



COMMONWEALTH *of* LEARNING

Status of Distance Learning in South Africa

CONTEMPORARY DEVELOPMENTS
AND PROSPECTS

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The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies.

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Abbreviations

CET	community education and training
CHE	Council on Higher Education
COL	Commonwealth of Learning
CPD	continuous professional development
DBE	Department of Basic Education
DOE	Department of Education
DE	distance education
DHET	Department of Higher Education
FTE	full-time equivalent
FTEN	first time entering undergraduate enrolment
GHS	General Household Survey
HEI	higher education institution
ICT	information and communication technologies
ITU	International Telecommunication Union
IDI	ICT Development Index
LMS	learning management system
MOOC	massive open online course
NDP	National Development Plan
NEET	not in education, employment or training
NPPSET	National Plan for Post-School Education and Training
NQF	National Qualifications Framework
NSC	National Senior Certificate
NSF	National Skills Fund
NSFAS	National Student Financial Aid Scheme
OECD	Organisation for Economic Co-operation and Development
OER	open educational resources
ODL	open and distance learning
ODeL	open and distance e-learning
OER	open educational resources
PSET	post-school education and training
SA	South Africa
SAQA	South Africa Qualifications Authority

TPCK	Technological Pedagogical Content Knowledge
TVET	technical and vocational education and training
Unisa	University of South Africa
WebCT	web course tools
WIL	work-integrated learning
WPPSET	White Paper for Post-School Education and Training

Foreword

Covid-19 caused the closure of campuses, affecting more than 220 million higher education students worldwide. Most institutions had to pivot to emergency remote teaching. Many did not have adequate technology infrastructure. A study has revealed that even in the US and Canada, over 50% of teachers required help with supporting remote students, needed access to digital materials and wanted assistance with technology. Students also suffered in various ways — and half of them felt that their performance had declined. Many faced challenges relating to technology tools and connectivity, and most felt a negative impact on their psychological well-being. The vulnerable are most affected in crisis situations, and existing inequalities were further exacerbated. The pandemic has further deepened the learning crisis.

All of the above highlight the need for alternative and innovative ways of providing access and equity in higher education. The pandemic has forced the global community to embrace distance learning and online delivery. Historically, open distance learning (ODL) was adopted to address issues of access, using a range of technologies, including print, radio and TV. Countries that already had ODL systems in place were better able to respond to institutional closures during lockdown by providing existing distance learning materials and systematic learning support. COL's experience shows that ODL and technologies can be leveraged to increase access to quality education, skills development and lifelong learning at lower costs.

South Africa is a pioneer in distance education, with the University of South Africa (Unisa) being the oldest distance teaching university in the world and a model that many countries have adopted. Unisa started distance learning in 1946, during the apartheid years, offering education to a multi-racial student body. Alumni include Nelson Mandela, who turned to distance education during his long incarceration.

Status of Distance Learning in South Africa: Contemporary Developments and Prospects reviews current policy and practice in relation to issues of access, equity, quality and costs. This was done using a survey of ODL institutions, data from different institutions, and available studies conducted by COL. The report identifies innovations and best practices that institutions adopted as a response to the Covid-19 crisis. The objective of this report is to provide recommendations and concrete actions to enable policy makers and distance education leaders to transform the sector for national development.

In a post-pandemic world, where resources may be limited, the demand for distance and technology-enabled learning will continue. COL will provide support to develop enabling ODL policies, stronger systems, and enhanced human resource capacity for formal, non-formal and informal learning. The role of COL as an intergovernmental organisation established to promote distance education and technologies has become more important than ever before, and it will continue to invest in innovations to leave no one behind.

The importance of distance learning has become apparent to the global community. Distance learning has always been a “disruptive innovation” that can be harnessed to provide lifelong learning for all. As the future of learning is blended, the distinctions between distance and campus learning need to disappear. What matters are the competencies gained rather than the delivery mode. Finally, quality needs to be a priority, with the understanding that there can be no quality without equity and inclusion.

While the report focuses on distance learning in South Africa, it has wider relevance in the Commonwealth and beyond. I hope policy makers and practitioners will benefit from its insights and take full advantage of the recommendations, which can be adopted and adapted to different contexts.



Professor Asha Kanwar
President and CEO
Commonwealth of Learning

1. Executive Summary

AIMS

Shortly after the first cases of Covid-19 were declared in February 2020, South Africa was launched into a series of lockdowns requiring the closure of educational institutions. Emergency remote learning rapidly became the default mode of delivery as institutions endeavoured to ensure the continuation of teaching and learning, guided by the imperative “to save the academic year, to save lives and to leave no student behind.” This change accelerated the adoption of digital forms of learning across the education sector, and the widespread recognition that technology and open and distance learning (ODL) modalities, would play a significant role in the future of higher education in South Africa. It is these possibilities which this study undertook to explore.

Firstly, the study aimed to explore issues of access, quality, costs and equity across the South African institutions and to consider how ODL might affect these subsequent to the onset of the pandemic.

Secondly, the study examined responses to Covid-19 and innovations that were employed by universities in South Africa, highlighting challenges and opportunities. The latter part of the report thus considers the role of distance learning in South African public universities, their transition from contact to emergency remote learning, and the extent to which the mode of delivery had evolved by January 2022 — the time at which the survey was conducted.

UNESCO (2021) refers to the pandemic as the most severe “global education disruption in history,” as teaching and learning ground to a near halt with the closures of educational institutions, impacting more than 190 countries, 1.6 billion learners, 300 million higher education students and 100 million teachers and school personnel (UNESCO, 2021). The pandemic has caused much more than just a year or two of disruption in the education sector: its impact will have long-term and lasting effects on the most vulnerable and marginalised and has affected the modes of learning and teaching across the education sector, bringing about changes likely to be sustained beyond the pandemic.

Covid-19 has disrupted the traditional modes of delivery at all South African institutions, and the latter part of this study sets out to explore the ways in which the public higher education institutions adapted to the circumstances by relying on ODL methods, to gain an understanding of how this transition was experienced and the consequences for the future trajectory of South African universities. The study considers how changes in modalities might open possibilities for higher education institutions (HEIs) to utilise blended and hybrid ODL modalities.

METHODOLOGY

The study utilised a mixed-methods approach conducted in two phases.

The first phase undertook a desk review and analysis of the relevant literature from institutional websites as well as other available literature, from the Department of Higher Education and Training (DHET) and other government websites. The desk study also considered national and international studies that reviewed changes in the post-schooling sector after the onset of the pandemic.

The second phase entailed a questionnaire administered to the 26 public HEIs in South Africa and two technical and vocational education and training institutions engaged in ODL, and interviews were conducted with key stakeholders.

Deputy Vice Chancellors: Academic (or their delegates) driving the transitions in their institutions were surveyed. The sample was neither random nor weighted but is nonetheless important because of the highly specialised nature of the group that was invited to participate in the survey. The survey explored the respondents' views on the pre-Covid modes of teaching, changes in modalities after the onset of the pandemic, challenges experienced, and adaptations necessitated from the vantage point of lecturers and students. Respondents were also required to respond to “way forward” questions, which entailed an exploration of costing, lecturers' preferences, and the extent to which ODL was inclusive.

FINDINGS

While all institutions reported a somewhat precarious emergency shift to online teaching modalities, it was clear from the survey conducted in January–February 2022 that HEIs had transcended many of the challenges arising from the emergency nature of the transition to digitally supported learning.

The evidence presented suggests that by the end of the second year of the pandemic, there was a marked increase in digitisation in terms of infrastructure, content and connectivity and that extensive capacity building had already taken place. The respondents were consistent that despite the challenges, the shift to ODL had not compromised quality and that their institutions had not recorded changes in dropout, stopout and failure rates (although it is acknowledged that these statistics are yet to be audited by the DHET).

It was further reported that a new cohort of matriculants enrolling in HEIs subsequent to the onset of the pandemic experienced fewer challenges in transitioning to ODL, since most had already been exposed to online learning while completing their schooling during the previous year of the pandemic. The findings suggest that institutions are maturing into an ODL mode and that all are likely to retain some or most of the current practices as the new “normal,” with blended learning and hybrid learning being articulated as the modes of choice.

RECOMMENDATIONS

This report and the survey findings that inform it provide a unique insight into the contemporary development of and prospects for distance learning in South Africa.

The study concludes with a strong recommendation that the investments made, and the maturation of ODL modalities (as they were being institutionalised at the start of 2022), be capitalised upon.

The study recommends that the higher education sector take advantage of the affordances of ODL (as it has emerged) for adaptive learning and for increasing access for disadvantaged groups, including women and persons with disabilities. ODL has opened possibilities for delivering a more flexible curriculum, reducing the need for buildings and expensive infrastructure, lowering per capita costs and opening access possibilities for the growing numbers of youths seeking higher education. It is argued that being more affordable, ODL would enable South Africa to meet the human capacity development needs of the growing youthful population in South Africa.

Among the recommendations, the study draws attention to the need to ensure that technologies are widely available, accessible and affordable. It proposes national interventions to ensure students' access to the Internet and to optimal devices, further recommending that the custom/import duties on information and communication technologies be dropped to reduce the costs of devices for students.

With ICTs integrated into every aspect of the modern world, they are a crucial element of learning and of social and economic participation and empowerment. While the digital divide is more acute among students with disabilities, the study recommends the integration of technology that is universally accessible to ensure inclusive access with a focus on usability and affordability.

With a view to fast-tracking digital materials, it recommends that institutions harness the affordances of OER, which can be recontextualised for local contexts and thereby lowering development costs.

It was found that the rapid transition that took place now requires all HEI policies to be aligned with the new modalities. Moreover, to ensure the integrity of assessments, investments need to be made into proctoring, invigilation and similarity tools.

Moreover, with the increase in technology usage and the promulgation of the Personal Information Act in South Africa, the challenges of cyber security, data privacy and the safety of networked devices need to be considered and risks mitigated.

Several challenges raised by respondents pertained to the need to increase staff capacity to teach online and to enhance student capacity to learn in digitally supported environments. The report concludes by recommending all-round capacity development for all staff, including administrative and support employees. Flexible learning is about the entire institution being flexible, not just the teaching; hence, institution-wide capacity building needs to take place so that everyone knows what their new functions are.

It is expected that the findings and recommendations will offer insights into the impact of distance education policy and practices to enable HEIs and government to take concrete steps to build on the gains already made by the adoption of ODL modalities. Many of the recommendations specify roles that the Commonwealth of Learning might play in supporting institutions to reap the benefits of the transition.

2. Background of Study

2.1 Status of Higher Education in South Africa

2.1.1. Learning as a developmental imperative

One of the most critical economic challenges facing South Africa (like many countries in the developing world) is its high unemployment rates. Since the establishment of the Department of Higher Education (DHET) as separate from the Department of Basic Education in 2009, the country has pursued its vision of building a new and expanded post-school education and training system (PSET) that would be responsive to the national socio-economic needs for redress and offer solutions for tackling poverty and the unemployment crisis. Income generation is regarded as essential for addressing poverty and as a significant contributor to social stability. To achieve this, the DHET endeavours to improve participation rates, to correct distributions in the shape, size and access to post-school education and training; and improve quality and efficiency in the system, its subsystems and its institutions.¹

2.1.2. Policy frameworks

Over the past 20 years, policies, legislation and regulations have aimed to steer the higher education sector towards equity of access to quality education, through a suite of policies and strategies. In 2001, a National Plan for Higher Education (DoE, 2001) provided a framework to achieve the policy goals for the transformation of the higher education system as outlined in *Education White Paper 3: A Programme for the Transformation of the Higher Education System* (DoE, 1997). The National Plan aimed to ensure “institutional diversity through mission and programme differentiation based on the type and range of qualifications offered” (DoE, 2001, p. 54), according to the legal framework established in the Higher Education Act (1997).

Education White Paper 3 emphasised distance learning as a strategy for increasing access to higher education. This resulted in a sudden growth in distance learning programmes at contact institutions during these early years, often through partnerships between public and private providers, as well as partnership arrangements between local public institutions and universities abroad for offering joint or shared degree programmes (CHE, 2016a).

The *White Paper for Post-School Education and Training* (WPPSET) was released in 2013, followed by the *National Plan for Post-School Education and Training* (NPPSET), which aimed to “operationalise the vision and principles of the WPPSET and provide a blueprint for growing an effective and integrated PSET system” (DHET, 2019b), with both documents acknowledging the role of distance education.

The National Development Plan (NDP) (2012) offers a vision and plan to be achieved by 2030. The plan is undergirded by expanding higher education enrolments to 1.62 million by 2030, and it identifies the following three functions for higher education: a) educate and equip people with high-level skills to meet the employment needs of the public and private sectors; b) produce new knowledge and assess and find new applications for existing knowledge; and c) provide opportunities for social mobility while strengthening equity, social justice and democracy to deal with the injustices brought about by the post-apartheid system (DHET, 2021b: NDP 2013).

