in the era of Covid, which is neither positive nor negative (see Figure 1). Where the outlook for the long-term state internationalisation in the era of Covid-19 is positive, it is in those countries such as India, or regions such as Africa that are likely to see changing post-pandemic behaviour and student choice working in favour of their higher education systems.

6.1.6 Research

Table 8: Predictions in relation to research

Predicted change/impact	Examples
No change	
Change	
Positive impact	Meanwhile, in East Asia and maybe a few places in Southeast, South and West Asia and Eastern Europe, economic recovery, relative political stability and rigorous admissions, recruitment and promotion policies will produce a steady growth of research and innovation. [D25]
Negative impact	Predict a fall in core national funding as a result of Covid-19, compounding the huge hits universities have taken on rental and commercial services and contractual research. [D63] As universities slash budgets, expensive research projects will be cut. The quality and quantity of research throughout the West will start or continue to deteriorate and the absence of international graduate students will make things worse. [D25] After the academic year of 2020-21, the largest debts to university faculty and students will be not financial, but intellectual. [41] Global support to higher education, research collaborations and partnership schemes, most often directed at critical areas such as strengthening PhD programmes, could be massively scaled back. [D66]
Neutral impact	There will be increased demand for closer and more direct collaboration and partnership between government, industry and academia to address various issues caused by Covid-19, especially when it comes to research and development activities. [D26] More than ever, a globally connected research environment will be critical for the success of universities, which will have to integrate with global research networks and have a strong network of continental and global partnerships to succeed. [D22]

Generally, the prediction for higher education research is that it will be negatively impacted by the Covid-19 pandemic. The prospective reduction in research activity in the era of Covid-19 is mainly attributed to the likely reduction in research funding. The bleak research landscape in the era of Covid-19 is tempered somewhat by predictions of increased collaboration in the global higher education system as the pandemic has made clear the value of global partnerships and networks. Uncertainty prevails around the impact of increasing nationalism and shifting geopolitical power (between the United States of America, China and Europe) on higher education research. Where the impact of research in the era of Covid-19 is perceived to be positive, it is in those countries that recover quickest in economic terms relative to other countries globally.

6.2 Predictions identified from higher education scholarly journals

A review of the four selected journals reveals surprisingly little engagement by higher education studies and other scholars on the topic of the future of higher education in the era of Covid-19. The *South African Journal of Higher Education* does not include any articles on the topic, and *Higher Education* has only a few (namely, Komljenovic 2020 and Watermeyer *et al*. 2020). Whether this finding is attributable to a lack of interest on the part of the academic community or to delays in the journal publication process cannot be determined at this stage. The *South African Journal of Science*, the only non-higher education studies specific journal in the small sample, published a special issue titled 'More eyes on Covid-19'[6] to bring a multi-disciplinary perspective to bear on the impact of the pandemic in South Africa. One article published focuses specifically on the impact of the pandemic on the South African higher education system (Hedding *et al*. 2020). *Studies in Higher Education* also published a special issue titled 'The impact of a pandemic: a global perspective'.[7] Most of the articles published in the special issue were of a reflective nature. However, two focused particularly on the future of higher education in the Covid-19 era and synopses of these articles are presented below, along with relevant comments from the other articles analysed.

Bebbington (2021) addresses a range of issues afflicting higher education in Australia as a result of the pandemic, including that online learning and digital tools are becoming central to teaching and learning. He also looks at the impacts on staff restructuring, financial constraints, and the country's continued dominance as destination of choice for foreign, and particularly Chinese, students. He argues that the pandemic has revealed several fault lines in the country's higher education system and that it presents the future higher education system with an opportunity to become more differentiated. More focused universities in a more diverse system, he argues, make possible many of the required reforms.

Coates *et al*. (2021: 169) writing mainly from a Chinese and Australian vantage point, also point to the possibility of "more nuanced and idiosyncratic directions. After decades of 'global growth' such diversification is timely, helping both communities and universities build productive capabilities, partnerships, and successes." They also argue for the likelihood of increasingly closer ties between governments and their universities in the future higher education system.

Hedding *et al*. (2021) focus predominantly on the likely impact of the pandemic on research in the South African context. They draw attention to the fact that the pandemic will present both challenges and opportunities for research and emphasise that how researchers are impacted by the pandemic will be 'highly individualistic' (Hedding *et al*. 2020: 2). They call on higher education stakeholders, and research funders in particular, to show compassion for researchers during the pandemic.

As regard to future modes of delivery of higher education, Coates *et al*. (2021) point out that in the case of China, online learning and teaching was treated as a temporary substitute for face-to-face teaching. As the pandemic was brought under control in China, universities returned to more traditional modes of instruction. Nevertheless, hybrid modes will persist (Goedegebuure and Neave 2021; Hedding *et al*.

[6] https://sajs.co.za/issue/view/809
[7] https://www.tandfonline.com/toc/cshe20/46/1

2021; Osman in Walwyn 2020) and, according to and Coates *et al*. (2021), not least because of the 'intrusion' of education service providers into university operations (see also Ivancheva *et al*. 2020) or, more broadly, the marketisation of teaching and learning (Czerniewiecz in Walwyn 2020). The digitisation of education is further explored by Komljenovic (2020) who expresses concern about anachronistic theory and understanding in relation to data and data products in higher education, the production of which have been accelerated by the pandemic to the extent that practice outstrips policy. Madonsela (2020) notes the exclusionary effects on disadvantaged students and the further entrenchment of social inequalities as a consequence of the digitalisation of higher education in the case of South Africa. Watermeyer *et al*. (2020: 623), following a survey of those responsible for delivering higher education in the United Kingdom, conclude that "online migration is engendering significant dysfunctionality and disturbance to … their pedagogical roles".

Coates *et al*. (2021) further explore the possible reconfiguration of internationalisation and mobility in the long term, in the era of Covid-19; and, to a lesser degree, how Covid-19 has impacted on, and will shape future research. Across all their considerations, Coates *et al*. (2021) regularly emphasise the inescapable role that Asia will play in shaping the future of higher education, and that the Covid-19 pandemic has re-emphasised the necessity to redesign the global higher education system. Goedegebuure and Neave (2021: 3) concur to the extent that many of the reflective contributions to the special issue by *Studies in Higher Education* "raise more fundamental questions about the role of our sector in the face of global challenges and our ability to respond or perhaps even play a leading role in driving change".

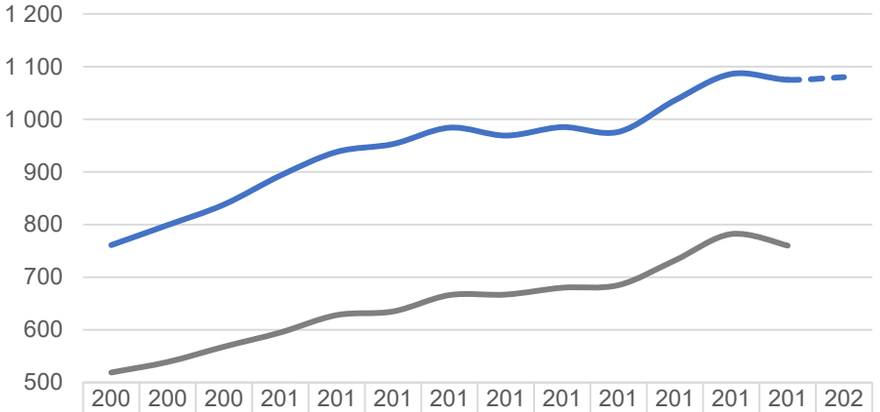
7. Critical perspectives within the context of South Africa

This section revisits the global level predictions presented and discussed in the preceding section, and critically analyses them from the perspectives of higher education in South Africa using an adapted 'drivers-pressures-state-impact-response (DPSIR)' framework. The DPSIR framework was initially developed in environmental sciences to provide structure for the analysis of multiple factors that contribute to the 'state of the environment' in a particular area or territory, and for reporting such to policy makers (Kristensen 2004). According to the DPSIR framework, there is a chain of causal links starting with 'driving forces' (economic sectors, human activities) through 'pressures' (legal, ethical, labour demands) to 'states' (physical, socio-economic, cultural, mental wellbeing, health) and 'impacts' on a system or society, eventually leading to political 'responses' (prioritisation, target setting, indicators). Critically analysing each prediction in terms of driving forces, pressures, states, impacts and responses using an adapted DPSIR framework, provided deep perspectives of what could be the future of higher education in South Africa in the era of Covid-19. These perspectives are presented and discussed in the ensuing sub-sections.

7.1 Enrolments

The global level prediction is that enrolments in higher education institutions will decline in the long term, in the era of Covid. Other parts of the world have started witnessing the declined in the enrolments of students in higher education institutions. For example, in the United States of America, after a year into the pandemic, colleges and universities experienced their greatest decline in enrolments in a decade, with 603 000 fewer Americans enrolled compared with the previous year. This represents a 3.5% decline in the number of students in higher education, seven times greater than the year-on-year decline recorded at the start of the pandemic (National Student Clearinghouse Research Centre in Greenfield 2021).

In South Africa, the two decades before Covid-19 witnessed a relatively steady growth trend in student enrolments in higher education. As reflected in Figure 3 below, headcount student enrolment numbers in public universities increased from 761 000 in 2007 to just over 1 million students in 2019. During the same period, the full-time equivalent (FTE) enrolment increased from 519 000 to 760 000.



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Head count enrolments	761	799	838	893	938	953	984	969	985	976	1 036	1 086	1 075	1080
FTE enrolments	519	539	568	595	628	635	666	667	680	685	732	782	760	

Figure 3: Headcount and full-time equivalent (FTE) student enrolments in public universities in South Africa: 2007 to 2020 ('000)
Source: DHET/HEMIS. Estimate for 2020 from DHET Annual Performance Plan 2021/22, Annexure A: Consolidated Indicators.
Compiled by Ian Bunting/DSI-NRF Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy (SciSTIP).

By March 2020 when South Africa was officially declared to be in a state of disaster related to the Covid-19 pandemic, most students would already have enrolled for the 2020 academic year. The effects of the pandemic on student enrolments and dropout would therefore only have become evident in the early months of 2021. And at that point in time, only individual institutions would have a sense of whether the pandemic had impacted enrolments because official system-wide higher education data is typically released by the DHET about 12 to 18 months after the end of each academic year. In other words, the data for the 2021 academic year can be expected in the second quarter of 2023. In the absence of publicly available data to inform the impact of the Covid-19 pandemic on enrolments in the South African higher education system, other indicators may provide some insights.

It is generally accepted that one of the counter-intuitive characteristics about higher education is that it can run in the opposite direction to the economy (Ahlburg 2020; Barshay 2020; Clark 2011). While data published shows that the South African economy is slowly recovering from the impact of restrictions to contain the pandemic, output is only expected to return to pre-Covid-19 levels in 2023 (Naidoo 2021). A stunted economy usually results in an increase in demand for higher education as school graduates and the unemployed decide to pursue further studies to improve their job prospects. The Brookings Institution, for example, found that a 1.0 percentage point increase in the unemployment rate in the United States of America is associated with a 1.6 percentage point increase in university enrolment (Startz 2020). South Africa's official jobless rate rose to 32.6% in the first quarter of 2021, while unemployment (according to the expanded definition) was at 43.2% (Naidoo 2021).