¹ See the DHET's overview at <https://nationalgovernment.co.za/units/view/17/departmentofhighereducationandtrainingdhet>.

2.1.3. Growing demand

The DHET (2021b) statistical report indicates that by 2019, the Post-School Education and Training system comprised 503 institutions: 26 public HEIs, 131 private HEIs, 50 technical and vocational education and training (TVET) colleges, an estimated 287 registered private colleges, and nine community education and training (CET) colleges.

The statistical report (DHET, 2021b) refers to the growth already made with the number of South Africans who had achieved secondary education as their “highest level of education attained” compared to a decade ago, pointing out that currently, 32.1% of adults have completed secondary schooling as their highest level of education attained. This gives an indication of the potential increase in the demand for PSET and the consequent need for a pronounced expansion of the PSET system.

As the report states, there has already been substantial growth in terms of access to both universities and TVET colleges, and it is therefore possible for universities to meet the National Development Plan enrolment target of 1.62 million students by 2030. However, as the report (DHET, 2021b, p. 3) argues, this will be possible

only if student enrolment increases annually at the same average rate as that obtained over the past decade. Despite a significant growth in enrolment at universities, it remains disconcerting that participation rates at universities continue to fare very poorly in comparison to many other countries, thereby compromising South Africa’s international economic competitiveness. . . . However, the average annual growth rate recorded from that period would need to be doubled per annum from 2019 to 2030 for the National Development Plan enrolment target to be realised.

Open and distance learning has gained traction globally, despite technological barriers, essentially because it is perceived as a cost-effective means of increasing access to education and therefore allows students to gain qualifications and skills necessary for employment. Covid-19 has accelerated the adoption of digital forms of learning across the education sector, and it is likely that blended and hybrid learning, and structured online programmes will increasingly be used post-Covid. Increasing youth demographics make it imperative to provide young people with skills, growth and employment opportunities, and ODL offers a more affordable way of expanding provision.

Many countries, including South Africa, have responded to the growing demand for higher education by investing in ODL, recognising that this mode of delivery brings the advantages of flexible, continuous and lifelong learning. The University of South Africa (Unisa) is the country’s main ODL provider, enrolling about one third of South Africa’s students. Several universities have followed its trend in ODL over the years.

2.2 Objectives of the Study

The study explores the issues of access, quality, costs and equity in teaching and learning through distance learning in South Africa. It considers the contexts of poor bandwidth, the digital divide, and the nexus between ODL and the labour market. It further examines responses to Covid-19 and “innovations” that may have been employed in ODL, contact-mode and dual-mode institutions in South Africa, highlighting challenges and opportunities. By distance learning, we include ODL, online learning, e-learning, and digital learning within the framework of existing policies and regulations in South Africa.

2.2.1. ODeL concepts and terminology used in this report

Distance education refers to a set of methods or processes for teaching a diverse range of students physically separated from the learning institution, their tutors/teachers as well as other students. Unisa's open and distance elearning (ODEL) policy (2008, revised in 2018) defines the various possible facets of ODeL as follows.

Blended learning is the provision of learning opportunities using a combination of multiple teaching and learning strategies, pedagogies, educational technologies and student support, where e-learning may form a significant proportion of the learning opportunities.

E-learning is learning mediated through a wide range of current and emerging digital technologies and resources.

Open distance learning is a multidimensional concept aimed at bridging the time, geographical, economic, social, educational and communication distance between student and institution, student and academics, student and courseware, and student and peers.

Open distance e-learning offers flexible learning provision in which most of the learning interactions with the university take place at a distance — primarily in digital formats — using Internet-based services such as online student support, online student counselling services, e-tutoring and online library services.

Open learning is an approach that combines the principles of student-centeredness, lifelong learning, flexibility of learning provision, the removal of access barriers, the recognition of prior learning experience, the provision of learner support, the construction of learning programmes in the expectation that students can succeed, and the acknowledgment that students bring their own knowledges and experiences to learning and knowledge production.

Learning is an active process of constructing knowledge, attitudes and values, as well as developing skills using a variety of resources, including people, printed materials, electronic media, experiential and work-integrated learning, practical training, reflection, research, and others. Learning is also associated with personal change and empowerment, as well as an aspiration to improve oneself in order to help others (Unisa, 2008, p. 2).

Hybrid learning as it has become widely used over the period of the pandemic allows classes to be taught with some learners participating synchronously online while others participate in person. The facilitator teaches both the remote class and the in-person class at the same time using webconferencing facilities. In this sense, hybrid learning differs from blended learning, which requires learners to complete some activities online and others in person.

Both *blended* and *hybrid* learning involve a mix of in-person and online learning, but with hybrid learning, the in-person learners and the online learners are different students being taught at the same time, while in blended learning, they are the same students who use different modes at different times.

Based on the findings of this study, this report seeks to make recommendations on how the higher education sector can capitalise on the gains already made by the rapid transition to ODL during the Covid pandemic. It considers the potential of ODL for expanding access to higher education in order to meet the development imperatives, for increasing employment opportunities, more especially for women and persons with disabilities. This report also argues that there is a need to rethink assessment, drawing upon the potential of micro-credentials.

2.3 History of ODL in South Africa

Often, the history of distance education tends to overlook the critical role that South Africa has played in the development of open and distance learning. South Africa has a rich history dating back to the 19th century and has made major contributions to the evolution of the tertiary education sector in South Africa and beyond.

2.3.1 The early years

Distance education, and ODL in particular, has been an integral part of the South African higher education landscape. Founded in 1873 as the University of the Cape of Good Hope, the University of South Africa (or Unisa, as it is commonly known) spent the bulk of its early history as an examining agency for Oxford and Cambridge universities and as an incubator from which most other universities in South Africa descended (Welsh, 1975).

Legislation in 1916 established the autonomous University of South Africa by Act 12 of 1916, instituting the name change to the University of South Africa, which two years later relocated to its head office in Pretoria. In this same year (1918), the Universities of Stellenbosch and Cape Town were granted independent status. During the period 1918 to 1951, Unisa was an “umbrella” or federal institution with its seat in Pretoria, playing an academic trusteeship role for several colleges that eventually became autonomous universities.

In 1946, Unisa was given a new role as a distance education university, which, through its Division of External Studies, enabled it to become the first university in the world to offer degrees and formally accredited qualifications through correspondence (as the mode was then called). It was thus transformed from an examining institution to a distance teaching university, and from 1946 to 1955, focused on enlarging its student enrolment by expanding its Faculties of Arts (including Music), Social Science, Commerce and Administration, Education, and Law.

In order to provide space for its employees, Unisa bought and rented several properties in Pretoria, in addition to the head office in Muckleneuk. The library also expanded, and today, it is the major university library in South Africa. By this time, Unisa had experienced phenomenal growth and attained national and international recognition while resisting government attempts to turn it into an Afrikaans-language residential university in Johannesburg (Craven, 2019; Manson, 2018). In the period 1972–1988, Unisa’s numbers grew, and it served a large number of political prisoners.

2.3.2 Education in the post-apartheid era

The chronology of policy development in higher education during the period 1995–2003 comprised development policies for changing the higher education landscape, beginning with the 1995 *White Paper on Education and Training* and the 2001 National Plan for Higher Education. The 1995 white paper was aimed at redressing the apartheid legacy of higher education and was committed to education and training based on the principles of open learning:

The Ministry of Education is anxious to encourage the development of an open learning approach since it resonates with the values and principles of the national education and training policy which underpins this document and has applicability in all learning contexts. (DoE, 1995, p. 28, para 26).

White Paper 3: A Programme for the Transformation of Higher Education (published 27 July 1997) endorsed distance education and resource-based learning (which are the bedrock of open learning) as being crucial for expanding access and inclusivity and enhancing quality within the South African context of limited resources. It recommended modalities of delivery to enable learning “at a multiplicity of sites, at the learner’s

own pace, using many media,” and advocated learning that was “appropriate for learners who are already in employment, or who need to earn in order to meet study costs” (see Nengebule, 2003). Within this context, the White Paper refers to the need:

to provide effective and flexible learning environments [using] . . . an increasing range of educational methods and technologies[,] those that are most appropriate to the context within which they operate. (DHET, 1995)

This included plans for reducing the number of HEIs through several mergers, with a proposal for the establishment of a single dedicated distance education institution.

By 1990, Technicon SA (TSA) and Unisa had grown into large HEIs with high annual student enrolments. For example, the Unisa student enrolment figure that year was 104,302; by 1992, it had increased to 119,985, and by 1994, Unisa was said to be catering to about 38% of the total student intake at the universities in South Africa (Unisa, 1994). Meanwhile, by 1993, the student population at TSA was 63,840, representing the largest section of the “technikon type of student” in the country (Nengebule, 2003). In January 2004, Unisa merged with TSA and incorporated the distance teacher education component of Vista University. The combined institution retained the name University of South Africa. The merger between the three distance education providers resulted in the establishment of Unisa as the single dedicated distance education institution catering for approximately a third of South Africa’s HE students. Until recently, Unisa was not just the only dedicated distance education provider in South Africa, but also the only ODL comprehensive institution, the biggest on the African continent, and one of the world’s mega-universities.

As Glennie and Mays (2019) pointed out, post-apartheid South Africa placed a major emphasis on redressing the hugely racially skewed participation rates in South Africa’s university system, with Unisa and other distance education providers that subsequently emerged playing a significant role in increasing overall participation rates in university education and the proportion of black students amongst those enrolled. To meet these goals, they point out that HEIs that were traditionally single-mode contact institutions had begun to offer blended, mixed-mode and dual-mode forms of provision with many HEIs establishing ODL units to guide the introduction of these modes. One such example is the [North-West University’s Unit for Distance Learning](#), established in 2012, which provides access to a range of undergraduate and postgraduate programmes to increasing numbers of students. Students have access to some 86 learning centres across SA, which make blended learning a possibility. The unit provides academic development support to students and professional development for lecturers and uses a range of e-learning and interactive online learning modalities. As a dual-mode university, the ODL programmes are delivered alongside the contact campus-based programmes, thus offering possibilities to lessen the load of face-to-face teaching, or to free students from the regulations of fixed-period, full-time lecture attendance.

3. Contemporary Status: Access, Quality, Costs and Equity

3.1 Status of ODL/Dual-Mode Provision

The potential of distance education for expanding opportunities for learning is well recognised in South Africa. The NDP acknowledges the important role of ODL and states: “Distance education, aided by advanced information communication technology, will play a greater role in expanding learning opportunities for different groups of learners and promote lifelong learning and continuous professional development” (NDP, 2012, chapter 9, page 2).

The White Papers (DHET, 1995, 2013) outline the principles of ODL as (i) ensuring learner centredness, lifelong learning and flexible learning provision, (ii) removing barriers to accessing learning, (iii) recognising and validating prior learning, (iv) providing optimal learner support, (v) ensuring the development of learning programmes in the expectation that learners can succeed, and (vi) ensuring rigorous quality assurance in the design of learning materials and support systems (DHET, 2013, p. 48) Open learning is further described (DHET, 2014, p. 22) as typically involving a wider range of student choices regarding access, curriculum, pacing, sequencing, learning modes and methods, assessment and articulation.

Across the range of South African education policies, ODL is cited as playing an essential role in embracing those who are excluded from education and in expanding opportunities. It is therefore considered central for human resource development and for increasing access to educational opportunities for those who experience barriers to learning, such as:

- geographic isolation from higher education institutions
- inability to take time off from work or family obligations for structured learning
- lack of access based on physical ability, gender or age
- incarceration
- financial constraints and an inability to meet the costs of higher education.