Drawing a distinction between undergraduate and postgraduate enrolments may also be important. Students may seek to continue their studies at postgraduate level if they determined that an undergraduate qualification will not necessarily result in employment in the current economic climate. Again, up-to-date data are required to confirm this possibility. What is of concern, though, is that continuing to postgraduate education as a tactic to either delay or improve prospects in relation to securing employment, could impact on the quality of postgraduate students. Supervisors of postgraduate research have complained about having to do more in the supervision of students who have not necessarily performed well at undergraduate level and who seek a further qualification because of its perceived value in the job market, and not because they have innate interest in pursuing postgraduate studies.[8]

There are reports of positive developments in South Africa's private higher education sector. Based on a multiversity model, Stadio, one of the large private higher education providers has five faculties distributed across several institutions. In 2020 it announced that it will introduce two doctoral degrees, a first step in the institution offering the apex in higher education qualifications (Moodley 2020). Stadio offers hybrid learning, combining traditional classroom experiences, experiential learning objectives, and digital course delivery. Despite a decline in number of contact learning students, it has seen a net increase in student enrolments. Student enrolments across all campuses were up by 11% (to 34,494) for the period July 2020 to June 2021; distance learning students grew by 15% (to 28,573 students) while contact learning students declined by 6% (to 5,921 students) (Business Tech 2021). There is also positive investment sentiment for the group (Business Day 2020), and in September 2021, it completed the first phase of its Centurion Campus, which is set to open for students in 2022 (Business Tech 2021).

[8] Boughey, C, personal correspondence (30 August 2021) relating to the Strengthening Postgraduate Supervision course offered at universities across the country, and claims made by supervisors in PhD review processes done as part of the recent national review of PhD programmes.

The normalisation of the digital delivery of education by higher education institutions across South Africa may also bring about change in the delivery of higher education learning programmes. More higher education institutions will be able to offer qualifications to professionals and others who are more comfortable and familiar with virtual modes of engagement. This development could create additional revenue for higher education institutions and might also threaten, to some extent, the enrolments of South Africa's large distance education institution, the University of South Africa (Unisa). Unfortunately for Unisa, this would be coming on the heels of the attempted intervention by government to curtail its enrolment. Unisa was required to "reduce its 2021 first time entering students by 20 000 to accommodate the over-enrolment in 2020" (Kahla 2021). The directive from the DHET was eventually overturned by the North Gauteng High Court. By mid-April 2021, 20 000 first-year students were still waiting to be enrolled (Ndlovu 2021).

Data for May 2021 sourced from the South African Chamber of Commerce and Industry (SACCI) show that business confidence in South Africa was at a three-year high (SACCI 2021). The RMB/BER Business Confidence Index in South Africa also rose to well above pre-pandemic levels, reaching the highest reading since the last quarter of 2014 (Naidoo 2021). In other words, businesses are equally, if not more, confident in the current pandemic-restricted economy than they were pre-Covid-19. Positivity is mainly ascribed to stronger exports and high prices for commodities. But constrained retail sales, slower credit extension, uncertain electricity supply and fewer plans for new buildings are negatively impacting the business climate. While the indices show recovery when comparing the pre-Covid-19 period to the current and future, such recovery should be understood against a backdrop of a constant decline in business confidence from 2006 onwards, according to the SACCI Index.

While high unemployment, a slowly recovering economy and positive sentiment in the business and private higher education sectors may all bode well for an increase in the demand for higher education, the extent to which enrolments match demand will depend on the affordability of higher education. According to recent South African Reserve Bank (2021) report, South Africans spend three-quarters of their income servicing debt. Debt to disposable income for South African households has increased from less than 60% before 1994 to the current level of around 75%, which is higher than the long-term average of 70%, according to the South African Reserve Bank (SARB). South Africa has a relatively well-developed financial system which provides households with access to credit. While this supports economic growth, overextension by households can have unintended negative consequences. Furthermore, various research reports indicate that South Africa's household savings have been declining over the years and are one of the lowest in developing economies (BusinessTech 2021). SARB and Statistics South Africa (Stats SA data) show that even though disposable incomes have been increasing, the ratio of household savings to disposable income has been negative. Ultimately, this results in additional reliance on government for social welfare (BusinessTech 2021). If, as predicted (Arndt *et al*. 2020), the middle class is hardest hit by the pandemic, this spells difficulty in terms of their ability to afford higher education as they are neither shielded against the impact by the capital-income protection available to the upper class, nor does the middle class qualify for government support that is provided to the indigent in society. The over-reliance on credit and a poor saving culture do not bode

well in terms of South African households being able to pay for higher education fees. This situation brings into focus increasing pressure on the National Student Financial Aid Scheme (NSFAS) to support the demand for higher education.

On 21 February 2021, NSFAS released a media statement stating that the scheme had "received an unprecedented number of applications in comparison to previous years" (NSFAS 2021a). On 20 July 2021, NSFAS released a funding status report which details the number of students funded for the 2021 academic year. NSFAS revealed that 1 286 867 students are eligible for funding in the 2021 funding cycle, including 939 934 university and 346 933 TVET students (Macupe 2021; NSFAS 2021c: Table 1). As at the 23rd of June 2021, a total of 421 331 students (comprised of 295 380 new and 125 951 continuing university students) had received NSFAS funding. These figures represent an increase from 393 767 students in 2019 (pre-Covid-19) to Covid-affected 2021 NSFAS-supported university students (NSFAS 2021b). The data reveal a mixed picture. On the one hand, financial support for university students has not declined as a result of the Covid-19 pandemic. On the other hand, not all South Africans eligible to receive financial support to study at a university will secure a place at a university. The inability to secure a place is in part attributable to the limited absorptive capacity of the public higher education system.

The approved budget for the NSFAS for 2020/21 was R41.5 billion (which excludes R6.4billion of additional budget approved). NSFAS funding has increased more than five-fold from R5.9 billion in 2014 to R34.7 billion in 2020 (Nzimande 2021). But the biggest challenge faced by NSFAS and the students it supports is not funding, but poor administration. The scheme has been bedevilled by governance and administrative woes (Cloete and Van Schalkwyk 2021) and does not have a comprehensive system to facilitate interaction between the scheme, students and universities (Macupe 2021).

But perhaps the most worrying aspect of the relationship between NSFAS and university enrolments during Covid-19 and beyond lies at the intersection of the country's high unemployment rate, dire socio-economic conditions, and inadequate state social welfare system. The data presented in Figure 4 below indicate that between 2017 and 2020 the number of adult people in South Africa living in abject poverty almost doubled from 9 million to 16.6 million. During the same period, the middle-class population shrank by more than half from 3.5 million to 1.4 million adults. The upper middle class, with a monthly income of between R40 000 to R75 000 per head also shrank from 1.9 million to 800 000. All these trends highlight the fact that an increasing proportion of the population in South Africa is experiencing financial hardships. Thus, more and more households are becoming part of the bracket that can hardly afford paying high tuition fees for higher education.

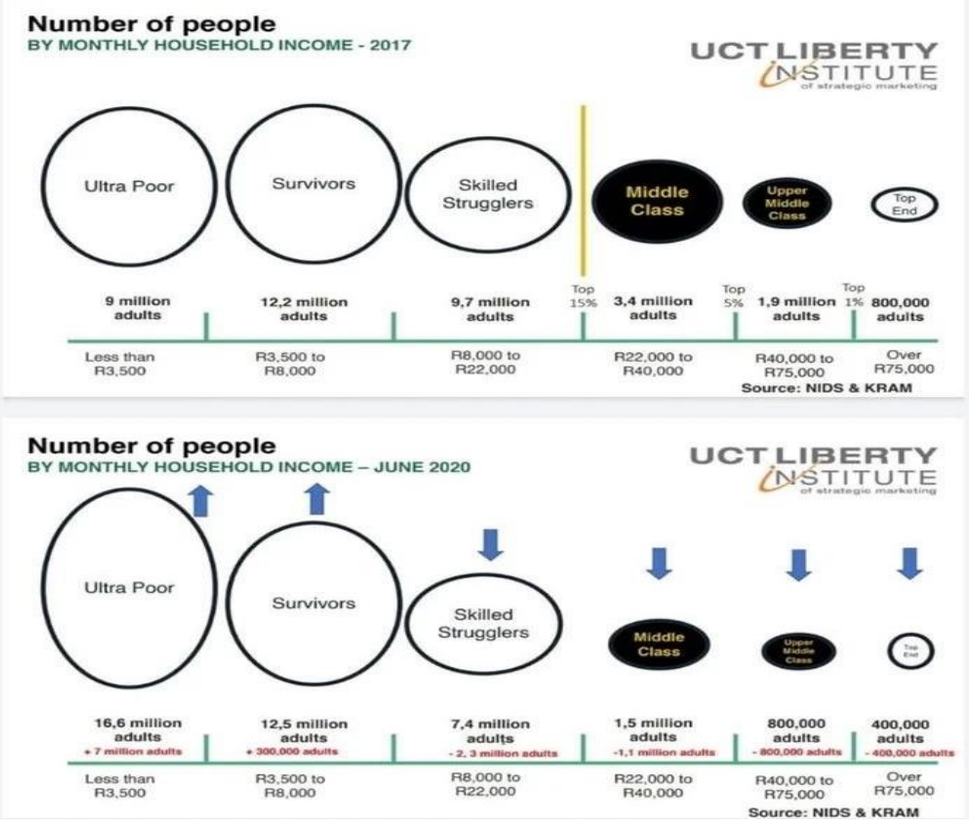


Figure 4: Changes in household incomes: 2017 to 2020
Source: National Income Dynamics Study (NIDS)- Coronavirus Rapid Mobile Survey (CRAM)

The NSFAS risks further entrenchment as a scheme that provides social welfare for youths from low-income households, rather than as a scheme to support educational attainment at tertiary level. An increase in anecdotal and other evidence of NSFAS-funded students supporting their families, and of poor through-put rates, provide worrying signs.

Based on the above snap-diagnosis of the future of enrolments at South African higher education institutions in the era of Covid-19, it would appear that demand for university places will increase as employment opportunities for school-leavers and the general unemployed decrease in a contracting or slowly recovering economy. Furthermore, the extent to which demand translates into university enrolments will depend on (a) the impact of a depressed national economy on households and their ability to afford higher education, (b) the absorptive capacity of public universities; and (c) the continued provision of student financing via NSFAS, including the provision of loan-scheme options for middle-income households (the so-called “missing middle”).

7.2 Funding

The prediction at a global level is that public funding of higher education will decline in the era of Covid-19. It is important to note that in South Africa, government funding of public higher education institutions over the ten-year period prior to the Covid-19 pandemic has constituted between 43% (in 2010) and 48% (in 2018) of the total funds received by the public higher education institutions. The actual percentages are reflected in Figure 5 below which also shows that student tuition fees have made up

between 30% (in 2010) and 35% (in 2019) of the total funds received by the public education institutions, while the 'third stream income' constituted between 27% (in 2010) and 19% (in 2019) of the total funds received by the public education institutions. It is clear that even before the Covid-19 pandemic, the contribution of 'third stream income' to the total funds received by public higher education institutions was already on the decline.

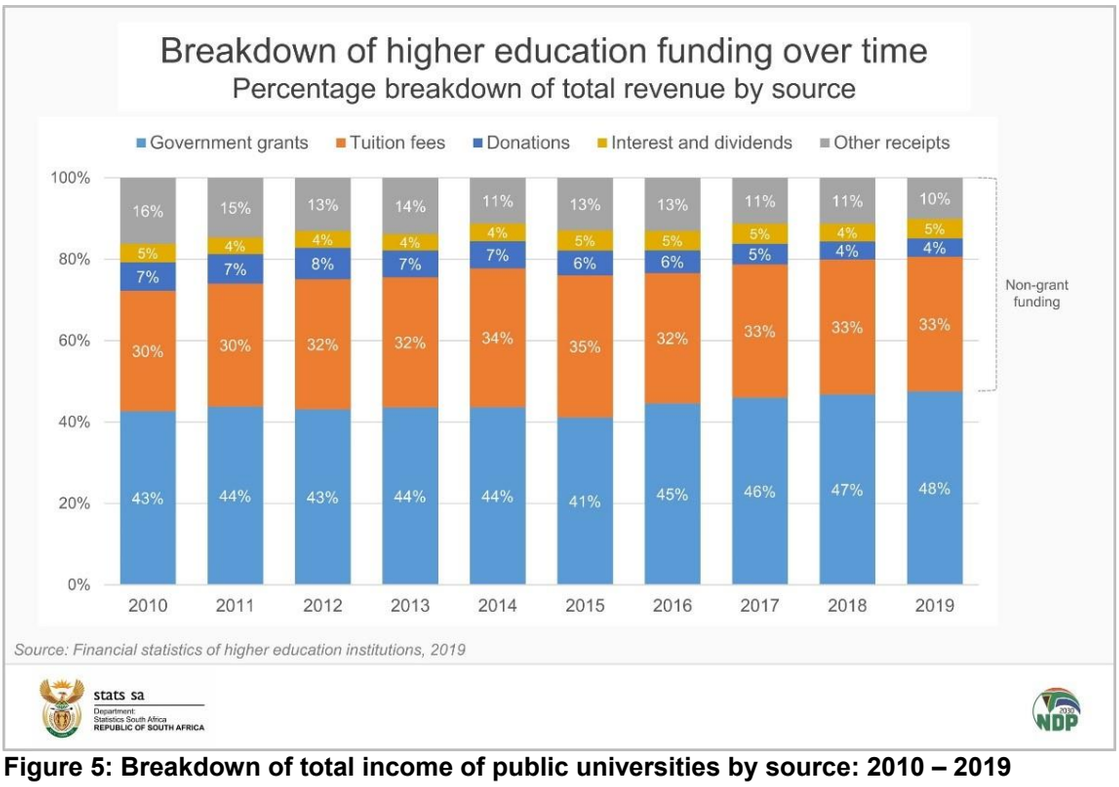


Figure 5: Breakdown of total income of public universities by source: 2010 – 2019

During the early stages of the Covid-19 pandemic the National Treasury indicated to the DHET that the Department would have to reduce its budget by 20% (R19 billion). The Department made a representation to the National Treasury demonstrating the adverse effects that such a significant budget cut would have on the higher education system, including on students. This input from the Department persuaded the National Treasury to effect a relatively smaller percentage cut of 8% (R9 billion) of the Department's budget. This saw the budget dropping from R116,857 billion to R107,000 billion. As a result of the budget cuts, the Department reduced its budgeted expenditure on infrastructure grants and operational subsidies (Mafolo 2020a; Naidu and Dell 2020).

On 14 July 2020 the Deputy Director-General for Universities reported to the Parliamentary Portfolio Committee on Higher Education, Science and Innovation that the net reduction in the block grant made to universities by the Department was R380 million, or 1% per university (Parliamentary Monitoring Group 2020). The DHET had looked at earmarked grants, such as the University Capacity Development Grant and interest earned on grants, as areas where funds could be reprioritised to support institutions. She reported that universities were saving money by cutting expenses and not filling vacancies. The lockdown had also produced savings in, for example, utility bills. She contended that the R500 million cut to the university infrastructure grant was significant, and its effect would be to

delay the completion of projects. Furthermore, while the establishment of the new University of Science and Innovation would not be halted, it would also be delayed because of the budgetary constraints (ParliamentaryMonitoring Group 2020).

In his 2021/22 budget speech, the then Finance Minister, Tito Mboweni, made minimal reference to education broadly or higher education in particular. He stated that "[G]overnment remains committed to ensuring that deserving students are supported through higher education. The National Treasury is working with the Department of Higher Education and Training on policy and funding options that will be detailed in the MTBPS" (Mboweni 2021). DHET's budget for the 2021/22 financial year was R116 billion, an increase of 1.4% on the previous year (Nzimande 2021).

According to a DHET report published in March 2021 (Khuluvhe and Netshifhefhe 2021), post-school education and training (or PSET, which includes higher education) as a percentage of GDP is expected to grow by 0.5 percentage points from 1.5% in 2017/18 to 2.0% in 2023/24. However, spending on PSET as a percentage of GDP is expected to decline from 2.2% in 2021/22 to 2.0% in 2023/24 due to low economic growth (Arndt *et al*. 2020). Spending on PSET as a proportion of all government expenditure is projected to increase by 2.1 percentage points from 4.9% in 2017/18 to 7.0% in 2023/24. The report also shows that as a percentage of government expenditure on all education sectors, higher education spending showed an increase of 6.8 percentage points from 11.5% in 2010/11 to 18.3% in 2019/20. The biggest increase occurred in 2017/18 and this can be attributed to the increase in National Student Financial Aid Scheme allocations and DHET baseline funding in response to the #FeesMustFall campaign (Khuluvhe and Netshifhefhe 2021). The funding of universities and the provision of support for university students is likely to remain politically sensitive, perhaps even more so as the economic effects of the pandemic take hold.

At the same time, government's commitment to increasing NSFAS funding could erode subsidy to higher education. The block grant increase for the 2022/23 financial year is projected at 4.6%, but this may not materialise given the economic situation and the high possibility that funds will be diverted to the NSFAS. There are concerns about whether ear-marked grant-funding from government to universities may, for example, be at risk.

These government funding data and projections paint a relatively stable financial picture for the public higher education sector, although it remains unclear at this stage the extent to which further economic shocks from additional lockdowns and other restrictions may impact on these forecasts (Arndt *et al*. 2020).

Institutional revenues from other sources, including student fees, research contracts, bequests and donations, and other 'third stream' (non-grant) sources are difficult to predict without access to granular financial data for each university. What is known is that across the public university system, government grants as a percentage of total revenue increased from 43% in 2010 to 48% in 2019 thus indicating a decreasing trend in non-grant funding (Stats SA 2021). For non-grant funding, the decrease is mainly

attributable to a decline in donations and other receipts, offset slightly by a 3% increase in tuition fees between 2010 and 2019 (Stats SA 2021). Khuluvhe and Netshifhefhe (2021: Figure 13) paint a slightly different picture showing dependency on government grant revenue remaining relatively constant over time and a 4% increase in student fee income. They concur, however, that there has been a decrease in third stream income between 2010 and 2019.

As indicated above, it is unlikely that enrolments will decline in the long term, in the era of Covid-19, and this should offer some protection to student fee income, although some institutions may face cash-flow issues as dependency on the NSFAS increases and if the NSFAS's administrative woes persist (Shoba 2021). Whether continued inflation-related adjustments to student fees will be possible remains to be seen. Equally unclear is the likely impact on income from student accommodation in the 2023 academic year and beyond. Much will depend on the extent to which vaccinations and Covid-19 virus variants impact on contact teaching, on students' inclination to return to campuses full-time, and on the requirements for in-person attendance set by universities. If there is to be an impact on third-stream income, it will affect North-West University, University of Pretoria, Nelson Mandela University, Stellenbosch University, University of the Witwatersrand and the University of Cape Town the most – these universities derived more than 20% of the revenue from sources other than government grants or tuition fees (Stats SA 2021).

According to Hedding *et al*. (2021: 2), the "South African government has pledged billions of rands to kickstart the economy during and after Covid-19 and this itself may have severe implications for how much funding will be channelled into academia and research. If Covid-19 has any lessons, it is the importance of research across various spheres (natural and social sciences, economics, medicine, …)." Close to six months into the pandemic, the NRF's deputy chief executive officer responsible for research and innovation support and advancement was quoted as saying that "[G]iven the unprecedented impact of Covid-19 and the significant budget cuts to public research funding agencies, we are challenged to redefine how research is best supported" (Van der Merwe 2020).

In terms of research funding in the era of Covid-19, there were early reports of anticipated cuts totalling R295.4 million to science bodies (Naidu and Dell 2020). The cuts included R96.6 million from the budget of the National Research Foundation (NRF), the national science funding body. This translated into a 19% decrease in the allocation for established research grants, a 29% reduction in the allocation for early and emerging career grants, a 13% cut in the allocation for the South African Research Chairs Initiative, and a 32% cut for South African Centres of Excellence. The NRF indicated that it would apply a percentage cut to all centres of excellence and Research Chairs. This is likely to affect adversely postgraduate and PhD education and has raised concern about the country meeting its research and development targets (Naidu and Dell 2020; Wangenge-Ouma and Kupe 2020).

Most of the NRF's funding (72%) is from the Department of Science and Innovation, which comes with "predetermined tasks" and is relatively inflexible. The remaining budget of the NRF budget comes from its parliamentary grant, which decreased by 1.8% in real terms in the latest financial year (Van der Merwe 2021).

In June 2021, the NRF indicated at a parliamentary committee briefing that postgraduate student bursaries and research grant funding would be negatively impacted (Parliamentary Monitoring Group 2021). Following the briefing, an NRF spokesperson confirmed that 5 554 students who were eligible for funding could not be awarded bursaries because of budgetary constraints (Govender 2021). The NRF defended its position by insisting that although fewer postgraduate students were funded, the manner in which the NRF funded students had been improved and that this would, in turn, result in enhanced success rates as well as improvements in the quality of postgraduates produced (Govender 2021).

Much of the country's research activity is supported at the national level by the Department of Science and Innovation (DSI) and through its various agencies. The DSI's total budget for the 2021/22 financial year is R8.9 billion (Nzimande 2021b). The recipients of the largest budget appropriations, the NRF and the Council for Scientific and Industrial Research (CSIR) both indicated that there would be a decline in scientific activity as a result of Covid-19-related budget cuts (Parliamentary Monitoring Group 2021).

From the above, it seems clear that government funding for undergraduate students via the NSFAS scheme and annual block grants to universities will not be affected adversely by the Covid-19 pandemic. This will provide some cushioning to universities. However, universities are likely to find it more difficult to secure research contracts in a depressed national economy and will not be able to rely on research funding from the national government to the same degree as pre-Covid-19. Some will regard this as highly problematic given the contribution of the country's universities to the scientific endeavours to counter the pandemic (see, for example, Drennan and Bawa in Govender 2021; Hedding *et al*. 2021; Parliamentary Monitoring Group 2021). Nevertheless, universities will most likely have to look further afield for research funding; from funding sources less impacted by the pandemic (for example, the large philanthropic organisations), and in countries that have either recovered more rapidly from the pandemic or whose economies have been less affected in relative terms. Where funding is available from the NRF, this funding is likely to prioritise impact and relevance. There may also be greater funding emphasis on open science on the back of the scientific advances made during the pandemic based on more open approaches to data sharing and the publication of findings on preprint servers and in open access journals.

7.3 Hybrid or blended teaching and learning

The prediction at a global level is that hybrid or blended teaching and learning will become institutionalised in the long term, in the era of Covid-19. A wider variety of channels for teaching, learning and assessment, especially in the form of online and distance teaching and learning methods, will be used by higher education institutions. The prediction is generally along the lines that virtual or digital teaching methods will not replace traditional methods but that hybrid methods will supplement or

support traditional face-to-face teaching, learning and assessment methods. As result, higher education institutions will need to devote more time, effort and budget to academic development activities, including development activities focused on academic staff, administrative staff and students, to master new technology and digital skills in their teaching, research, administrative and learning activities.
Most commentators are quick to draw a distinction between emergency online teaching and learning precipitated by the pandemic, and ongoing research, experimentation and implementation of digital teaching and learning predating the pandemic. In this section, the focus is on the former rather than the latter, even if it is not always made explicit that the form of delivery is of an emergency nature.