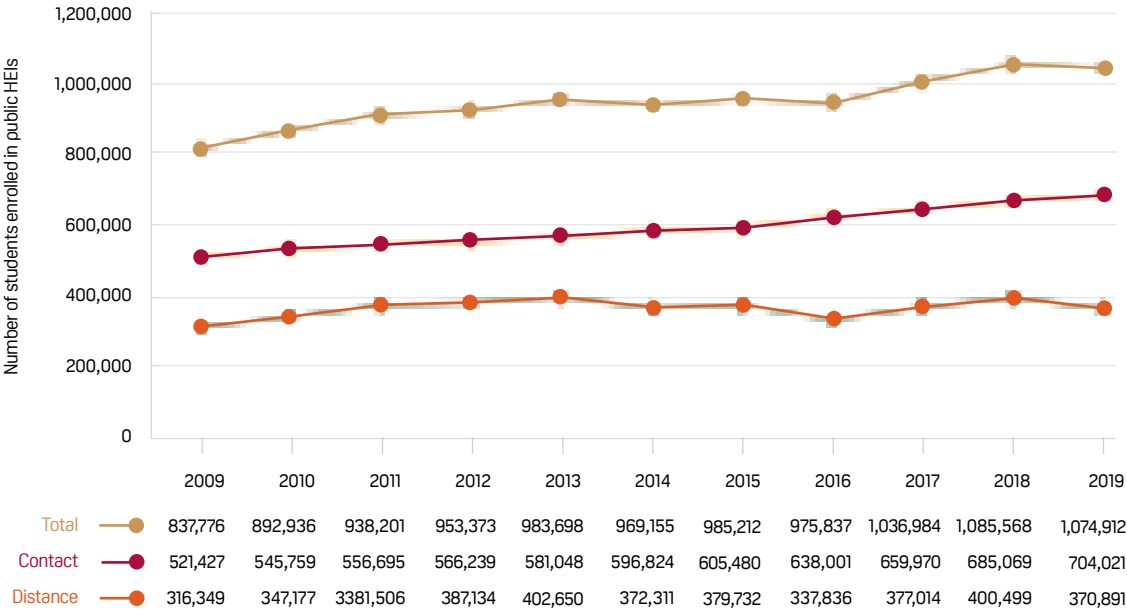
The Open Learning Policy Framework for South African Post-School Education and Training was developed against the backdrop of the White Paper for Post-School Education and Training (2014) strategy, which recommended the expansion of PSET and the implementation of ODL principles and practices across the sector. These recommendations were also in sync with global shifts in the PSET sector, which, because of changing demographics (in particular, the growing youth demographics), brought about pressure for expansion in access to more cost-effective education and training.

The Covid-19 pandemic saw an economic downturn and cuts in public education budgets precisely at a time when increased funding was needed across the educational sector (UNESCO, 2021). In this climate, advancements in educational technology, machine learning, learning analytics and artificial intelligence have enhanced learning possibilities and thus contributed to the growth of ODL across the higher education sector. The pandemic accelerated the extensive use of ODL and information and communication technologies (ICT) as an emergency approach (CHE, 2020), specifically across universities. The immediate (and emergency)

action to mitigate the pandemic’s impact has, as this study shows, brought about permanent changes in how the post-school sector operates, opening possibilities for expanding access and participation.

3.2 Access through ODL in South Africa

The United Nations Department of Economic and Social Affairs (2013) drew attention to the emerging youth bulge, estimating that by 2015, there would be a global increase of 1.2 billion youths aged between 15 and 24, with a further estimated growth of 7% by 2030. The youth bulge has had a significant impact on the post-school landscape in South Africa, particularly on Unisa. Whilst the growth in student enrolments increased by 29.6% in South Africa between 2009 to 2018, Unisa’s growth, during the same period, was 41.9%, with the university currently accommodating approximately 35% of all higher education enrolments in South Africa (DHET, 2020c). In 2019, total enrolment in public HEIs had reached 1,074,912, with 65.5% (704,021) of students enrolled through the contact mode (involving students' presence at the institution), and 34.5% (370,891) of students enrolled through the distance mode of learning.



Source: DHET, 2020b.

Figure 1. Number of students enrolled in public HE institutions by mode, 2009–2019.

3.2.3 Connectivity across South Africa

The Internet penetration in South Africa has been increasing, transforming the way that people communicate, transact and learn. Despite South Africa’s Network Readiness Score of 45.26, ranking it 76th of 134 countries (Dutta & Lanvin, 2020), many other factors, like age, gender, education, income, and geographic location, also have a huge influence on Internet access and consumption.

The South African mobile market has mobile cellular subscriptions well in excess of 160 per 100 inhabitants. South Africa therefore has an active mobile broadband subscription rate, well above the African average of 33.1 per 100 inhabitants (ITU, 2021). In terms of broadband connectivity, about 64% of the population are Internet users, with a digital growth of 4.5% between 2020 and 2021 (Datareportal, 2021). While fibre is becoming the broadband solution of choice, with large-scale deployments taking place, the digital divide

is evidenced by the near nonexistence of rural connectivity. Notwithstanding South Africa's increase in the overall numbers of digital users, the digital divide persists, with significant metropolitan–urban–rural disparities.

In 2019, according to Stats SA (2021a), only 1.2% of households in rural areas had access to the Internet, compared to 15.4% of households in metropolitan areas and 7.2% in urban areas. Stats SA (2021a) points out that 32.4% of South Africans live in rural areas and have no or limited Internet access at home.

This challenge is exacerbated by the lack or unreliable supply of electricity across South Africa. A study that investigated how ODL students in South Africa cope in their various contexts found that students use “multiple devices” sequentially, starting a learning activity on one device and finishing it on a different one. This is often because of challenges with battery life in contexts where the supply of electricity is not available or unreliable (Krull & Duart, 2019).

In March 2021, the second year of the pandemic, the SA Parliamentary Committees in the National Assembly and the National Council of Provinces responsible for overseeing higher education convened in a virtual meeting to be briefed by the DHET on the lessons learnt from the multimodal teaching and learning experience. Concerns raised by the committees related to connectivity challenges experienced by students, especially those in rural universities and colleges, as well as the negative effect of poor or unreliable electricity supply on these students (PMG, 2021). The department contended that universities should prioritise students who cannot work remotely due to connectivity challenges, reporting that measures to assist students included the zero-rating of academic websites, data provision, and discounted data bundles for students who qualified for the National Student Financial Aid Scheme (NSFAS), and indicating that 66% of students on the NSFAS had received laptops.

The digital divide manifests in all dimensions, in the lack of available ICT infrastructure, the level of digital competence, and the lack of systems and e-materials for teaching, learning and examinations, with the problems of access being more acute for students with disabilities. The problems of uneven distribution of and access to ICT, prominent in South African universities, are discussed in the latter section of this report. Improving the education sector's resilience and quality and increasing equity and access to learning rely on addressing the barriers to Internet access, and the problems are compounded by the lack or unreliability of electrification. Quality needs to be a priority, with the understanding that there can be no quality without equity and inclusion. As of January 2021, 36% of South Africans remained unconnected to the Internet. Of the 38.13 million active Internet users, over 36 million use their mobile phones to access the Internet (Statista, 2022).

3.2.4 Increasing participation in HEIs

When defining participation in the context of South Africa, Prinsloo (2015) referred to the argument made by Chowdry, Crawford, Dearden, Goodman and Vignoles (2013) that participation means increasing the number of students from previously disadvantaged backgrounds (lower socio-economic situations) and those from minorities or who are otherwise under-represented in higher institutions of learning. By drawing attention to the need to increase participation in ODL, Prinsloo (2015) distinguished participation from access, with access being a critical function of ODL. Distance education has primarily played a humanitarian role in providing access for all learners, with a special focus on those disadvantaged by geographical distance, by precarious economic conditions, by belonging to disadvantaged minorities, or by being disabled. Obviously, this mission is now relativised by a growing number of privileged students who learn at a distance not because they are compelled by unfavourable circumstances, but rather for reasons of convenience only (Peters, 2010, p. 32).

According to the OECD, 6% of South Africans aged 25 to 34 in 2018 had a tertiary qualification (OECD, 2019), while the OECD average was 45%. Tertiary attainment in South Africa is the lowest across all OECD and partner countries, with most of the population having an upper secondary or postsecondary non-tertiary qualification as their highest level of education. More learners are attaining upper secondary education in South Africa than a decade ago, and the share of young adults without upper secondary education dropped from 27% in 2008 to 18% in 2018. Those with upper secondary as their highest qualification are less likely to be employed and are more at risk of being neither employed nor in education or training at a young age than those with a tertiary degree.

While tertiary education is not widespread in South Africa, the country spends a larger share of its wealth on education (both schooling and post-schooling) than most OECD and partner countries (OECD, 2019). Spending on education as a proportion of overall government expenditure (22.7% in 2019/20) and GDP (7.2% in 2019/20) far exceeds the benchmarks set by UNESCO, which recommends allocating 15–20% of public spending and 4–6% of GDP to education (DHET, 2021b).

Most students in public HEIs enrolled in 2019 through the contact mode (704,021 or 65.5%), while 370,891 or 34.5% enrolled through the distance mode. Enrolment in TVET colleges reached 673,490 in 2019, reflecting a 2.5% or 16,357 increase when compared with 2018 (657,133). This number reflects a count of students enrolled in each enrolment cycle (there are six enrolment cycles at TVET colleges). The NDP indicates that headcount enrolment in TVET colleges should reach 2.5 million by 2030 (DHET, 2021a).

With the HE budget envelope heavily impacted by economic restrictions and further impacted by Covid-related economic decline, tertiary education funding would have to increase to more than 3% of GDP during the catch-up phase — above international benchmarks. But if implemented with cost-effective measures, including ODL and blended learning, there could be an easier and faster transition towards an expanded post-school system. This would enable the enrolments in the HE sector to expand its capacity to reach the 1,620,000 target envisaged by the NDP (2013). This study argues that ODL can provide a viable alternative to those denied access to education, especially at tertiary education levels, leading to higher education qualifications, generally improving the skills and capacity levels in the country and addressing the dead-ends that many youths find themselves in.

3.2.5 OER infrastructure and digital transformation in HE in South Africa

Open educational resources (OER) have the potential to increase educational opportunities, address inequalities, reduce costs and accelerate the development of learning materials (Baijnath, 2018). In research aimed at understanding the obstacles, opportunities and practices associated with OER at three South African universities (University of Cape Town, University of Fort Hare, and Unisa), Cox and Trotter (2017) showed that whether and how OER adoption takes place at an institution is shaped by a layered sequence of factors — infrastructural access, legal permission, conceptual awareness, technical capacity, material availability, and individual or institutional volition — which are further influenced by prevailing cultural and social variables. Yet, South Africa has no national infrastructure for the dissemination of OER in the higher education sector. However, several policies refer to OER, including in the South African Department of Higher Education and Training’s “Call for Comments on the Open Learning Policy Framework for South African Post-School Education and Training” (DHET, 2017a). Funding opportunities are made available by the DHET’s Teaching Development Grants, which are aimed at encouraging collaborative development and increased use of OER. The open learning policy framework allows for the sharing of OER with other countries, especially when these are released under an open licence that permits adaptation (DHET, 2014). These opportunities provide a positive environment and incentives for creating OER, as well as for sharing teaching and learning materials and minimal costs.

Given the potential cost-saving mechanisms of OER for providing educational materials to students and educators, cost saving could be further explored and adopted in response to the economic shortfall due to the Covid-19 pandemic.

3.3 ODL in South Africa: Quality and Efficiency

The challenges of high attrition and low throughput rates are perennial problems in SA. Quality measures in HE focus on the extent to which students are supported to improve their success.

3.3.1 Efficiency in higher education

Two important indicators of efficiency in higher education are (i) the extent to which institutions are able to ensure high throughput rates that are within, or as close as possible to, the minimum duration of the qualification, and (ii) the extent to which the system maintains high student retention rates (with low dropout rates). The aim is to enable as many students as possible to complete their studies within the minimum time while ensuring quality.

3.3.2 Throughput rates as an indicator of efficiency

Throughput rates for universities are defined as “the number of first-time entry undergraduate students of a specific cohort of a specific year who have graduated either within the minimum time, or up to two years beyond the minimum time, to the number of students in the baseline enrolments of that cohort” (DHET, 2021b). The time adjustment for distance students is usually up to double the minimum time, plus up to two years. While throughput rates have generally been slow, with students taking too long to complete their degrees, more recently, the DHET (2021b) points to a sustained improvement in the throughput rates of contact university undergraduate students, which, as shown in Table 1, improved incrementally between 2009 and 2016.

Table 1. Throughput rates for first-time entry students in contact mode

NATIONAL TOTAL: CONTACT								
Intake year	Graduates (%)							
Year 1	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2009	25.0	45.6	58.4	64.7	68.1	70.2	71.5	72.6
2010	27.9	49.4	62.4	68.4	71.5	73.3	74.6	
2011	28.6	50.2	63.2	68.7	71.6	73.5		
2012	29.1	50.2	62.7	68.4	71.5			
2013	30.2	51.3	63.2	69.0				
2014	30.9	51.6	63.8			Data not available		
2015	31.9	53.6						
2016	32.2							

Source: DHET, 2021.

As shown in Table 2, the throughput rates for 2009–2016 by intake year of first-time entry students in three-year undergraduate degree programmes in the distance mode are considerably longer, with lower completion rates.

Table 2. Throughput rates for first-time entry students in distance mode.

NATIONAL TOTAL: DISTANCE								
Intake year	Graduates (%)							
Year 1	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2009	2.8	7.8	13.6	19.0	23.1	26.6	28.7	30.5
2010	2.0	7.5	13.6	18.3	22.6	25.5	27.4	
2011	1.7	7.9	13.9	19.5	23.1	25.7		
2012	1.9	7.7	14.6	19.4	23.4			
2013	3.4	12.8	21.0	27.3				
2014	4.2	15.0	24.1			Data not available		
2015	4.5	16.3						
2016	6.0							

Source: DHET, 2021.

The throughput rates of distance mode students are traditionally lower than the national rates, making it imperative for institutions to consider the range of ways to improve learning outputs, using approaches for identifying, monitoring and supporting students at risk, as well as offering improved student support in terms of academic development and the development of academic literacy and digital skills (which have become essential for all students since the onset of the Covid pandemic).

Given the higher number of students enrolling for distance education straight from school, transitioning skills, academic resilience, and skills to navigate distance processes are important for improving retention and throughput rates. This report does not focus on the range of student support that is and may be offered. The intent is to draw attention to the low throughput rates and high attrition rates of distance education students (discussed below) and to highlight the need for institutions that are transitioning to distance education modes to consider the additional support students require.

3.3.3 Retention rates as an indicator of efficiency

As mentioned above, student retention is also an indicator of the efficiency of the university sector. It is therefore necessary for institutions to undertake a thorough analysis of their dropout rates. The attrition rates for distance students have been considerably higher than the rates for contact students, although there have been improvements over the past few years. Table 3 shows the cumulative percentage of contact students who dropped out after successive years of study for first-time entry contact student cohorts that entered three-year university programmes from 2009 to 2017.

Table 3. Dropout rates for first-time entry students in contact mode

NATIONAL TOTAL: CONTACT									
Intake year	Dropouts (%)								
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2009	16.5	19.2	20.5	20.8	22.1	22.5	22.6	22.1	21.7
2010	14.1	17.5	18.2	19.6	20.2	20.4	20.2	19.7	
2011	13.8	16.3	18.3	19.7	20.2	19.9	19.5		
2012	13.1	17.6	19.3	19.9	20.0	19.6			
2013	15.3	19.1	18.6	18.3	18.5				
2014	15.9	17.5	16.9	17.1			Data not available		
2015	11.8	14.7	14.8						
2016	11.3	14.4							
2017	10.3								

Source: DHET, 2021.

Table 4 shows the dropout rates by intake year of first-time entry students in three-year undergraduate degree programmes (distance mode only) for the 2009–2017 intake years. In contrast with the contact students depicted in Table 3, students who study by distance have considerably higher attrition rates.

Therefore, distance provision, while an important instrument for expanding access to university education, must be complemented by improved national and institutional planning and programme design and increased support systems, especially for underprepared school-leavers who have no experience of learning at a distance. Distance education provision needs to rise to the triple challenge of providing (i) greater access numerically as well as in terms of diversity, (ii) in ways that offer a reasonable expectation of turning access into success in quality programmes that (iii) are affordable (DHET, 2014).

As indicated in Table 4, over the period 2009–2019, the success rate for students enrolled through distance modes of learning increased by 7.0 percentage points. While the DHET figures for 2020–2021 (Covid years) are not yet available, the 2019 data indicated that the average undergraduate success rate for students enrolled through a distance mode of learning was 69.9%, which was only 1.1 percentage points higher than in 2018 (DHET, 2021b).

Table 4. Dropout rates for first-time entry students in distance mode

NATIONAL TOTAL: DISTANCE									
Intake year	Dropouts (%)								
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2009	29.3	41.8	47.8	48.6	53.5	55.1	57.5	57.1	56.9
2010	31.8	44.1	47.1	53.3	55.5	58.6	58.4	58.6	
2011	34.3	40.8	49.1	53.2	56.5	57.4	58.2		
2012	28.8	42.6	48.1	52.9	54.5	55.8			
2013	31.6	44.0	52.1	52.7	52.4				
2014	26.4	38.3	45.4	45.4			Data not available		
2015	28.7	39.0	42.4						
2016	29.3	36.5							
2017	28.1								

Source: DHET, 2021.

The generally lower pass rates and the high attrition rates among distance students signal a caution for institutions transitioning to distance education without considering the varying modalities of student support that will be required. As is shown in the latter part of this study, distance education will form a significant component of teaching and learning post-Covid. In embracing digital transformation, mitigation strategies to ensure student retention will need to be prioritised.

3.3.4 Quality assurance and ODL

The advantages of ODL for promoting equity and access need to be acknowledged. In ensuring quality in ODL, it is recognised that the methods of quality assurance will differ from methods used by conventional contact universities, because of the broad range of organisational, pedagogical and methodological differences. One such example of this can be seen in how the modes of assessment were impacted by the deployment of online examinations.

While the assessment modes and policy are monitored as part of the CHE qualification accreditation, assessment has been under scrutiny as a result of Covid-19 and the cessation of venue-based examinations in most universities. It was recognised at an early stage during the pandemic that some students were (intentionally or through ignorance) compromising the integrity of assessments. A range of campaigns were developed to remind students of their obligation to themselves and the university to conduct themselves with integrity, while faculties had to work hard to ensure that the types of assessments they developed were rigorous and suitably designed (University of Pretoria, 2022). These kinds of campaigns have been carried out at most universities, with plagiarism mitigation strategies put in place and disciplinary procedures amended to cater for the range of new kinds of academic irregularities that occur during online or remote modes of assessment. Proctoring and authentication have become necessary features of online assessments, necessitating the realignment of policies and a quality assurance regime in accordance with these changes.

3.4 Equity and Inclusivity in HE in South Africa

In a country like South Africa, characterised by high levels of unemployment, adult illiteracy and socio-economic inequalities, ODL offers a way to expand access to higher education and address the problems of equity and low human capital development. With the onset of Covid-19, traditional residential universities globally have included online modalities as part of their delivery. It is likely that with the introduction of ODL at school level due to Covid-19, familiarity with online learning in the basic education phase may encourage more learners to engage in ODL at TVET or other higher education levels.

As shown in the latter section of this study, the blended learning trend was already in place before the pandemic, with many institutions using online approaches alongside their mainstream modes of teaching and learning. While the pandemic accelerated the transition to digital teaching, questions or concerns have been raised about the educational quality and social equality of digital education, especially regarding disadvantaged communities in South Africa that have limited access to technology. This has been a matter of concern more especially because universities closed their residential accommodation in response to the pandemic, and students needed to return to their homes across the country in townships, informal settlements and rural areas, where access to connectivity was limited. Issues of low pass and throughput rates have persisted, and challenges regarding the integrity of assessments using ODL approaches have been common across the sector. These are issues that need to be focused on with the increasing transition to ODL modes.

3.4.1 School-to-work and unemployment

Effective school-to-work transition is critical to address the challenge of those not in employment, education or training (NEET), and to integrate young people into the labour market. South Africa's unemployment rate reached 34.9% in the third quarter of 2021 — the highest figure on record.

Statistics South Africa (2021b) shows that youths in South Africa continue to be disadvantaged in the labour market, with the youth unemployment rate higher than the national average. However, the statistics show that higher levels of education can often be a cushion in a precarious labour market, with unemployment rates decreasing as levels of education and qualifications increase.

Although the graduate unemployment rate remains relatively low in South Africa compared to those of other educational levels, unemployment among youths continues to be a burden, irrespective of educational attainment, with the youth unemployment rate reaching 66.5% in the third quarter of 2021. Overall, 45.7% of South African youths aged 19 are not in education, 41.4% of 19-year-olds are still attending secondary school, and only 6.4% are enrolled in a university, with large numbers each year unable to enrol (Stats SA, 2021a). Increasing post-school learning opportunities using distance education and well-designed TVET programmes that are marketed for better adoption could increase the transition from school or general education to decent work and livelihoods.

Alongside the expansion of post-school learning opportunities is the need for embedding employability and entrepreneurship into the curricula, and for reassessing programmes with a view to providing opportunities for students to develop knowledge and skills that will enable entrepreneurship among graduates. The DHET refers to plans to overhaul the curriculum and content across the post-school sector so as to better prepare students for job seeking and work creation. Universities' and TVET colleges' curricula are being reviewed and strengthened to be relevant to skills required for the economy. In this way, it is proposed that curricula will be aligned with the needs of local employers, communities and the economy, particularly focusing on digital and related skills (DHET, 2022).

As indicated earlier, the Department of Higher Education and Training is planning for two new universities: one in Science and Innovation and the other in Police Service Investigations. The new University of Science and Innovation is expected to focus specifically on STEM subjects such as data science, machine learning, artificial intelligence, blockchain, robotics, hydrogen-powered technologies such as smart transportation, and logistics systems. The second university will focus on detecting and fighting crime and is expected to be established with a view to improving the quality of general and specialised South African Police Service investigations (DHET, 2022). Both proposed universities are aimed at developing improved skills and expanded work opportunities.

To address the high rate of graduate unemployment in SA, HEIs should ensure that the curriculum design targets graduates' employability and is regularly adjusted to reflect demands and changes in industry and the labour market. Collective efforts need to be made to develop state-of-the-art online courses required by HEIs, particularly in the field of science, engineering and technology (SET). While a majority of students were attracted to the SET field of study in 2019, the largest difference in first-time enrolments was recorded in the SET field, where 180,979 more students enrolled in this field through the contact mode of learning as compared to the distance mode. A lower difference was recorded in the education field (DHET, 2021b). However, this may have been a result of aligning enrolment targets with sectoral needs.

3.4.2 Learners with special needs

In 2019, a total of 10,753 or 1.0% of students enrolled in public HEIs reported having a disability. Almost one quarter of students reported a sight disability (22.3% or 2,397), followed by 20.8% (2,239) reporting a physical disability, while a lower proportion reported having multiple disabilities (0.8% or 81). It is estimated that 20.8% (2,236) students with disabilities do not disclose their disability. More than half of students in public HEIs who reported having a disability were females (54.1% or 5,820), while 45.8% (4,925) were males. The largest gender disparity was recorded for students with sight and physical disability, where 218 and 211 more females reported having these disabilities compared to males. Even though there was an overall higher number of females with disabilities, a higher number of male students reported having intellectual and communication disabilities (DHET, 2021b).

The integration and accommodation of learners with special needs in HEIs remains a challenge. While physical access and the inaccessibility of some course components are persistent challenges, the nondisclosure of status by students with disabilities often makes it more difficult to establish the extent of the challenges and identify students with disabilities. Some HEIs have sought to address the issue by establishing Disability Units to facilitate access and inclusion for persons with disabilities (PWDs) and encourage their participation in university life. Despite these endeavours, much remains to be done at the HEI level, including allocating funding to provide accessible online learning, inclusive "universal" curriculum design, accessible assessment, and strategies for inclusivity and managing off-campus learning for students with disabilities, as well as addressing equity issues and the barriers within universities that restrict PWD from full inclusion and participation.

3.4.3 Micro-credentials for flexible, inclusive learning

Micro-credentials certify the learning outcomes of short-term learning experiences, such as a short course or training. They offer a flexible, targeted way to help people develop the knowledge, skills and competencies they need for their personal and professional development. Micro-credentials have strong potential to contribute to the DHET social justice agenda in South African higher education. Given their flexibility, micro-credentials can be designed and delivered by a variety of providers in many different formal, non-formal and informal learning settings. Micro-credentials can be particularly useful for people who want to upskill or reskill to meet labour market needs or to develop professionally after starting work.

As Keevy et al. (2021) reported, there is a policy gap in the micro-credential landscape that non-traditional providers such as Facebook and Mozilla are seeking to fill (COL, 2019). Keevy et al. (2021) argued that it is necessary for this to be formalised through developing standards for national learning ecosystems that are built for international exchange. They argued that this would ensure recognition is interoperable across sectors, borders and life spans. Micro-credentials focus on modules of learning much smaller than those covered in conventional academic awards, often allowing learners to complete the requisite work over a short period. The value that micro-credentials can add reaches beyond the relative ease with which they can be awarded (Keevy et al., 2020), including in instances where learning is informal and subject to no external quality assurance. Note that the goal is not to bypass well-established government systems but to enable learners to differentiate themselves fluently in an increasingly competitive marketplace. Keevy et al. (2021) argued that as technology continues to develop, it is possible that the trend will become further entrenched, leaving behind the more traditional delivery and quality assurance regimes. Just as the Covid-19 pandemic has presented the world with both threats and unexpected opportunities, education and training providers and quality assurance bodies should explore credential fluency. These authors pointed to the fact that digital credentials offer the potential to increase the efficiency of education systems and to motivate learners to participate in highly targeted training; they also have the capacity to reach learners and retain currency across the world.

South Africa has a national qualifications framework that drives skills and competency credentialling and makes provision for micro-credential development. Integration of micro-credentials with other HE programmes can be a conduit to other forms of collaboration with the private sector and expand opportunities for HE institutions and students, thereby broadening participation.