The analysis of predictions in *University World News* related to the impact of digital technologies more broadly and of the institutionalisation of hybrid delivery modes of teaching, learning and assessment more specifically. Most predicted a positive impact in the form of innovative modes of learning, improved spaces for learning and a broadening of (remote) access to higher education. But there were almost in equal number those who saw new technologies making little difference to the student experience; and those who predicted that hype-driven uptake of new technologies masks the exclusion of those students who lack reliable internet access. The exclusionary effects of hybrid teaching and learning, and of the pandemic in general, on higher education, is discussed in greater detail under section 7.4 below.

In South Africa, in the early phases of lockdown, most universities switched to emergency online teaching, learning and assessment. Institutions responded independently, each leveraging what investments it had already made in online platforms, while exploring new solutions where gaps emerged. Six weeks after lockdown, on 6 May 2020, 12 out of 22 contact universities surveyed had commenced online instruction; two planned to commence online teaching on 1 June 2020, while one university had chosen to proceed with teaching those students with access to devices and data, and to accommodate the remaining students in intensive face-to-face instruction when campuses reopened (USAf 2020b).

As the Covid-19 pandemic has progressed, and as the country has moved through various levels of lockdown, universities have responded independently within the directives and frameworks issued by the DHET to put in place on-campus measures and restrictions to manage teaching, learning and assessment. Some universities took the decision that all instruction and assessment would be virtual for the full 2021 academic year; others reopened campuses as the lockdown restrictions permitted. Unlike in the United States of America (Hubler and Hartocollis 2020), South African university campuses have at no point during the pandemic become Covid-19 hotspots.

Perhaps somewhat unexpected were reports that students were performing better in online-only learning environments (Ngqakamba 2020; Phakeng *et al*. 2020). This led to calls to be more attuned to how university students' capabilities are assessed (Phakeng *et al*. 2020).

What is not necessarily disclosed by universities and provides crucial context in which to interpret improved performance, are the assessment adjustments and concessions made during the pandemic. Furthermore, research in developing country contexts shows that much pedagogy is collectivised, blocking the necessary individualisation of learning (that is, becoming an autonomous learner) that collectivism prohibits (Hoadley 2017). Online learning has the potential to 'de-collectivise' learning – slower students can vary their own pace of learning (for example, reread sources, listen to a lecturer's input and discussion again, ask clarificatory questions to the tutor online, and take the requisite time to master material before having to move on). The result is that students in the middle band can improve immeasurably, while the lower bands, who probably fell behind long ago, will not improve. In other words, hybrid pedagogies can boost the middling students, improve the overall pass rate, but will do little for the bottom end.

The above notwithstanding, it remains unclear at this stage whether lecturers at contact universities in South Africa perceive the same level of benefits from online instruction and assessment, especially in the case of certain disciplines and learning contexts (for example, postgraduate supervision). Whether the 'benefits' are interpreted in terms of efficiency or effectiveness also remains to be seen. The possibility exists that university management will place greater value on the former while academic staff may express concerns over the long-term effectiveness (or quality) of a wholesale shift to online teaching and learning. Any adoption of hybrid or blended learning will also need to take account of the capacities of university IT staff and academics to use fast-changing technologies effectively for educational purposes.

Perhaps one of the most persistent challenges for academic staff relates to what Trowler and Cooper (2002) term 'regimes of teaching and learning', that is, a 'constellation of rules, assumptions, practices and relationships related to teaching and learning issues in higher education'. As indicated above, universities provided varying levels of support to academics as they faced the need to move their teaching online. In many cases, this support was minimal, and academics did what was necessary to provide an 'emergency response'. An unacknowledged risk in the delivery of online education is a preference for forms of interaction that are familiar, and which form the fabric of everyday social interaction. For example, using WhatsApp in preference to the university's learning management system. The danger is that these 'emergency responses' drawing on existing social preferences become entrenched and that any attempt to incorporate online learning in a well-designed, blended approach using a range of online tools post-pandemic will face what have effectively become 'regimes' which would need to be deconstructed to allow for more productive approaches to online learning to emerge.

As indicated earlier, the extent to which online learning is a viable option in the South African context in the long term in the era of Covid-19 remains uncertain, as is the extent to which online learning will be blended with more traditional modes. Any future integration of online learning as complementary to contact instruction will require substantial investment in skills and digital communication infrastructure to ensure equal access and benefits from online learning. Whether government funding will be made

available for such investments in a tight fiscal climate seems unlikely. What seems more likely is that those universities with the capacity and resources to exploit the benefits of online learning that have become apparent during the pandemic will do so, while the remainder will resort to traditional teaching methods, thus exacerbating the inequality divide between universities.

At the time of writing, the Council on Higher Education (CHE), Universities South Africa (USAf) and the University of the Free State (UFS) were administering the Staff Experience of, and Perspectives on Teaching and Learning and its Future (SEP-TLF) survey. Targeting lecturers and administrators at 24 participating institutions, the survey seeks to understand the experiences of these groups during the pandemic to inform the future direction of teaching and learning for the sector.[9]

The SEP-TLF study follows the Students' Access to, and Use of Learning Materials (SAULM) survey of 2020 (DHET 2020). Commissioned by the DHET, the SAULM survey explored how students were accessing and using learning materials during the pandemic. The SAULM study focused on students' experiences with regard to access to learning materials; access to devices, data and connectivity; engaging with educational technology; challenges of technology and learning; and benefits of technology and learning – paying particular attention to NSFAS-funded students.

Both the SEP-TLF and SAULM studies have implications for policy, as well as for providing an empirical basis for making further predictions about the state of hybrid teaching and learning in the long term. It is clear that universities still have much to learn about both the efficiencies and the effectiveness of new modes in the delivery of teaching, and in the assessment of university students. It is also evident that there is a risk of socially embedded technologies becoming institutionalised in the delivery of education at the expense of technologies and modes of delivery that have been shown to match or even improve on more traditional modes of instructional delivery.

Both challenges and opportunities are therefore apparent (Wangenge-Ouma and Kupe 2020; Salmi 2020), and it will take some time to establish which of the new approaches adopted during the pandemic are to be integrated into university teaching and learning. Particularly important will be the impact of the pandemic and new modes of educational delivery on attainment, that is, on the ability of all students to successfully complete their studies in a context of upheaval. For now, the general consensus in South Africa appears to be that teaching, learning and assessment will not return to business as usual in the long term, in the Covid-19 era. Instead, more blended or hybrid models of teaching and learning will prevail with a mix of both face-to-face and online modes of delivery and assessment (Walwyn 2020; Wangenge-Ouma and Kupe 2020).

[9] https://www.usaf.ac.za/understanding-the-experience-of-academic-leaders-and-staff-the-sep-tlf-survey/

7.4 Inclusiveness

The prediction at a global level is that in the era of Covid, higher education will become less inclusive as widening inequalities will manifest. In South Africa, as higher education institutions pivoted to emergency online teaching and learning with the closure of university campuses in the early phases of the lockdown, it soon became clear that some students either lacked computers or could not afford the data costs to access universities' online resources and teaching platforms (Czerniewicz *et al*. 2020; USAf 2020b).

At the national level, the NSFAS undertook to provide funded contact students with learning devices in the form of laptops. While some students in need received laptops from their universities (Vuk'uzenzele 2020), the provision of laptops by the NSFAS was dogged by delays in the tendering process (Mthethwa 2020; Ndaba 2020).

In response to the cost of data as a barrier to online learning for some students, cooperation agreements between government departments, namely the DHET and the Department of Communication and Digital Technologies, on the one hand, and mobile network providers, on the other, were entered into to make zero-rated websites available to students (Czerniewicz *et al*. 2020). This enabled students to access prescribed university websites and services as well as specified online learning resources without incurring any data costs.

A DHET survey conducted in 2020 found that around two-thirds of students surveyed purchased data bundles from service providers, while almost half (46%) accessed data through their institutions. Almost a quarter of students resorted to using hotspots from other devices, while 16% had Wi-Fi or fibre at home. The NSFAS students mainly accessed data by purchasing data bundles (65%) and almost half (48%) used institutional data. Only a quarter of the sample did not have to make a plan to access data (DHET 2020).

Salmi (2020) highlights the deepening systemic inequities in higher education globally and how the Covid-19 pandemic has laid bare these inequalities. He includes in his overview of the effects of the pandemic on higher education, the move to online learning and assessment and how this has led to additional challenges for students who lack affordable access to reliable internet service and devices. In the medium-term, Salmi predicts that "COVID-19 is likely to have negative effects on the learning outcomes, graduation rates, employability and job prospects of traditionally under-represented students" (Salmi 2020: 16). In the South African context, when asked about how South African universities are responding to Covid-19 compared with other universities across the globe, former Vice-Chancellor of the University of Witwatersrand, Adam Habib, responded by saying that "South African universities have similar problems to other institutions across the world. The big distinction with South Africa is that we are undertaking these activities in the midst of deep inequalities" (Phakeng *et al*. 2020, n.p.).

Alert to the fact that the pivot to online teaching, learning and assessment does not democratise the delivery of education, several surveys and studies have been undertaken to explore the issue of widening inequalities under conditions of emergency teaching and learning at South Africa's higher education institutions.

Early in the pandemic, Czerniewicz *et al*. (2020) provided a granular account of the challenges and benefits of online teaching and learning as it relates to inequalities in South African higher education. Drawing on input from fifteen university educational specialists, they foreground different types of inequalities – vital, resource and existential – showing how each manifest during the rapid and sometimes chaotic switch to emergency online teaching and learning. They also point to the need for 'networks of care' to respond with a greater sense of collegiality, or even humanity, to counter the new educational challenges that surfaced at South African universities during the pandemic, and also to counter a prevalent institutional culture of managerialism, corporatism and marketisation. Amidst reports of rising mental health problems experienced by students as a result of the pandemic (Andrew 2020), at least six South African universities with support from an American philanthropy formally recognised the need to offer academic and psychosocial support to students during the Covid-19 pandemic (Govender 2020).

A focus on care resonates with the position put forward by Boughey and McKenna (2021). They call for a distinctly social account of teaching and learning by contesting dominant approaches that regard students as 'decontextualised learners'. An approach, they argue, that has become more relevant in South African higher education following the outbreak of the pandemic. Recognising students as they are and not as 'ideal learners' in a globalised system is an important step towards what Boughey and McKenna (2021) identify as a 'developmental university' more suited to the South African context. The potential to draw on what has been acknowledged and learned during the pandemic in terms of rethinking the kind of institutions needed in South Africa would, however, need to be furthered by concerted efforts, including policy work and implementation.

A survey conducted in August 2020 reported that 46% of students faced challenges in completing assignments or participating in online learning due to a lack of access to computer equipment or data (Jordaan 2020). Elsewhere it was reported that all universities indicated that access to devices and internet connectivity were the main stumbling blocks in the delivery of online learning (USAf 2020b).

In the 2020 survey referred to earlier (DHET 2020) it was found that 96% of students owned a device such as a laptop or desktop computer, or a smartphone. Of those who owned devices, 89% stated that they owned smartphones, while around 60% own laptops. Comparing between NSFAS and non-NSFAS students, it was found that almost 20% fewer NSFAS students owned laptops compared to non-NSFAS students, and 90% indicated that the devices they owned were smartphones. Half (50%) of all respondents found that using smartphones for academic purposes was somewhat to very difficult.

In light of the results of the survey summarised above, it is therefore unsurprising that universities initially faced push-back from students who insisted that universities could not expect them to participate in online learning without providing the necessary resources (Molosankwe 2020). At the same time, some universities that adopted fully online learning and assessment reported higher pass rates than in previous years (Ngqakamba 2020; Phakeng *et al*. 2020). Nevertheless, students reported several benefits of technology-driven learning, including an appreciation for the convenience of asynchronous learning, saving time and money on transportation costs, developing a range of skills and knowledge about devices and educational technology, becoming more self-directed and independent learners, reporting increased and easier communication with lecturers and peers, and recognising the efforts lecturers and institutions put in to help save the academic year (DHET 2020).