3.4.4 MOOCs

Further flexibility is exemplified by MOOCs that enable students to collect credits and take them from the non-formal to formal spheres. These students' credits can be counted so that they do not have to pay as much and do not have to take all the courses required in the formal sector, especially for expensive postgraduate programmes. With a strong student-aged population, SA could embrace MOOCs to complement the knowledge and skills base for a growth economy, by providing skills development programmes that are accessible and affordable. Note, however, that the term "open" does not mean that the MOOCs are free; it indicates there are no entrance requirements or prior qualifications required for participation. They can be accessed at any time and in any place (Twinomurinzi & Msweli, 2020). MOOCs are therefore an inclusive and flexible learning medium.

Generally, MOOC users often come from low- and middle-income backgrounds and from diverse backgrounds. They are often young people seeking to gain skills. While non-users consider online courses valuable, they believe employers do not recognise them (Garrido et al., 2016). Non-users are more likely to participate in MOOCs if these led to employability and certification, hence the need for both validation and a structured MOOC approach with a defined sequence of courses to earn credit towards a qualification (Garrido et al., 2016). As indicated above, the SA National MOOC Strategy was outlined in a 2012 White Paper for PSET. However, MOOCs are not yet in the mainstream education system, and there are no clear accreditation and certification mechanisms. In addition, infrastructure challenges such as inadequate access to the Internet, low broadband and poor technological facilities also impact MOOC use.

3.5 Costs Implications of ODL in South Africa

South Africa, like other countries, has been affected by a range of disruptors whose consequences inform this study. That South Africa is deeply unequal is hardly a subject of debate. Approximately 45% of South African youths aged 19 are not in education; 41.4% of 19-year-olds are still attending secondary school, and only 6.4% are enrolled in a university. Youth unemployment rates are higher, irrespective of their level of education (less than matric, matric, graduates, other tertiary), than those of older citizens in South Africa.

3.5.1 Cost efficiency

A consequence of the DHET (2013) White Paper for Post-School Education and Training has been a renewed recognition of and emphasis on distance learning as a strategy for increasing participation, because of its perceived cost-efficiency for both institutions and students (CHE, 2016). This was influenced at the time by the increasing sophistication of information technology systems, the decreasing costs of bandwidth and the increasing availability of the devices necessary for student learning. The 2013 White Paper signalled this change in focus, indicating that the expansion of distance education at both Unisa and mainly contact universities should play a particularly important role.

Another way of reducing costs per student, according to the CHE (2016), is to negotiate more distance and fewer contact students, since the former currently carry half the input subsidy of the latter. The trend between 2008 and 2012 was in this direction, but the fact that the average throughput rate for distance education students tends to be substantially lower than for contact students means that while such a step would increase access, it would not be matched by a concomitant level of student success. The CHE remarked that if this step were to be pursued, it could not be expected that Unisa should bear the full burden of such student enrolment increases. Increases in distance education student places could be negotiated with the other universities as well, as was foreseen in the DHET's 2014 White Paper for Post-School Education and Training and the DHET's Draft Distance Education Policy in 2012.

The Higher Education and Skills in South Africa Report of 2017 (from Statistics South Africa) found that 51% of youths aged 18–24 stated they did not have the financial means to pay tuition fees. Of this number, 18% of the youths aged 18–24 who were not enrolled at any educational institutions indicated that their poor academic performance prevented them from participating. The report, which drew on data from the General Household Survey (2017), indicated that only 33.8% of youths aged 18–24 were enrolled at an educational institution. Of these, 22.2% were attending school, while 11.6% were attending post-school educational institutions.

According to the report, the number of graduates from public higher universities more than doubled from 92,874 in 2000 to 203,076 in 2016. However, the higher education system still has challenges in terms of providing access and, thereafter, poor success and completion rates. Many students drop out without completing a qualification, or they take up to six years (or more) to complete a three-year qualification, with relatively few students progressing to advanced NQF levels of study (NQF levels 8–10). Honours (19.8%), master's (6.3%) and doctoral studies (1.4%) accounted for a relatively small percentage of the overall tertiary qualifications awarded in 2016. Close to 47% of youths aged 20–24 years who held bachelor's degrees or qualifications equivalent to NQF Level 7 came from the highest household income quintile. In comparison, only 7.4% of youths who held qualifications equivalent to NQF Level 7 came from the lowest household income quintile. Furthermore, close to 36% of youths holding postgraduate degrees or qualifications equivalent to NQF Levels 8–10 came from the highest household income quintile.

The strategies proposed in 2016 (CHE, 2016) and still valid today to achieve “significant productivity improvements” were: first, changing the mix of modes in which higher education is delivered; second, finding sources of provision outside the public sector; and third, effecting internal efficiencies in the educational process in higher education. This entails adopting a mix of contact and distance education and making more extensive use of technological innovation in the delivery of higher education. According to the CHE, distance education students attract half the subsidy that contact students in the same cell of the funding grid attract, up to and including the honours degree. It follows that from the state’s point of view, distance education makes less demand on the public purse, so increasing the proportion of distance education students in an expanding system would reduce the subsidy required (CHE, 2016, p. 366). Moreover, with respect to economies of scale, ODL is an affordable mode of learning and offers advantages for students who can continue working while pursuing their studies, with work experience giving them a competitive edge in the job market. They also can cover their tuition fees from their salary. Other advantages of ODL are the savings that students can realise from not having to travel and/or pay for accommodation near the college or university campus.

3.5.2 Cost imperatives to meet the NEET challenge

South Africa’s vision for a post-school system (WPPSET, 2013; NPPSET, 2019b; NDP 2012) emphasises the need to expand post-school education and training opportunities, calling for PSET institutions to offer a diversity of programmes that cater not only to the needs of the youths who completed schooling, but also to those who did not complete their schooling (DHET, 2021). This reconfiguration envisions a post-school system that prioritises the provision of meaningful learning options for the large population of young adults defined as NEETs, who are neither absorbed into the job market nor building their skills base through education and training.

The high number of youths in the NEET category poses a major challenge for South Africa — economically, politically and socially. Stats SA (2021b) points out that approximately 3.4 million (33.5%) out of 10.2 million young people aged 15–24 fall into the NEET category. Stats SA states that the NEET rate serves as an important additional labour market indicator for young people, particularly with the growing youth bulge (Stats SA, 2021b). Moreover, the high number of matriculants who fall within the NEET category and who have not been taken up into any post-school institution or any form of employment is a waste of human potential and a latent source of serious social instability. This could, however, be viewed differently — with the right policies and institutions, the increasing youth demographic could be a source of human capital and boost economic growth — or as the United Nations (2017) contemplates, the alternative to the youthful dividend could be a “ticking time bomb”.

Currently, there are too few institutions to accommodate the large number of school leavers, necessitating an innovative expansion that will make it possible to embrace the youths aged between 18 and 24 years who are excluded from education and training. This calls for innovative ways of expanding opportunities, particularly for young people in disadvantaged rural areas and informal settlements.

In South Africa, the official definition of a “youth” refers to persons aged 15–34 years. The advantage of looking at this broad age range is that it includes the growing share of individuals who remain in education for longer and only enter the labour market in their late 20s. The DHET (2021c) calculates the NEET rate by dividing the number of persons in a given age group who are NEET by the total population in the same age group. In these terms, close to 17 million people aged 15–60 fell into the NEET category in the latter part of 2020. Of these, more than half were below the age of 35 years. The report shows that low levels of education and skills heighten the risk of a person being NEET and that in 2020, approximately 59% of people aged 15–60 who were NEET had education levels below matriculation, followed by those with matric at about 34%. Persons who had a tertiary qualification accounted for only 7% of NEETs.

While enrolment in PSET institutions is increasing, the rise is not sufficient to curb the high number of young NEETs. In 2018, only 2.5 million students of all age groups were enrolled in PSET institutions, whereas 3.2 million youths aged 15–24 years were in the NEET category. In addition, the PSET system has a key role to play in reskilling and upskilling millions of workers who have lost their jobs, and those who require new skills to work differently (McKay, 2012).

Another key concern is the funding challenge experienced by students, in particular those looking to attend higher education institutions. The Higher Education and Skills in South Africa report (Stats SA, 2019) analyses reasons for the non-participation of school leavers in post-schooling. It points out that in 2019, 51% of youths aged 18–24 stated that they did not have the financial means to pay for their tuition. Furthermore, 18% of those aged 18–24 who were not attending educational institutions indicated that their poor academic performance prevented them from participating. The report further revealed that 17.5% of youths in the highest income quintile were attending post-school educational institutions, compared to 10.6% in the lowest quintile.

While ODL is not offered as a solution for the multiple challenges in the post-school sector in South Africa, it offers a practical way of addressing crucial issues of widening access to affordable, quality learning opportunities. However, international research and local experience strongly suggest that in pursuing this goal, a shift towards open learning approaches will also nudge the post-school sector towards taking on board discernible changes in the ways new generations of learners are beginning to view learning, education and training (DHET, 2017a). During the Covid-19 pandemic, with school closures and in the absence of traditional face-to-face learning, learners have had to adapt to distance learning tools and modes of delivery and may therefore be more encouraged to engage in post-secondary ODL than in the past.

3.5.3 Cost increase of education at its lowest in 30 years

According to Stats SA's Consumer Price Index for 2021, the increase in the cost of education was at its lowest annual rate in three decades. Stats SA surveys educational institutions every year in March; for 2021, it recorded that education fees increased by 4.1% in 2021 compared to a 6.4% rise in 2020. It was the lowest increase since 1991. While schools kept primary and secondary school fees low due to concerns about what impact higher costs would have on families during the Covid-19 pandemic, tertiary institutions (universities and institutions of technology) increased their fees by 5.1% on average, compared to a 4.7% increase in 2020.

NSFAS allocated R27.8 billion during the 2019 academic year, which was R6.6 billion (31.5%) higher than what was allocated in 2018 (R21.1 billion). Through NSFAS, the government has awarded approximately R171 billion in loans and bursaries to students since 1991, with 4.5 million students assisted. As of 31 December 2021, NSFAS had disbursed R38.7 billion to about 800,000 university and TVET college students, representing an increase of 316% from 2015 to 2021 (DHET, 2022).

With respect to the Skills Development Levy Fund, during the 2019/20 financial year, the skills levy system disbursed R18.3 billion, of which a larger proportion was disbursed to the Sector Education and Training Authorities (SETAs) (R14.6 billion), while the National Skills Fund (NSF) received R3.7 billion. Of the R14.6 billion disbursed to the SETAs, over R9.0 billion was spent on discretionary grants, R3.7 billion was spent on mandatory grants, and R1.9 billion was spent on administration costs.

The total funding allocated to public HEIs, TVET colleges and CET colleges during the 2019/20 financial year was R56.1 billion, representing a 14.3% (R7.0 billion) increase compared to what was allocated in the 2018/19 financial year (R49.1 billion). Out of the total R56.1 billion allocated during the 2019/20 financial year, a larger proportion of transfers, subsidies and operational costs was for public HEIs (75.5% or R42.4 billion), while TVET and CET colleges were allocated 20.6% (R11.5 billion) and 3.9% (R2.2 billion), respectively (DHET, 2021b).

However, these incentives have not resulted in a significant increase in access to tertiary education, with the percentage of NSFAS beneficiaries at 26 universities and 50 TVET colleges increasing to 36.1% of total enrolments in 2020–2021, from 26.9% in 2017–2018 (National Treasury, 2021).

University enrolments stalled at just under 1.1 million during the 2020–2021 period. TVET college enrolments declined by 3.4% to 680,000 during this period, while NSFAS beneficiaries at these TVETs increased by 6.6% to 240,406. But NSFAS beneficiaries at universities increased by 75% to 395,591. Compared to 2019, the total number of students who benefited from NSFAS funding was 740,037 in 2019, representing a 26.1% (153,274) increase when compared with the number of beneficiaries in 2018 (586,763). The number of students who benefited from NSFAS was higher for public HEIs (393,767 or 53.2%) than for TVET colleges (346,270 or 46.8%). The National Research Foundation, moreover, provided funding of R2.4 billion to 11,918 postgraduate students during 2019–2020.

In addition to the NSFAS, the Funza Lushaka bursary scheme, which is aimed at assisting students who enrolled in the education field of study, provided R942 million to 10,469 students in 2019, which was equivalent to only 5% of enrolments and represented a 29.2% or 4,318 decrease when compared to 2018 (14,787). The total amount allocated for this bursary was 5.8% (R58.5 million) lower than in 2018 (R1.0 billion) (DHET, 2021b).

The beginning of the 2021 academic year saw a new wave of student protests after NSFAS reported a funding shortfall of R5.7 billion and could not confirm funding eligibility for first-time entrants. The 2021 budget report indicated a Cabinet approval of reductions to the DHET's baseline of R24.6 billion over the three-year medium-term expenditure framework. These reductions included R6.8 billion on the allocation to the NSFAS for loans and bursaries, R5 billion on university subsidies and R947.1 million on TVET college infrastructure grants (National Treasury, 2021). According to a DHET (2021) report, universities (R93.2 billion) and TVET colleges (R16.7 billion) had total revenues of R109.9 billion in 2019–2020. University revenue streams were made up of state subsidies (42%), fees (33%) and third-stream income (25%), this last being a broad category that includes income from contract research, entrepreneurial activity, endowments and investments, as discussed below. The state subsidy — R39.2 billion — accounted for about 0.8% of gross domestic product (GDP) (DHET, 2021a).

The report notes that the global economic impact of Covid-19 has been severe and that it has led to a steep economic decline and accelerated the deterioration of public finances in SA. The 2021 National Treasury Budget Review estimated that the pandemic shock has led to a 7.2% contraction in GDP growth in 2020; the economy is projected to grow by 3.3% in 2021 and 2.2% in 2022. The GDP is only expected to recover to pre-pandemic levels in late 2023.

The economic situation is likely to affect public funding of the PSET system when public expenditure on PSET is critical for broader social and sustainable development through improvements in skills and productivity. This report provides an overview of funding and spending trends in PSET in South Africa. Spending on PSET is intended to be an investment in human capital, research and societal capital. It contributes significantly to the development of a critical citizenry, the deepening of knowledge for societal improvements, attention to social justice and the drive towards societal transformation and participation in education.

3.6 Resourcing Universities

Universities are complex organisations that earn or acquire revenue from a variety of sources, including:

Subsidy funding

- direct government funding

Income from fees

- fees paid by domestic students
- fees paid by international students

Third-stream income sources

- research grants and contracts
- bequests and other forms of philanthropic sources
- non-formal offerings for nonsubsidised programmes
- knowledge transfer (such as consultancy services)
- intellectual property revenue from licensing and patents
- trading (such as investments, fees from hiring out venues for conferences)

For the majority of public higher education institutions in most OECD countries, direct government funding is the largest single source of revenue. This is because of the important role of higher education in the socioeconomic development of the country, but also, as the OECD (2020) points out, because government funding is a powerful motivator of institutional performance, with the allocation of funds influencing universities to function in ways that advance national priorities, such as:

- delivering high-quality education and training that meets the needs of learners, employers and communities
- ensuring the provision of equitable access to learning
- delivering strategically important programmes that meet national and regional needs
- producing research of high quality as well as research that is socially or economically valuable

In South Africa, the Ministerial Statement outlines funding instruments to steer the university sector in ways that prioritise efficiencies in the system. Universities are required to apply efficiency measures to ensure that available funding is effectively utilised. These measures, according to the DHET (2020a) can include, among others:

- reductions in overheads relative to the core functions of universities
- collaboration among universities in order to save on expenditure

3.6.1 Block grant budget calculations for universities

In most OECD countries, block grants are the principal means by which recurring funding is delivered to cover several categories of expenditure, such as teaching, ongoing operational costs, and core research activities. Institutions receiving block grants are mainly responsible for dividing and distributing these internally according to their needs and their strategic priorities, across their various units and activities (OCED, 2020, p. 84). In South Africa, the block grants and earmarked grant funding received by universities amounts to about 84% of the total state budget towards universities (excluding NSFAS), and they are intended for operational costs, including operational maintenance of assets related to university teaching, learning and research activities. Block grants are funds controlled by university councils and can be used at the discretion of council and university management. Universities receive funding within each of the four sub-block grant categories: teaching input, teaching output, research output and institutional factors. The full details of the current funding allocation can be found in the Ministerial Statement (DHET, 2020a).

3.6.2 The teaching input sub-block grant

This grant is funded according to the calculation of actual teaching input units, determined firstly by considering the Higher Education Management Information System (HEMIS) unweighted enrolled full-time equivalent² student total (excluding experiential learning and work-integrated learning), and then determining the grand total according to the weighted teaching input units for a university. The following table shows the weightings used for teaching input funding, with the weighting (and therefore the subsidy) for distance education (DE) being half that of contact students at the levels of undergraduate and honours qualifications.

Table 5. Funding weightings for teaching inputs: 2021/22 and 2022/23

Funding group	Undergraduate & equivalent		Honours and equivalent		Masters and equivalent		Doctoral & equivalent	
	Contact	Distance	Contact	Distance	Contact	Distance	Contact	Distance
1	1.0	0.5	2.0	1.0	3.0	3.0	4.0	4.0
2	1.5	0.75	3.0	1.5	4.5	4.5	6.0	6.0
3	2.5	1.25	5.0	2.5	7.5	7.5	10.0	10.0
4	3.5	1.75	7.0	3.5	10.5	10.5	14.0	14.0

Source: DHET, 2020a.

In addition to the differentiation between contact and DE learning, funding is weighted by the enrolled full-time equivalent student aggregations and according to the Classification of Educational Subject Matter (CESM) funding group categories, which are set out in Table 6. The table shows the lower funding for distance programmes, which is determined in terms of the funding categories below.

² Full-time equivalent (FTE) students refers to students who enrol for courses that equate to a full-year course load, equal to 120 NQF credits. While DE students have tended not to take full 120-credit course loads, the recent living allowance for “full-time” DE students who enrol for 120 credits has resulted in higher numbers of DE students meeting the FTE requirement (albeit at a lower rate than those in contact universities). In addition, the high number of DE students registering straight from school perceive themselves as full-time students and register for 120-credit course loads.

Table 6. Funding groups for 2021/22 and 2022/23

Funding group	CESM categories included in funding group
1	07 education, 12 law, 18 psychology, 19 public administration and services
2	04 business, economics and management studies, 05 communication & journalism, 06 computer & information sciences, 11 languages, linguistics & literature, 17 philosophy, religion & theology, 20 social sciences
3	02 architecture & the built environment, 08 engineering, 10 family ecology & consumer sciences, 15 mathematics & statistics
4	01 agriculture & agricultural operations, 03 visual & performing arts, 09 health professions & related clinical sciences, 13 life sciences, 14 physical sciences

Source: DHET, 2020a.

3.6.3 The teaching output sub-block grant

The teaching output sub-block grant incentivises HEIs for student success by incentivising increases in the actual number of students who graduate (from the undergraduate up to the taught master’s level). The focus is on actual student graduate numbers, as opposed to annual full-time equivalent student success rates. The teaching output grants are based on the total number of graduates as reported by the universities, after the numbers have been externally audited.

The allocations of the teaching output grant are determined on the basis of an “actual weighted total” of teaching outputs (in terms of funded units) produced by each university, applied to the actual student graduate headcount. There is no distinction between the teaching outputs of distance and of contact programmes. The weight per qualification is shown in Table 7.

Table 7. Funding weight per graduate student for contact and distance programmes

Teaching output programmes	Weightings
UG certificates and diplomas (1 year)	0.5
UG certificates and diplomas (2 years)	0.5
UG certificates and diplomas (3 years)	1.0
UG 1 st bachelor’s degrees (3 years)	1.0
UG 1 st bachelor’s degrees (4 years or more) NQF 7	1.5
UG 1 st bachelor’s degrees (4 years or more) NQF 8	1.5
UG B Tech (1 year)	1.5
UG advanced diplomas (1 year) NQF 7	0.5
PG certificate in education (1 year) NQF 7	0.5
PG diplomas and post-diploma dipl/cert (1 year)	0.5
PG bachelor’s degrees and advanced bachelor’s degrees	1.0
Honours degrees/higher diplomas/post-grad dipl (1 year)	0.5
Non-research master’s degrees and diplomas	0.5

Source: DHET, 2020a.

3.6.4 National Student Financial Aid Scheme

As mentioned earlier, the government’s NSFAS funding is intended to increase access through fully subsidised funding for poor and working-class students from families with gross combined annual incomes of up to R350,000.³ Students on the bursary scheme are covered for actual tuition and learning support materials, as well as subsidised accommodation and subsistence, or transport costs if living at home.

Based on the 2021 DHET Grant Funding Guidelines, distance education students are not eligible for living allowances but receive an expense allowance of R2900 if they are registered for a full-time equivalent of 120 NQF credits.

3.7 Income from Fees – a Comparison Across Three University Types

The study undertook to compare student fees across three university types (distance, dual-mode and contact), based on the 2022 fees rates advertised on the university websites.

Figure 2 shows the fees per qualification. The figures were calculated using the advertised fees per qualification year for each of the three or four years of the qualification. The figure compares the composite qualification cost of eight qualifications. Fees are typically charged per module needed to make up the credits for a particular 120-credit year. Where ranges were given, the average amount was taken. The fee structures for the following undergraduate degrees were calculated:

- Bachelor of Commerce (BCom) – 3 years
- Bachelor of Arts (BA) – 3 years
- Bachelor of Science (BSc) – 3 years
- Bachelor of Law (LLB, undergraduate) – 4 years
- Bachelor of Science/Engineering (BEng) – 4 years
- Bachelor of Education (BEd) – 4 years

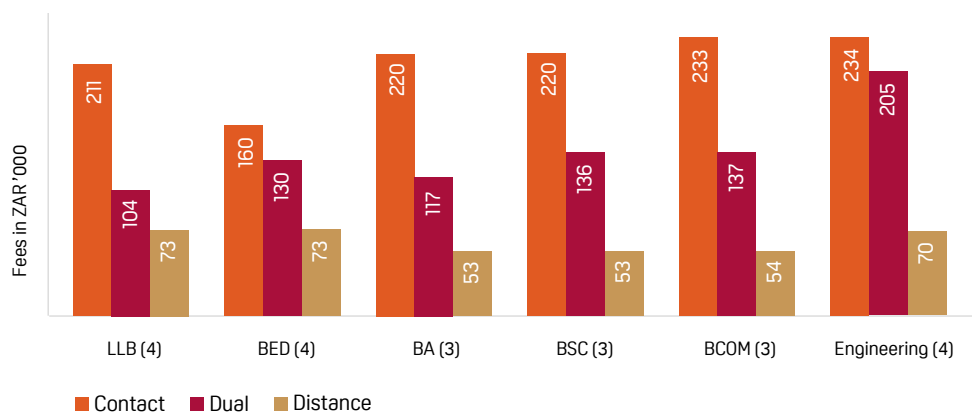


Figure 2. Total fees charged for a graduate per qualification, by learning mode.

³ University students who entered their studies prior to 2018 qualify for a grant according to the previous threshold of R122,000 per annum family income.

As indicated in Figure 2, the fees for a distance learning qualification are approximately a quarter of the fees for the same qualification at a contact institution, and approximately half the cost of a qualification at a dual-mode institution, assuming the student completes in the minimum time.

While the fees charged for dual-mode/blended programmes were considerably lower than those of contact-mode qualifications, the one exception was Engineering, where the relatively high costs are due to the high costs of laboratory equipment, maintenance, and the supervision of students during their laboratory work.

3.7.1 Efficiency ratio

Rumble and Koul (2007) argued that in any system where the average cost of a student/graduate in the distance mode has been compared with the average cost in the traditional mode, it is possible to establish the ratio of these costs by dividing the average cost in the distance mode by the average cost in the traditional mode. Applying this (albeit crudely), the Unisa BA average annual cost of R17,666 divided by the average annual cost of the BA year qualification of the contact university, as shown by the blue bar in Figure 2 at R73,333, yields a ratio of 0.2409.

Rumble and Koul (2007) called this the *efficiency ratio*. The efficiency ratio is useful for comparing the relative efficiency of any distance teaching system with traditional systems in the same jurisdiction, allowing comparisons to be drawn across jurisdictions. A ratio of:

- 1.0 means that the distance system is as efficient as the comparator system
- less than 1.0 means that the distance system is more efficient than the comparator
- greater than 1.0 means that the distance system is less efficient than the comparator

Rumble and Koul (2007) pointed out that some studies also sought to establish the comparative cost of producing a graduate but using the costs of the three-year qualification, as presented in Figure 2. They indicate that in looking at the cost per graduate, given that graduate status represents an achievement of at least a minimum standard, these studies do consider the quality of the output. On the face of it, there should be a direct relationship between the cost per student and the cost per graduate, such that if it takes three years to graduate from a programme, then the cost per graduate will be three times the annual cost per student. However, it is recognised that low throughputs and high attrition rates contribute to a decline in relative efficiency.

3.7.2 Intra-institutional differences between distance and contact provision

Table 8 compares the fees in ZAR for a 480-credit four-year BEd degree within a dual-mode university. The table shows how the student fees were differentiated for the same qualification according to whether the student chose to study by the contact or distance mode.