The main drawbacks of the DHET (2020) survey are (1) that the respondents only represented approximately 5% of the national higher education population and (2) that as an online survey it was inherently biased towards collecting survey responses from those who already had access to a device and data.

Two observations emerge from the South African experience. The first is the realisation that as predicted by scholars (Gurstein 2011; Van Dijk and Hacker 2011; Van Schalkwyk and Canares 2020; Warschauer 2004), neither technology nor open resources necessarily lead to the anticipated effects of democratisation of higher education. Instead, in highly unequal societies (and university systems), an increase in the uptake of technology and open resources is more likely to exacerbate existing inequalities. The second observation is that the pandemic has made the invisible visible, that is, according to Czerniewicz *et al*. (2020: 949), the "crisis has made it impossible not to recognise the historical, geospatial, economic inequalities of the country and the world students live in."

Regardless of the availability of data and devices, the quality of what has been offered as 'online provision' during the pandemic is open to question. Boughey (2021) describes one response which involved a university paying a firm of consultants to scan and upload its 'study guides', previously only available in hard copy from the university bookshop, onto its learning management system. This caused the learning management system to crash. There are also reports of the extensive use of the voice-note function in WhatsApp as an alternative to lectures. In many cases, according to Boughey (2021) the move to online teaching and learning did not involve carefully designed and developed approaches. The outcome was rather an impoverished form of educational delivery offered under the auspices of 'emergency remote teaching'. Students sent home to contexts not supportive of academic learning require 'better' teaching than that they had been offered on campus. In many cases, what they were offered would appear to have been worse.

Boughey and McKenna (2021) argue that succeeding in higher education requires enormous shifts at the level of identity. It is not simply the case that a graduate of a university is the person who knows more. The graduate ideally should 'look at the world with different eyes', eyes which, at the very least, see the need for evidence to support claims, and which appreciate the value of theory as a means of seeing things which might not otherwise be seen. Work conducted using Legitimation Code Theory

(Maton 2012) identifies the 'dispositions' students need to develop in different knowledge fields. When students are on campus, the understanding of these 'dispositions' is facilitated by the ability to observe them being modelled by experts in a knowledge area. Learning is social and cultural, not only cognitive, and exposure to ways of behaving, thinking, speaking, reading, writing, valuing and so on (Gee 2008) is key.

This raises the following relevant question during the pandemic: If learning in higher education involves the development of dispositions and ways of being, how much can these be facilitated through online learning? The ability to observe, to interact and engage on campus is certainly more important to some students than others. Questions need to be asked about whether even the most well-designed online teaching can offer the kind of engagement that will allow students to develop into the types of graduates envisioned. Even more questions need to be asked about whether impoverished forms of 'emergency remote teaching' could ever achieve this.

7.5 Internationalisation and student mobility

The prediction at a global scale is that in the era of Covid-19, there will be less growth in the volume and intensity of internationalisation of higher education, and student mobility will stagnate. According to Huang (2020 n.p.), the impact of Covid-19 on the internationalisation of higher education "seems likely to be more profound than on any other aspect of higher education". It is therefore predicted that higher education institutions, especially those in countries heavily dependent on international student enrolments, will have to contend with a significant decline in international students.

According to Dennis (2020), preliminary research reveals that students are likely to study closer to home in the future. Also, according to a report published by QS (2020), prospective Asian students may increasingly investigate intraregional universities. At the same time, on 24 September 2020, a headline in *The Guardian* newspaper read "UK universities recruit record numbers of international students". And there are signs of a recovery in international students registering to study in the United States of America, although with variation between post- and undergraduate enrolments, as well by institutional type (research-oriented universities reported an increase, while community colleges reported a decrease in international applications). "Universities are prepping for a strong recovery in international education enrolment as they emerge from the pandemic," according to Mirka Martel and Julie Baer, authors of the survey report 'Preparing for the Future: The path forward for international education exchange' (O'Malley 2021).

At South African universities, at the undergraduate level, relatively few students are from outside of South Africa. Undergraduate students are predominantly South African, while the postgraduate student body consists of increasing number of foreign students. The number of non-South African postgraduate students increased from 15% in 2000 to 40% in 2017. Of the international students, 87.5% were from Africa (DHET 2019b). The most recent data (Van Schalkwyk *et al*. 2021) show that in 2019, 4 out of every 10 doctoral students enrolled in South African universities were international students, with 1 out of 3 being from the rest of the African continent. Over the past 20 years the percentage of doctoral

enrolments for African students from outside of South Africa has increased from 9% in 2000 to 34% in 2019. However, over the past four years, their proportion of enrolments has stabilised at around 34–35% of doctoral enrolments.

In terms of the African countries of origin, with the exception of Zimbabwe, the top four countries for doctoral enrolments in 2019 are not Southern African Development Community (SADC) members. And over the past eight years, there has been little change in the origin countries of African doctoral enrolments, with slight increases in the proportion of students from Zimbabwe, Nigeria and Ghana, and negligibly smaller contingents from Kenya, Tanzania, Uganda, Botswana and Malawi (Van Schalkwyk *et al*. 2021). This contradicts claims that South Africa receives most of its African students from SADC member countries, although it may well still hold true in the case of undergraduate student enrolments.

Knowledge migration, as the movement between universities as sites of knowledge, is a relationship between the students and scholars of different nation states. This is because the impetus for migrating is a factor of conditions in the host country, while the incentives put in place to encourage migration, post-graduate participation and the possibility of residency, are the prerogatives of the host nation. In other words, place matters because universities and the countries in which they are situated cannot be separated from the prevailing conditions (Mamdani 2019).

This perspective supports the conceptualisation of contextually determined push and pull dynamics in determining whether students and scholars elect to migrate to countries other than their own for the purposes of education (Altbach 2004). The relative conditions in historically dominant higher education destinations across the world is highly pertinent as those conditions may influence the choice of students seeking to study abroad. In particular, new destinations may emerge as preferable based on their management of the pandemic, on shifting geopolitics (for example, Chinese relations with the United States of America and Australia), as well as the incentives and support offered to international students as the pandemic subsides.

Khan and Oghenetega's (2021) pre-Covid study found that the high quality of academic programmes offered by South African universities, funding made available by South African universities and research funding agencies, and the availability of speciality programmes, were the three main reasons for students from Africa selecting South Africa as a study destination. At the same time, students from Africa face challenges that limit their mobility. Such challenges include the uneven application of study visa regulations and negative perceptions related to personal safety fuelled by outbreaks of xenophobic attacks and campus protests (Lee *et al*. 2018). Van Schalkwyk *et al*. (2021) argue that a changing policy landscape (particularly in relation to the funding of postgraduate students by the National Research Foundation) and bureaucratic impediments are likely to stifle the flow of students from Africa.

With predictions of regionalisation replacing internationalisation in the era of Covid-19, and the relative ease of intra-continental travel, the expectation is that the contribution of Africa to South Africa's postgraduate student enrolments is set to continue. Any decline in the numbers of students from Africa is more likely to be attributable to non-Covid-related factors.

7.6 Research

The prediction at a global level is that in the era of Covid-19, there will be cutbacks in research activities in fields that are not considered as essential and critical to human health and the economy. With the predicted reduction in funding for higher education, institutions and funding agencies will be very selective in terms of the research work to be prioritised for funding purposes. Before the pandemic, the performance of South Africa in research compared well to similar countries globally. South Africa's world ranking in terms of publication output has improved significantly since 2000. It ranked 33rd in 1996 and it improved to 35th in 2000 before further improvement to 29th in 2018. For most of the 2010s, the country's world ranking hovered in the mid to low 30s range (Crewe & Sinha 2021). Much of this impressive performance in research has been driven by research in higher education institutions which have seen the quantity of DHET-recognised scholarly publication units increase from about 6000 in 2005 to over 15 000 in 2018, as reflected in Figure 6 below. Two key factors that enabled higher education institution to make such impressive strides in research were availability of funding and capacity in the form of postgraduate students. In terms of funding, the research output subsidy programme of the DHET, the various funding instruments of the NRF, and other research grants from entities such the Water Research Commission and the National Institute for the Humanities and Social Science, resulted in the doubling of the Gross Domestic Expenditure in Research and Development (GERD) although the GERD-to-GDP ratio remained below 1%. It is also worth noting that research funding from the business sector has been declining over the last decade (Mouton *et al*. 2019).

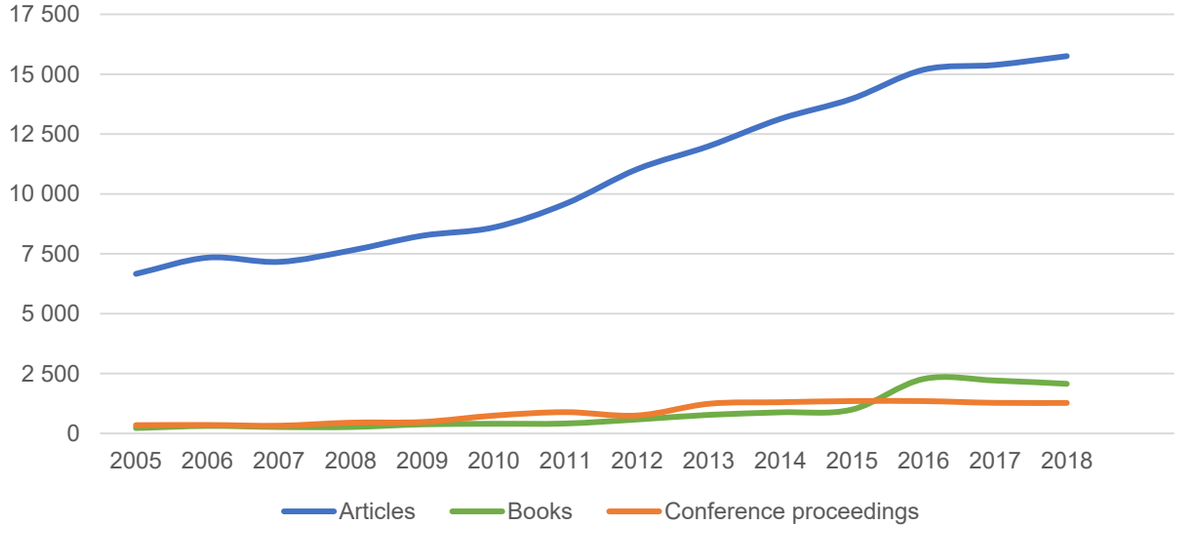


Figure 6: Research Publication Units for all South African Public Universities: 2005 - 2018

In the long term as the Covid-19 era grinds on, the fate of research in higher education would be influenced by the predicted reduced funding, stagnating student mobility and enrolments for research master's and doctoral degrees. Research is expected to be adversely affected by these developments if they happen, as predicted.

8. The role of institutional responsiveness

It is important to understand that the responsiveness of institutions to the Covid-19 pandemic will determine the extent to which the predictions on enrolments, funding, teaching and learning, inclusiveness, internationalisation and student mobility, and research will effectively pan out in the in the long term, in the era of Covid-19. The response of the South African government to the Covid-19 pandemic as it relates to the higher education sector, has been to provide higher education institutions with guidelines, frameworks and directives on measures to undertake to respond to and manage the crisis. In other words, government has left higher education institutions to their own devices within the bounds of the frameworks and guidelines provided. This approach has certain advantages as it allows for context-appropriate responses; responses that account for specific student and staff needs, as well as the resources, capacities and local support systems available to each higher education institution.
The potential downside to this approach is that strong institutions will cope better than weak institutions. Rather than a uniform, coordinated and effective response across all institutions, there is a risk that the response to and management of the crisis is therefore unequal and exclusively to the benefit of selected students and staff in the higher education system. This needs to be considered when planning interventions to address future external threats or pressures because the danger of entrenching and/or worsening inequalities needs to be eliminated from future responses to crises.

Van Schalwyk (2021) analysed institutional responsiveness to external pressures using a typology developed by Oliver (1991). This typology has five possible organisational responses to institutional pressures, ranging from more passive to more active strategic responses; and ten antecedent conditions that are likely to predict the type of organisational responses. As reflected in Table 9 below, assessing the degree to which each antecedent condition manifests (low, moderate, high) –its predictive factor – allows for a prediction of the likely strategic response by an organisation or institution.

Table 9: Institutional antecedents and predicted strategic responses

Predictive factor	Strategic response				
	Acquiesce	*Compromise*	*Avoid*	*Defy*	*Manipulate*
Cause					
Legitimacy	**High**	Low	Low	Low	Low
Efficiency	High	Low	Low	Low	Low
Constituents					
Multiplicity	**Low**	High	High	High	High
Dependence	**High**	**High**	Moderate	Low	Low
Content					
Consistency	**High**	Moderate	Moderate	Low	Low
Constraint	**Low**	Moderate	High	High	High
Control					
Coercion	**High**	Moderate	Moderate	Low	Low
Diffusion	**High**	**High**	Moderate	Low	Low
Context					
Uncertainty	**High**	**High**	**High**	Low	Low
Interconnectedness	**High**	**High**	Moderate	Low	Low

Source: Oliver (1991: 160).Bold text indicates the level of each predictive factor as observed in the case of South African public universities during the covid-19 pandemic.

More than two years into the Covid-19 pandemic, higher education institutions in South Africa have demonstrated that they have some resilience and are therefore able to withstand external threats or pressures. Each higher education institution as an organisation responded within the boundaries of its institutionalised norms and values. Using the predictive factors proposed by Oliver (1991), it is suggested that the predicted strategic response of acquiescence is consistent with the responses of higher education institutions in South Africa to the Covid-19 pandemic. Organisational or institutional acquiescence depends on the organisation's or institution's "conscious intent to conform, its degree of awareness of institutional processes, and its expectations that conformity will be self-serving to organisational interests" (Oliver 1991: 153).

The prevailing determinant condition supporting this strategic response of acquiescence is that of contextual uncertainty. In the face of a high degree of uncertainty, as Oliver predicts, organisations are most likely to acquiesce to external pressures. In the South Africa case, higher education institutions have responded to the Covid-19 pandemic by complying with exogenous pressures that emanate from the crisis. The returns to the higher education institutions for doing so are increased levels of social support as well as a more predictable environment by aligning their response with the restrictions imposed on the population as a whole (for example, campus closures) and continuing to deliver their societal functions despite the restrictions (for example, through online teaching; working from home) (Van Schalkwyk, 2021).

Other antecedent conditions and responses further support acquiescence as the type of strategic response observed. Reference has already been made to the fact that higher education institutions sought social legitimacy as they responded to protect the health and safety of students, staff and their families. The response to the pandemic was, in the early phases at least, highly unified across society

resulting in low levels of multiplicity.[10] The university's dependence on government for funding during normal operations, but also on additional funding in order to respond to the crisis, results in a high level of external dependence. Levels of coercion such as the declaration of a National State of Disaster and subsequent gazetted legislation, as well as levels of diffusion across universities as they grappled with new modes of delivery, have been high. At the same time, government allowed for a degree of discretion at the organisational level by allowing each university to devise its own strategy in dealing with the pandemic depending on each university's unique context. Finally, ongoing government consultations with universities and the universities association, Universities South Africa (USAf), provided some level of interconnectedness between universities as they grappled with how to respond to the crisis (Van Schalkwyk 2021).

Oliver's analytical heuristic is included in this publication to serve as a reminder that how higher education in South Africa responds to the pandemic and how it may or may not change subsequent to the pandemic, should be understood in terms of the pre-existing norms and values that constitute the social institutions that higher education institutions are. Complementary to this institutional perspective in understanding the behaviour of organisations, Oliver argues, are their dependencies on resources for their successful functioning. As illustrated above, what Oliver provides us with is a theoretically grounded device for predicting how universities as organisations may respond when faced with new and unprecedent crises such as the Covid-19 pandemic.

9. Conclusions and recommendations

There are different perspectives on the possible future of higher education in the era of Covid-19. The dominant perspective is that the Covid-19 pandemic is unlikely to bring about radical changes to higher education systems. Rather, it is only going to have the effect of bringing forward and expediting changes that had been mooted previously and were already in the future plans of some higher education institutions. Rather than panning out to be the great disrupter, as some had predicted, the Covid-19 pandemic has turned out to be a confirmer of both the strengths and the weakness of higher education systems. The predictions of the future of higher education in the era of Covid-19 as presented and discussed in this issue of *Higher Education Monitor* appear to confirm that there will be no radical shakeup of higher education. Instead, there will be accentuations of some of the issues that higher education has been grappling with for a while including the issues of enrolment planning, funding, inclusiveness and inequality, challenges of student mobility and internationalisation of higher education, and sustainability of high impact research. As Max Bergman (Bergman in Naidu 2021) asserted, while other past crises reshaped the future, the Covid-19 pandemic is just making the future happen faster.

[10] Legitimate questions could be asked about the origins of what constituted social legitimacy and led to a similar response across universities. For example, was sending students home to crowded conditions where social distancing was impossible really protective of their health? Did universities (and, to the same extent, government) not buy into global a discourse about lockdowns? As has become evident, a lockdown has been impossible to sustain in South Africa. 'Weak' versions of lockdown have been the norm ever since the first lockdown ended and government came to realise the negative effects of the restrictive measures on well-being.

The global Covid-19 pandemic has certainly exposed some cracks in some of the building blocks of higher education. But these are not new signs of decay, and they are not necessarily indicative of problems that cannot be repaired. In South Africa, the most glaring fissure is the higher education system's continued struggle to reduce social inequality without compromising its role of providing the quality of education, skills and knowledge required to build a better country for its citizens.

It is critical that the CHE and other key role players in higher education do not simply take note of the predictions of the future of higher education in the era of Covid-19 as presented and discussed in this publication, but should start developing and implementing contingency plans to address the effects of possible sharp increases in enrolment, reduction in fundings, entrenching and/or worsening inequality, stagnation in student mobility, and the risk of reversing some of important gains that the country has made over the last three decades in the field of research. Some of the recommendations in this regard are outlined below.

9.1 Recommendations to higher education institutions

It is recommended that higher education institutions should strive to retain and strengthen those networks of care within and between higher education institutions in South Africa that have developed during the pandemic. Higher education institutions responded with humanity, understanding and compassion to the pandemic once its full and ubiquitous impact became apparent. Institutions should reflect and learn from their humane responses to the pandemic in attempts to reintroduce a greater sense of collegiality and compassion into both the teaching and research efforts of university administrators, students and academic staff.

The recommendation above draws on Tronto's (1993:10) notion of an 'ethic of care' where 'care' is defined as "a species activity that includes everything that we do to maintain, continue, and repair our 'world' so that we can live in it as well as possible". Key to this definition is the idea of 'repairing' the world. Higher education institutions should ask themselves questions about whether or not the 'networks of care' that emerged during the pandemic succeeded in contributing to the 'repair' of the world. More thought needs to be given about the extent to which this 'care' contributed or indeed has the potential to contribute to a transformed order that has long been the goal for South African higher education.

9.2 Recommendations to the CHE

It is recommended that the CHE should assume and develop the role and responsibility of a trusted intermediary for the provision of reliable and timely data to higher education stakeholders, with due consideration given to the required capacity and social capital required to fulfil such a role. In this role, the CHE should publish granular data and relevant information on the impact of Covid-19 on higher education enrolments, graduates, funding, and other variables.

It also recommended that the CHE revise quality assurance frameworks and mechanism to take into account new forms of teaching and learning which may become institutionalised as a consequence of the pandemic. In other words, the CHE should include forms of teaching and learning beyond the traditional binary distinction between contact and distance education. This should be preceded by research on 'emergency online teaching', especially at poorly resourced universities which did not make a great deal of progress towards offering online learning before the pandemic. What has been reported by some better-resourced institutions (which are also more likely to be in a position to report) cannot be taken to be the norm across the system. A more rigorous investigation should be conducted into what exactly constituted the move to online teaching in different universities. This review would need to collect data on the forms that higher education institutions' responses took and would then need to connect the data to theory to analyse and critique the responses themselves.

9.3 Recommendations to the DHET

It is recommended to the Minister and the DHET that they should maintain an approach that enables higher education institutions to react relatively autonomously to crises but provide targeted financial and other support to universities based on a differentiated model and with due attention to accentuated inequalities.

They should also improve coordination with the DSI and NRF to ensure that the knowledge production function of universities is not undermined in the face of understandably more pressing teaching and learning priorities, particularly when new knowledge is needed most in relation to the management of crises and for the longer-term development of the country.

Furthermore, they should re-examine the timetable for the collection, verification and public release of HEMIS data, giving consideration to the possibility of staggered release for data available earlier in the reporting cycle (for example, undergraduate enrolment data).

Annexure A:
Additional data on prediction analysis (*University World News* articles)

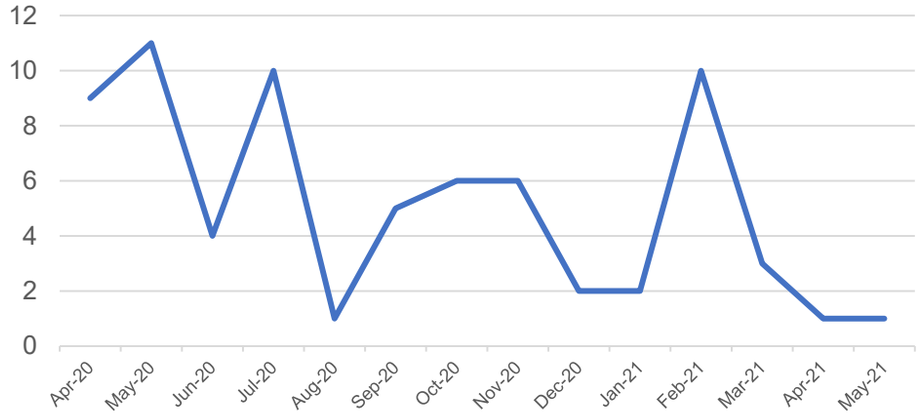


Figure A1: Number of articles including predictions from April 2020 to May 2021 (n=71)

Table A1: List of all prediction topics from *University World News* articles

Prediction
Academic staff
Access
Admissions
Attainment
Capacity-building
Closures and mergers
Collaboration
Credentialing and career pathways
Culture
Curriculum
Digitisation
Distance education
Elite institutions
Engagement
Enrolments
Environmental impact
Funding
Higher education system
Hybrid/blended teaching
Inclusion
Internationalisation
Mobility