Table 8. Comparison of fees in ZAR charged for distance and contact modes at a dual-mode university

Unit cost	Contact	Distance
Per year (120 credits)	29,150	22,700
Per 12 credits	2,915	2,270
Total for 480-credit qualification	116,600	80,800

As shown, the fees charged for students studying at a distance are about 69% of the fees charged for contact classes in the same institution. These figures reflect the average fees charged in a dual-mode university; however, the fee charges for both distance and contact modes may be affected by work-integrated learning, such as teaching practicums or work-based learning and laboratory work. Access can be increased by offering theoretical modules online. This could offer PSET institutions the ability to scale delivery and more rapidly meet the demand for skills development than could be done through brick-and-mortar institutions.

3.8 Costing ODL

With the range of possible permutations for ODL, the old “contact versus distance” learning dichotomy is rapidly becoming irrelevant, more so since the onset of the pandemic. In considering a cost analysis, the work of Rumble is still seminal. The following, based on Rumble (1997), highlights key terms used in ODL costing.

- *Direct costs* are directly attributable to an activity, such as the costs of course design, teaching time, student administration and student support.
- *Indirect costs* are more general course-related costs, such as “overhead expenses” that might be apportioned to an activity.
- *Marginal costs* are costs that would not have been incurred if the activity had not been initiated.
- *Cost analysis* refers to estimating all the costs pertaining to a particular activity, such as support staff, capital equipment, equipment maintenance, consumables, and use of joint facilities.
- *Unit cost* is used as a measure of resource impact for a specific unit of analysis — for example, the cost per student or cost per course module.
- *Fixed costs* do not alter when the scale of an activity increases (for example, telephone rental).
- *Variable costs* alter (for example, telephone usage charges are affected by the number of students).
- *Total cost* is the fixed cost plus all of the variable costs.
- *Opportunity cost* is the income or benefit lost in going ahead with an activity.
- *Cost-effectiveness* refers to the extent to which an institution or programme achieves a balance between cost, student numbers, and educational quality.
- *Cost efficiency* refers to the extent to which an institution or programme maintains a particular level of production. It thus refers to the “cheapness” of educational provision (Hoosen & Butcher, 2015; Rumble, 1997, Rumble & Koul, 2007).

The rapidity of technological changes has meant that learning methods have become more flexible, resulting in a convergence of face-to-face and distance modes of delivery, as reflected in the growing numbers of dual-mode institutions and many programmes offered using blended approaches. Given the absence of a clear dichotomy between contact and distance learning, there is a dearth of literature regarding the comparative costs. Some studies have focused on institutional costs, while others have considered public expenditure costs or total economic costs. Some focus on fixed costs, considering the initial costs, such as the costs of courseware development, while others focus on the technological infrastructure costs and the ongoing costs for maintenance and replacements that will vary over time. Nevertheless, the literature does suggest that ODL programmes can be more cost efficient than their conventional equivalents if they enrol sufficiently large numbers of students to benefit from economies of scale (Butcher & Roberts, 2004). As has been

indicated by the data above, the costs for distance education in terms of subsidy and fee income have been considerably lower those for contact modes.

Following Rumble's model, the literature on costing ODL programmes typically is concerned with seven main areas: costs borne by students, teacher costs, student support costs, instructional technology costs, material design costs, course delivery costs and administrative costs.

3.8.1 Costs borne by students

In face-to-face education and training, students' contributions towards their study costs usually comprise fees, textbooks and other educational or training materials, living expenses, accommodation, meals, travel, and possibly a loss of, or reduction in, income. As indicated in the next section of this report, additional costs such as procuring a device or mobile data costs to connect to the Internet are additional costs that need to be considered as institutions transition towards using more distance education approaches. As shown in the next section of the report, students have had many challenges engaging with remote learning, which brings with it added costs such as Internet charges, device procurement, as well as limited broadband and mobile data infrastructure availability. These are challenges to be mitigated when using ODL as a means for increasing access.

3.8.2 Student support costs

The costs to institutions of providing student support depend upon the number of enrolments, together with the lecturer-to-tutor, tutor-to-student, and student-to-student ratios. These ratios generally increase the direct cost of providing student services. With the transition to online modes, student support is increasingly moving towards online support by using e-tutors to support students — an area for tutors to develop new ways of engaging and supporting students. Learner analytics can lessen the reliance on tutors to diagnose and respond to learners' needs through real-time data collection and intervention, but remediation will still rely on dedicated lecturers (Butcher & Roberts, 2004).

3.8.3 Teacher costs

The possibility of increased lecturer-to-student ratios can lower costs per student, if sufficiently large numbers of students enrol for programmes, with the economy of scale offering a unit cost advantage. The DHET (2021b, p. 64), expressing concern about the increase in student-to-staff ratios over the preceding three years, stated that this has negatively impacted the quality of teaching and learning as well as the quantity and/or quality of research output. The DHET suggests that in the interest of quality, the academic staff complement actually needs to grow, with a view to meeting the student enrolment targets projected in the NDP. However, in contemplating the widespread adoption of blended approaches to teaching and learning as a result of the pandemic, the report (DHET, 2021b) considered the higher student-to-staff ratios and proposed that research would be necessary to establish how the blending of online plus contact modalities will affect these ratios and how such changes might influence costing models.

3.8.4 Technology costs

As this study shows, technology for online, mobile, blended and hybrid learning is essential. The costs include the initial purchase price of hardware; licences for software and related resources, such as connectivity fees; support, maintenance and replacement costs; and workforce training costs. During the pandemic, many institutions invested in learning management systems (LMSs) and related online learning platforms. Students also bore the technology costs of accessing learning.

3.8.5 Course design costs

The key to quality in ODL lies in the instructional design of the courses and programmes. This entails ensuring the links between the learning outcomes, integrated student support, methods of assessment, and ongoing evaluation of materials. Over time, the tools for online learning, such as devices and software for producing video and multimedia, have become cheaper and more readily available. However, the cost of digital data for online participation needs to be considered in courseware design as well as the higher costs of digital development, which will require expanding the courseware development team (Butcher & Hoosen, 2019).

3.8.6 Course delivery costs

While the cost of courseware design remains constant irrespective of the number of students enrolled, the dissemination of course materials has traditionally been considered a variable cost, increasing proportionally with increases in enrolments. This has been particularly variable with regard to the costs of printing and postage traditionally used in distance education. However, with the shift to online and e-learning, distribution costs will inevitably change. While the costs for development will remain constant, the cost of delivery may share characteristics of both fixed and variable costs. Some examples of these changes were evidenced during the pandemic, such as the lowering of communication costs as VOIP phone calls became more common, and platforms (such as Zoom, MS Teams and others) replaced teaching venues.

3.8.7 Administrative costs

In distance education, as in contact universities, the administration is a service, shared among a number of programmes. Investments in administrative systems for distance education are generally regarded as a fixed overhead but will vary when the system expands beyond a certain size, whereupon additional fixed investments will be required for the expanded administration (Butcher & Roberts, 2004). Rumble (1997) distinguished between fixed, variable and semi-variable costs, and it is clear that with the transition to digital learning, many of these cost categories will inevitably shift.

The following section considers the impact of the transition to distance learning and focuses on the shifts already evident in cost categories.

4. Survey on the Transition to Open Distance Learning

4.1 Background

This section seeks to explore how, through distance education, the higher education sector sought to respond to the challenges of delivering learning during the pandemic, the challenges faced and the opportunities that emerged. The study involved an in-depth assessment of the goals/objectives of the relevant programmes, their management and implementation arrangements, and the related costs and outcomes. Lessons drawn from best practice provide preliminary conclusions on the optimum scale of the programmes and the effects on quality and costing as well as on access equity, and sustainability of the programmes offered.

As mentioned, the Covid-19 pandemic brought about unprecedented changes to the educational landscape. To contain the spread of the virus, PSET institutions in South Africa, like the rest of the world, needed to close their educational facilities and were forced to continue their teaching and learning using emergency remote teaching. This section explores how HEIs responded to this transition.

The survey conducted for this study explored the extent to which institutions used ODL methods prior to the pandemic. It then explored the use of ODL subsequently, especially the extent to which the emergency remote learning mode was beginning to mature and be institutionalised into more established ODL modalities of teaching and learning in HEIs. As discussed in the previous section of this report, such large-scale expansion of HEIs using an ODL mode opens many opportunities for them to expand their reach and meet the demand for increased postsecondary education.

As discussed above, in South Africa, like the rest of Africa, this demand is intensified by the growing “youth bulge” of 18- to 24-year-olds, the rising demands for equity and access through education, and the increasing growth of a knowledge economy requiring high-level skills. Taken together, these factors make it difficult for any emerging economy to afford the expansion of traditional universities on a scale that might meet the demand. Alternative models enabled by ICT technologies are critical for increasing coverage, with ODL offering opportunities to meet the ever-growing demand for access to PSET.

4.2 Methodology

This study undertook to explore how HEIs transitioned their programmes from largely face-to-face teaching to using online modalities and how these changes might inform their future policies for provision. It considers the survey responses provided by the Deputy Vice Chancellors for Teaching and Learning/Academic or their delegated representatives, who were responsible for teaching and learning.

A questionnaire was administered to the Deputy Vice Chancellors of all 26 South African public universities. Respondents were required to consider their mode of teaching prior to the pandemic, which, as this report shows, was largely contact and campus based. Respondents were then required to contemplate their teaching subsequent to the onset of the pandemic and up to the end of 2021, by which time it was found that all the HEIs had seemingly adopted and matured into the new mode.

The survey questions required respondents to indicate the extent to which they agreed or disagreed with statements about changes in teaching and learning at their respective institutions and how these were experienced by staff and students. A five-point rating system was used, from “totally disagree” to “totally agree,” to obtain a granular view on various items. However, it was decided to conflate the categories “totally agree” and “agree,” as well as “totally disagree” and “disagree,” yielding a three-point scale with the middle rating noted as “somewhat agreeing/disagreeing” for the purposes of reporting. The survey was administered as a Google Form to all 26 public HEIs in South Africa and two TVETs who had been using distance education modalities and comprised a mix of quantitative and open-ended qualitative questions. Each of the four sections of the survey instrument concluded with open-ended questions linked to the section’s area of focus, to obtain more qualitative reflections.

The Google Forms survey link and letter of participation were emailed to respondents on two occasions and thereafter, the link and a covering letter were sent via WhatsApp. It was found that this latter mode of distribution was more effective than distributing the link by email. Mobile phones have become essential research tools and offer many advantages as a method for data collection, especially under the restrictive Covid circumstances during which this study was conducted.

This survey was complemented by in-depth interviews with representatives of purposively selected HEIs. These were then used as data for this study and to report on ICT/ODL policies, cost-effectiveness, infrastructure, access, equity and quality, and changes or way forward.

4.2.1 The instrument

The Google Forms questionnaire included 60 closed questions and ten open-ended questions that allowed the respondents latitude to reflect on the topics being explored. The qualitative responses were used to interpret the quantitative findings. The various sections explored the abovementioned key elements, with each of the survey sections concluding with open-ended questions. The sections of the survey were as follows:

- Section A: Biographical information on the university type and size was sought.
- Section B: Considered teaching and learning prior to the onset of the Covid pandemic. This was to establish the extent to which institutions utilised ODL methods and digital learning, with the open-ended question focusing on students’ participation in their learning prior to the pandemic.
- Section C: Considered students’ current experiences of teaching and learning and included 18 fixed-answer responses, plus reflective questions requiring respondents to comment on how students adjusted to the changes in teaching and learning as necessitated by the pandemic.
- Section D: In this section, respondents were required to contemplate how teaching and learning had evolved since the onset of the pandemic, from the vantage point of lecturers and based on their experiences over the preceding two years. There were 14 fixed-response questions and three open-ended questions, which focused on (i) the adaptations required of lecturers to adjust to the changed mode of teaching, exploring lecturers’ preferences for post-Covid teaching, (ii) considerations of best practices that emanated and gained traction during the transition to ODL, and (iii) exploring how work-integrated learning was (and might be) dealt with.
- Section E: Explored the costing of the two approaches and institutions’ views on the way forward.

4.2.2 Participating institutions

While Unisa is the only dedicated ODL university, it was found that most universities had to some extent used distance methods, and they categorised themselves as being either:

- contact and campus based or
- blended
- hybrid
- fully online
- dual mode

The breakdown of institutions that responded is as follows:

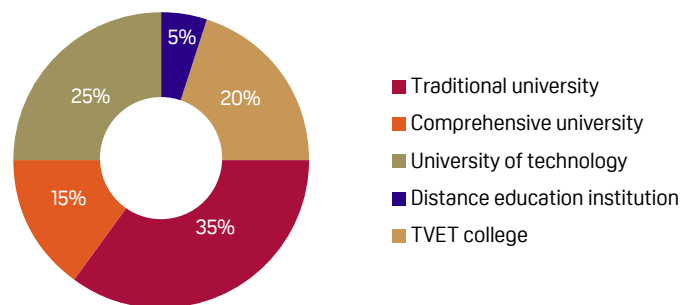


Figure 3. Breakdown of participating institutions.