Mode of instruction

Politicisation

Private universities

Public universities

Recruitment

Research

Space

Student affairs

University management

University rankings

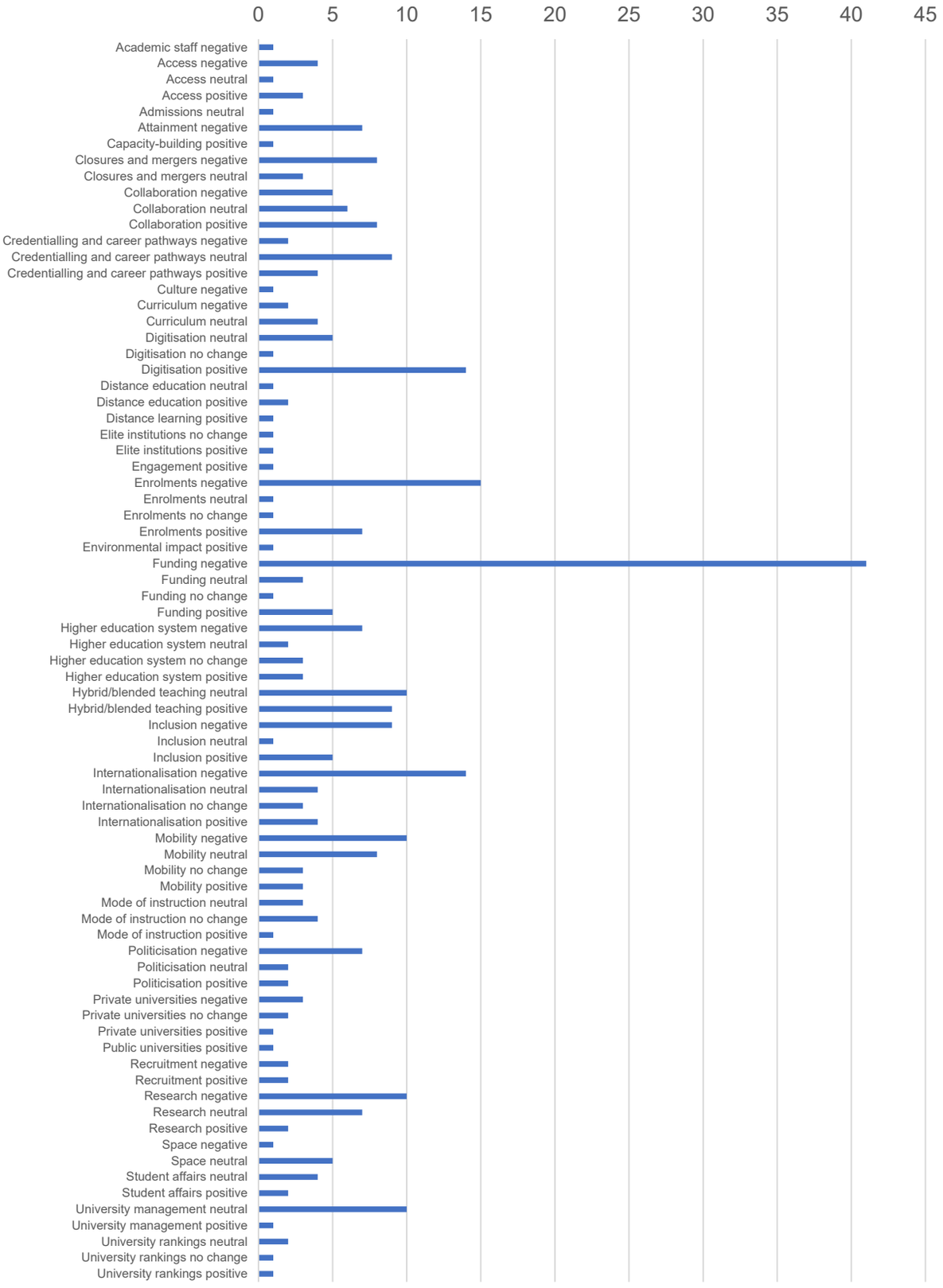


Figure A2: All predictions for higher education post-covid

Table A3: Alphabetised list of *University World News* articles coded (n=71)

Aarts H (2021, 13 March) Could COVID-19 improve North-South collaboration? *University World News*. https://www.universityworldnews.com/post.php?story=20210309080751719

Altbach PG & De Wit H (2020, 4 April) Post pandemic outlook for HE is bleakest for the poorest. *University World News*. https://www.universityworldnews.com/post.php?story=20200402152914362

Atherton G (2020, 4 April) Admissions and equity challenges for HE post COVID-19. *University World News*. https://www.universityworldnews.com/post.php?story=20200403132321996

Bayusuf H, Hammouda I, Vilakazi ZZ, Canavan CR & Fawzi WW (2021, 21 February) Reasons to be optimistic about Sub-Saharan HE after COVID. *University World News*. https://www.universityworldnews.com/post.php?story=20210216103536969

Belousova T (2020, 11 April) Internationalisation of Indian HE after COVID-19 crisis. *University World News*. https://www.universityworldnews.com/post.php?story=20200410080453873

Belousova T (2021, 6 February) Will India host more international students post-COVID? *University World News*. https://www.universityworldnews.com/post.php?story=20200410080453873

Benhayoun JE (2020, 4 July) The new global university in the post-COVID-19 world. *University World News*. https://www.universityworldnews.com/post.php?story=20200704092348232

Burquel N & Busch A (2020, 25 April) Lessons for international higher education post COVID-19. *University World News*. https://www.universityworldnews.com/post.php?story=20200704092348232

Capano G, Howlett M & Jarvis DSL. (2020) Mobilizing policy (in)capacity to fight COVID-19: Understanding variations in state responses. *Policy and Society* 39(3): 285–308. doi: 10.1080/14494035.2020.1787628

Chao R (2021, 20 February) A time for innovation in international HE post COVID-19. *University World News*. https://www.universityworldnews.com/post.php?story=20210218133901301

D'Amour Mbonyinshuti J (2020, 19 May) Private universities worry about losing students and staff. *University World News*. https://www.universityworldnews.com/post.php?story=20200519093256273

De Wit H (2021, 16 January) It's getting harder to predict the future of HE. *University World News*. https://www.universityworldnews.com/post.php?story=20210115105133419

DeLaquil T & Wang L (2021, 1 May) Undervaluing doctoral education post-COVID brings risks. *University World News*. https://www.universityworldnews.com/post.php?story=20210430131651833

Dennis M (2020, 25 April) COVID-19 will speed up fall in international enrolment. *University World News*. https://www.universityworldnews.com/post.php?story=20200420115723916

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Dennis M (2020, 19 September) What needs to change in the reimagined university? *University World News*. https://www.universityworldnews.com/post.php?story=20200918114611781

Dennis M (2020, 31 October) Learning should be lifelong, not end at graduation. *University World News*. https://www.universityworldnews.com/post.php?story=20201027103637927

Douglass JA (2020, 25 April) Higher education is key for the post-COVID recovery. *University World News*. https://www.universityworldnews.com/post.php?story=20200424084530242

Goh L (2021, 27 February) The future is now: imagining university life post-COVID. *University World News*. https://www.universityworldnews.com/post.php?story=20210224140632590

Hagenmeier C, Witthuhn C, Jooste N & Jacobs L (2020, 26 September) Quo vadis internationalisation in Southern Africa? *University World News*. https://www.universityworldnews.com/post.php?story=2021041614063392

Holmes R (2020, 25 July) How will the COVID-19 crisis affect the global rankings? *University World News*. https://www.universityworldnews.com/post.php?story=20200720134734809

Huang F (2020, 19 September) Keeping one step ahead of COVID-19's likely impact on HE. *University World News*. https://www.universityworldnews.com/post.php?story=20200918134321220

Hudzik JK (2020, 6 June) How to strengthen internationalisation post-COVID-19. *University World News*. https://www.universityworldnews.com/post.php?story=20200605072319401

Ivancheva M, Courtois A & Guzmán-Valenzuela C (2020, 7 November) Is the move online adding to casualisation of HE work? *University World News*. https://www.universityworldnews.com/post.php?story=20201104075521216

Jain E & Ruby A (2020, 25 July) Can India achieve its enrolment target post-pandemic? *University World News*. https://www.universityworldnews.com/post.php?story=20200725092411819

Johnson KAC (2020, 16 May) Brain gain down the drain, would force a longer recovery. *University World News*. https://www.universityworldnews.com/post.php?story=20200515073446592

Kakuchi S (2021, 10 March) Student dropout rate on the rise due to pandemic impact. *University World News*. https://www.universityworldnews.com/post.php?story=2021031006383627

Lane JE, Borgos J, Schueller J, Dey S, Kinser K & Zipf S (2021, 13 March) What is the future for international branch campuses? *University World News*. https://www.universityworldnews.com/post.php?story=2021031012405285

Leask B & Green W (2020, 2 May) Is the pandemic a watershed for internationalisation? *University World News*. https://www.universityworldnews.com/post.php?story=20200501141641136

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Li X & Haupt J (2021, 13 February) Could 'distance TNE' become a growth area after COVID-19? *University World News*. https://www.universityworldnews.com/post.php?story=20210210074621731

Ludeman RB, Kuh G, De Wit H, Fusch D & Tegtmeier C (2020, 12 September) The future of student affairs and services in higher education. *University World News*. https://www.universityworldnews.com/post.php?story=20200911113726791

MacGregor K (2020, 21 May) 'Magic happens' when problem-solving teams, partnerships align. *University World News*. https://www.universityworldnews.com/post.php?story=20200520160611491

Madichie NO (2020, 5 September) Why student accommodation matters more post COVID-19. *University World News*. https://www.universityworldnews.com/post.php?story=2020083115394798

Madichie NO (2021, 6 February) The case for making doctoral supervision collaborative. *University World News*. https://www.universityworldnews.com/post.php?story=20210202072719954

Melnyk D & Kontowski D (2020, 5 December) How do we make intellectual amends for COVID-19 learning? *University World News*. https://www.universityworldnews.com/post.php?story=20201204093709505

Mitchell N (2020, 26 June) What have we learned and how will HE change post COVID-19? *University World News*. https://www.universityworldnews.com/post.php?story=20200626100952531

Mitchell N (2020, 3 July) Ditch COVID-19 equaliser myth and Eurocentric curriculum. *University World News*. https://www.universityworldnews.com/post.php?story=20200703110244594

Mitchell N (2021, 16 April) Global HE can emerge stronger from COVID tsunami. *University World News*. https://www.universityworldnews.com/post.php?story=20210416095905347

Mutton A (2020, 2 December) Opportunities for international recruitment post-pandemic. *University World News*. https://www.universityworldnews.com/post.php?story=20201202134456579

Naidu E (2020, 6 April) After COVID-19 – 'Nothing will be same'. *University World News*. https://www.universityworldnews.com/post.php?story=20200406094611664

Newman J, Khalbous S & Van't Land H (2020, 31 October) Higher education is key to building back better post-COVID. *University World News*. https://www.universityworldnews.com/post.php?story=20201030093447 68

Nicol L (2020, 31 October) International recruitment – Is Canada facing a big squeeze? *University World News*. https://www.universityworldnews.com/post.php?story=20201028145737147

Noorashid N, Le Ha P, Alas Y & Yabit VM (2020, 10 October) Beyond the pandemic, integrating online learning. *University World News*. https://www.universityworldnews.com/post.php?story=20201009150047136

Ogden AC & Cope D (2020, 3 October) Is the US the next big market for outbound students? *University World News*. https://www.universityworldnews.com/post.php?story=20201002154520979

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Pillay M & Pillay AM (2021, 11 February) Time for new ideas on higher education provision. *University World News*. https://www.universityworldnews.com/post.php?story=20210211075131224

Ruwoko E (2020, 5 November) Balancing the books, creating sustainability beyond COVID-19. *University World News*. https://www.universityworldnews.com/post.php?story=20201103065349467

Scott P (2021, 9 January) Urgent questions on post-COVID university admissions. *University World News*. https://www.universityworldnews.com/post.php?story=20210105134723376

Sharma Y (2020, 20 May) China pivot towards Europe in HE, research ties expected. *University World News*. https://www.universityworldnews.com/post.php?story=20200520100218970

Sharma Y (2020, 11 November) Tokyo Convention parties want online learning recognised. *University World News*. https://www.universityworldnews.com/post.php?story=20201111082338118

Sharma Y (2021, 27 February) International dual and joint degrees to get green light. *University World News*. https://www.universityworldnews.com/post.php?story=20210226145106838

Sharpe R (2020, 11 July) Leading and learning through uncertainty. *University World News*. https://www.universityworldnews.com/post.php?story=20200708171028609

Sherwood D (2021, 27 February) Why universities will need to digitalise to survive. *University World News*. https://www.universityworldnews.com/post.php?story=20210222143002477

Sursock A (2020, 16 May) The vital role of civic engagement for universities. *University World News*. https://www.universityworldnews.com/post.php?story=20200515072822480

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Tamrat W (2020, 7 May) COVID-19 – Private higher education faces precarious future. *University World News*. https://www.universityworldnews.com/post.php?story=20200506081039701

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Tamrat W & Teferra D (2020, 9 April) COVID-19 poses a serious threat to higher education. *University World News*. https://www.universityworldnews.com/post.php?story=20200409103755715

Teferra D & Tamrat W (2020, 14 May) Defying the notion of ivory tower in aftermath of COVID-19. *University World News*. https://www.universityworldnews.com/post.php?story=20200511152721215

Torabian J (2020, 2 May) Can mobility and Erasmus+ be revitalised post crisis? *University World News*. https://www.universityworldnews.com/post.php?story=20200429102740760

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Van Rooijen M (2020, 4 July) Neither online nor on-campus: Against a binary approach. *University World News*. https://www.universityworldnews.com/post.php?story=20200703141825349

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Yang Y, Mittelmeier J, Lim MA & Lomer S (2020, 11 July) What agents say about the plans of Chinese students. *University World News*. https://www.universityworldnews.com/post.php?story=20200706105641710

Annexure B:
Additional economic data

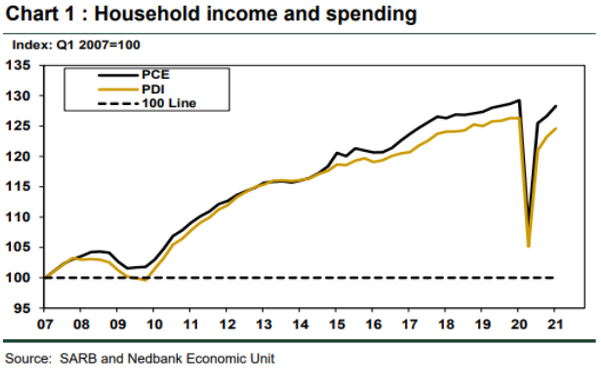


Figure B1: Household income and spending

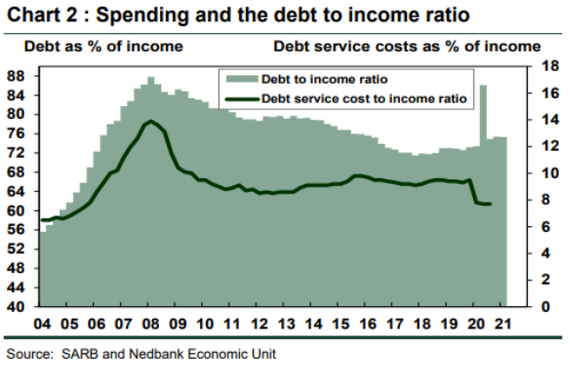
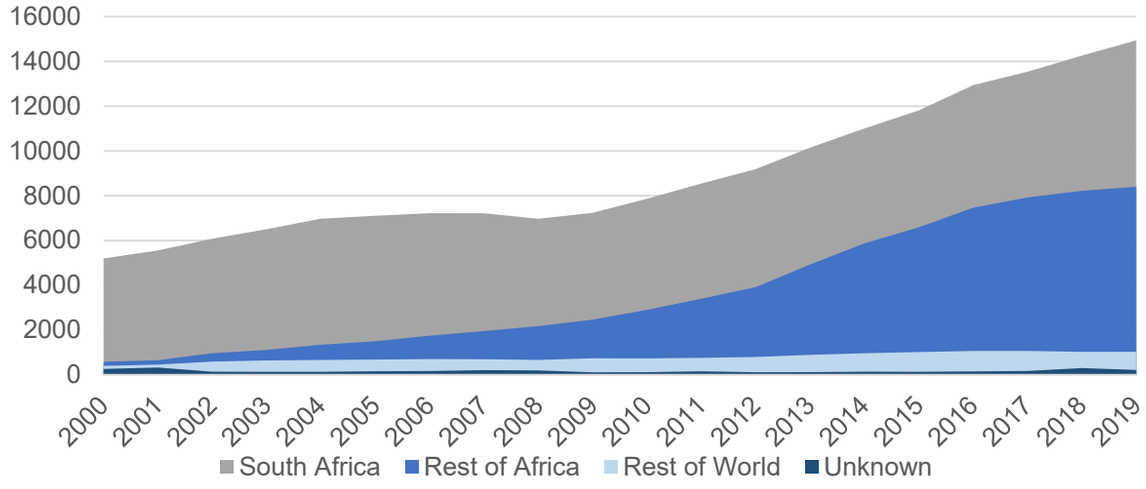


Figure B2: Spending and Debt to Income Ratio

Source: SACCI Business Confidence Report, 2021

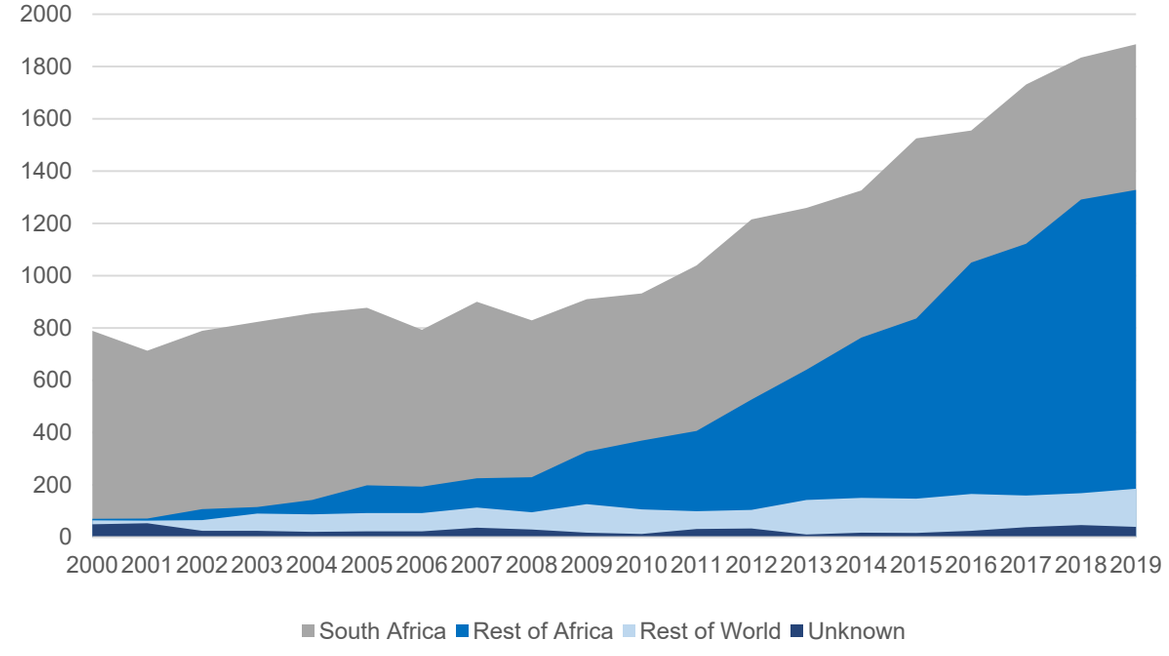
Figure B3: Business Confidence Index: January 2005 – January 2021

Annexure C:
Additional data on doctoral students by nationality



Source: DHET HEMIS micro data/ Van Schalkwyk et al. (2021)

Figure C1. PhD enrolments: Nationality of doctoral enrolments (n) (2000–2019)



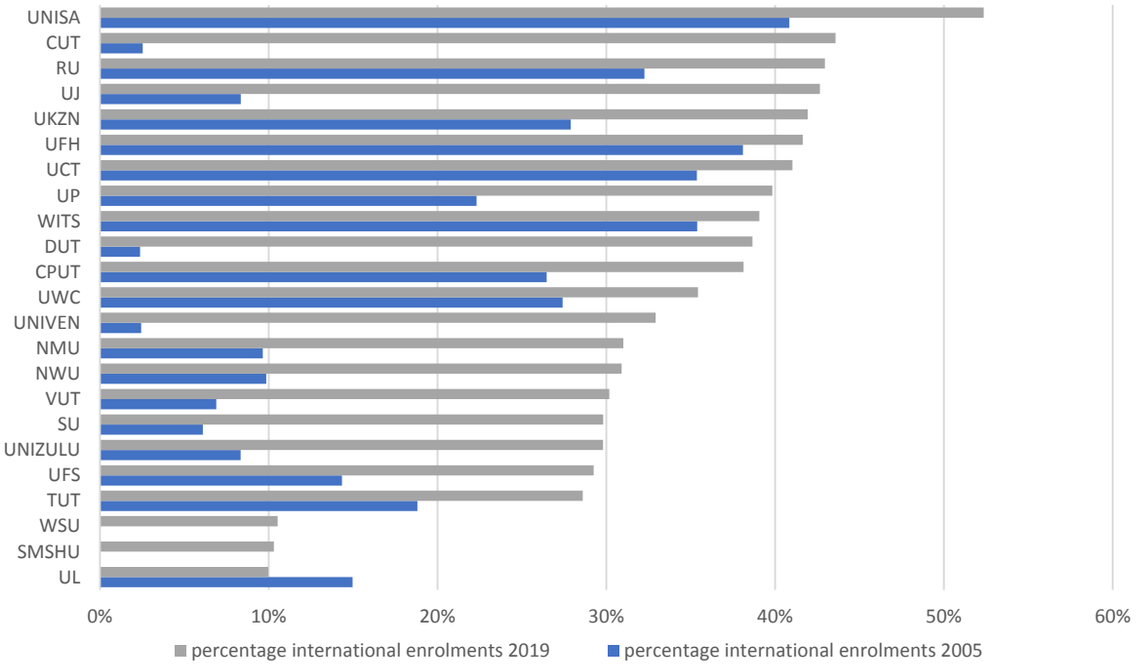
Source: DHET HEMIS micro data/ Van Schalkwyk et al. (2021)

Figure C2. PhD graduates: Nationality of doctoral graduates (2000–2019)

Table C2. PhD enrolments from the Rest of Africa by country of origin (2012 and 2019)*

Nationality	Percentage of total enrolments 2012	Percentage of total enrolments 2019	Proportional change
Zimbabwe**	7.1%	10.2%	3.2%
Nigeria	4.4%	7.1%	2.7%
Ghana	0.7%	2.4%	1.7%
Ethiopia	2.0%	2.0%	0.0%
Kenya	2.3%	1.8%	-0.6%
Zambia**	0.9%	1.1%	0.2%
Namibia**	0.7%	1.0%	0.3%
Lesotho**	0.9%	1.0%	0.1%
Uganda	1.2%	1.0%	-0.2%
Cameroon	0.8%	0.9%	0.1%
Eswatini**	0.5%	0.8%	0.3%
Botswana**	0.8%	0.7%	-0.1%
Malawi**	0.8%	0.7%	-0.1%
DRC**	0.6%	0.6%	0.0%
Tanzania**	0.8%	0.4%	-0.4%

** Enrolments from South Africa: 65.5% in 2012; 60.8% in 2019.*
*** SADC countries*
Source: DHET HEMIS micro data / Van Schalkwyk et al. (2021)



Source: DHET HEMIS micro data/ Van Schalkwyk et al. (2021)

Figure C3. Percentage of international PhD enrolments by South African university (2005 and 2019)

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