A total of 18 institutions responded to the survey, of which two were TVET colleges. The responding institutions' 2021 enrolment numbers ranged from 4,918 to 376,912 students, and the 18 institutions collectively reflect a total of 647,594 students.

4.3 Access, Quality, Costs and Equity

4.3.1 Teaching and learning prior to Covid-19 onset

Section B of the questionnaire considered the extent to which online teaching was used by the institution prior to the pandemic, either as the dominant mode or as part of the teaching approach. Understanding the mode of teaching and learning prior to the onset of the pandemic gave insight into the baseline and was able to yield comparative data, as well as offering means to explore “the way forward” as institutions envisioned their post-Covid teaching and learning strategies. This was operationalised by considering various facets of access and quality, as well as costing, equity and inclusivity. These are discussed in the following ten subsections.

4.3.2 Access: ODL methods as dominant or frequent mode of teaching

This section of the survey focused on the extent to which the various institutions had previously utilised online/digital assistive and distance learning prior to the onset of Covid-19, by exploring:

- the previous use of online methods
- students’ experience and skills in using ICT/mobile devices to support their learning
- students’ participation in learning, and the extent of collaborative or peer learning
- the frequency of students’ usage of institutional counselling services

Figure 4 presents an overview of the responses obtained. This figure shows that online methods were less frequently used for teaching and that prior to the pandemic, students lacked both learning devices and skills. This serves to explain the many problems that students and institutions experienced early in the transition to emergency online teaching and learning in the first part of 2020.

More positively, approximately 40% of the respondents agreed with the statement that students’ class attendance had been good prior to the pandemic and that their students had engaged in high levels of collaborative or peer learning (42%) — a practice that seemed to increase, albeit more digitally, after the onset of Covid-19.

Approximately half of the respondents also agreed or somewhat agreed that students frequently used the institutional counselling services prior to the onset of Covid-19.

The following figures show the respondents’ views on the extent to which their institutions used online as a dominant mode or only used online some of the time.

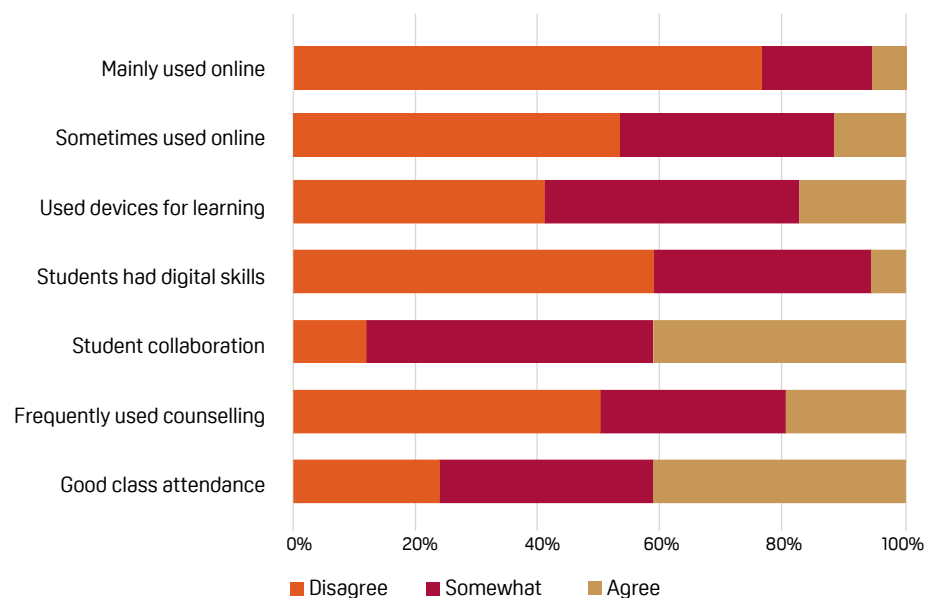


Figure 4. Modes of teaching and learning prior to Covid-19.

Figures 5 and 6 show the extent to which respondents concurred that their institutions had used online/digital methods prior to the pandemic.

- As indicated in Figure 5, only 6% of the respondents agreed that their institution utilised online or distance methods as a dominant method.
- Figure 6 indicates that 53% of the institutions stated they had not used distance methods, not even “some of the time.”

- Figures 5 and 6 suggest that online learning was previously only used to a limited extent across South African HEIs, and they point to the enormity of the challenges and adaptations that institutions faced to ensure the continuation of teaching and learning in 2020.

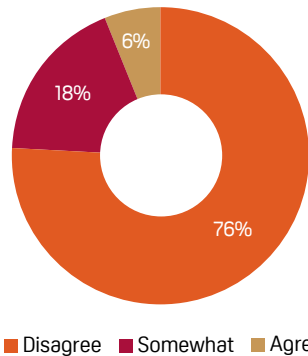


Figure 5. The use of online as a dominant mode.

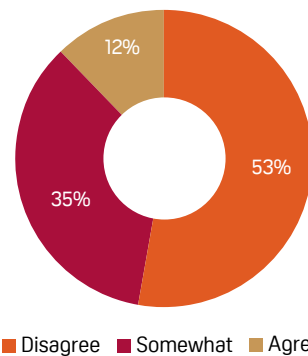


Figure 6. Had "sometimes" used online.

4.3.3 Access: Students' experience and digital abilities

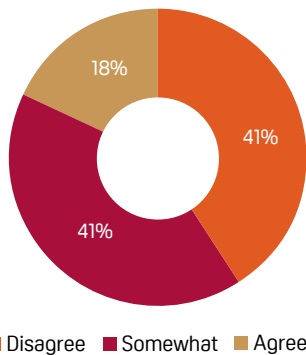


Figure 7. Previously used ICT to support learning.

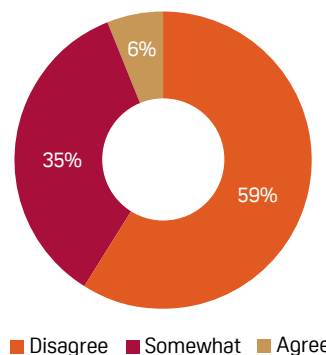


Figure 8. Students had optimal digital skills.

Students' experience with digital learning was further explored. As shown in Figure 7, only 18% of respondents indicated that students had used devices for learning prior to the pandemic, while 41% of the respondents "totally disagreed" with the statement that students had utilised devices to support their learning, and as Figure 8 shows, 6% of the respondents were of the view that students had optimal digital skills for learning prior to the onset of the pandemic. The low level of digital usage and skills supports the initial transitional difficulties that many of the respondents referred to in their qualitative responses and suggests the need for extensive capacity development among the classes of 2020/2021 and subsequent cohorts of students.

These findings corroborate other studies which have found that despite the increased use of social media platforms across the world, high numbers of students did not have optimal digital skills, and their lack of digital fluency would have made the rapid shift to remote and online learning a significant challenge. Several studies refer to the challenges faced by students who are "digitally marginalised" by having low ICT competencies and/or less than optimal access to devices or connectivity (DHET, 2020b; McKay, 2022).

4.3.4 Access: Students' participation in learning

The first set of open-ended questions (in Section B of the questionnaire) required respondents to contemplate the mode of teaching prior to the pandemic. Many of the respondents referred to the “prior” mode in relation to the current online mode of teaching. The following responses indicate the “prior” situations:

- “Although I am from a contact institution, students went online to supplement what was presented in class.”
- One of the respondents pointed out that student attendance at classes was ensured through “capping attendance at a minimum of 80% otherwise a student will not qualify for examinations. Other modes of guaranteeing participation were needed subsequent to going online.”
- Another pointed out that prior to the pandemic, teaching “was largely restricted to face-to-face interactions whereas during Covid students could participate in their learning at any time as study materials were posted online.” However, “where students had a choice, they preferred the delivery of hard copy material and used online resources as an additional support.”
- A respondent from a traditionally contact institution explained how attempts to return to contact teaching were constantly thwarted by changes in the country’s Covid-19 protocols. The respondent points out that there were periods when class sizes made contact teaching possible. “After Covid-19 kicked in, the lecturer to learner ratios were dropped in an endeavour to maintain social distancing so learners could attend face-to-face classes, but this increased the costs of tuition.”
- Another respondent focused on the use of digital devices, stating that they were not commonly used for teaching and learning prior to Covid-19, and that “lecturer and student devices have always been a huge challenge as neither had laptops nor other devices that can be used for online learning.”
- Another stated that their institution is a “typical contact institution [with] students with limited resources. Many students, at least in the case of students who enrol for the programmes offered at my campus come from poverty-stricken rural areas and schools with little or no digital tech. The digital divide and subsequent digital exclusion are particularly prevalent among these students.”
- One of the lecturers explained the difference between pre- and post-Covid-19 teaching: “Students previously engaged with their lecturers mainly in the classrooms, although a small percentage of students tended to miss classes. Only about 20% of the academics used blended learning. The tutorial system presented an opportunity for students to engage with their peers. They were able to access on-campus counselling services in person, but this all changed during the hard lockdown and introduction of online services and group counselling. Surprisingly, this seemed to be preferred by students.”
- A Unisa respondent pointed out that “for the past few years the university had plans of moving to fully online teaching but there was resistance from students who felt they were already marginalised and that their low ICT skills and poor access to devices and the internet would bring about a further layer of disadvantage. However, with the lockdown students had no alternative and they proved to be incredibly resilient and innovative.”

4.3.5 Digital access to remote online teaching and learning after the onset of the pandemic

The questions in Section C of the questionnaire pertained to the students’ current experiences of teaching and learning in the context of the 2021 academic year — i.e., the second year of the pandemic — and respondents were required to indicate the extent to which they concurred with the following statements, based on their experience of the 2021 academic year.

- My institution has used online teaching as the dominant mode since the onset of Covid-19.
- All students have access to ICT devices.
- The institution provided students with mobile data bundles to connect to the Internet.
- Many students share devices with others — e.g., friends or family members.
- Smartphone chat groups are commonly used to communicate with students.

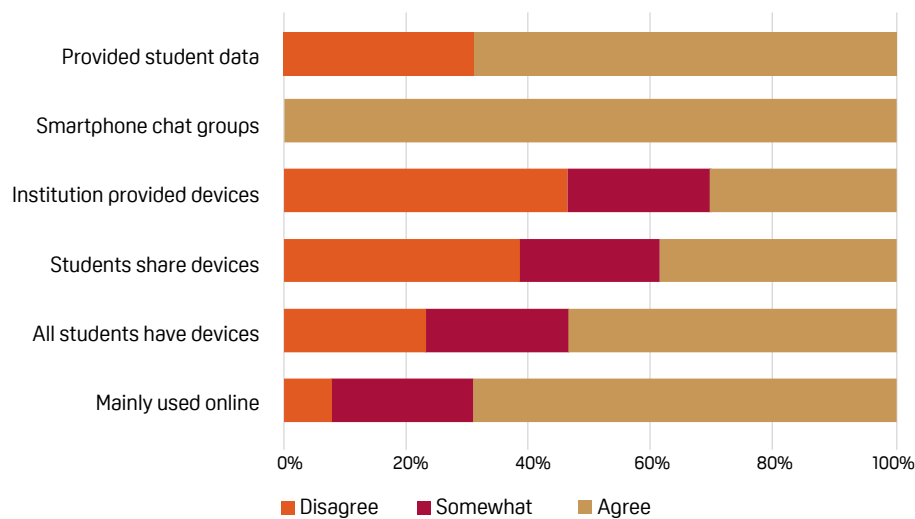


Figure 9. Students' digital access after Covid-19.

As shown in Figure 9:

- The majority (92%) of the respondents agreed/somewhat agreed that online teaching had become the dominant mode after the onset of the pandemic
- Approximately 48% of the respondents disagreed/somewhat disagreed that students had access to devices
- 38% agreed/somewhat agreed that students needed to share devices with friends, family members or others
- 65% disagreed/somewhat disagreed that their institutions had provided students with devices
- 70% indicated that their institutions had provided students with data bundles
- There was 100% concurrence that chat groups such as WhatsApp and Telegram were widely used as a means of communicating, showing the high reliance on mobile technology.

This latter finding concurs with those of Madiopo and Menzy (2021), who pointed out that after the onset of the pandemic, most higher learning institutions made use of social media.

4.3.6 Quality: How teaching and learning changed after the onset of Covid-19

Section C of the questionnaire further asked to contemplate the changes made to teaching and learning at their institutions since the onset of the pandemic. Respondents were required to respond to statements on the impact of the changed modalities on students in terms of the following:

- Whether online learning is more costly for students.

- The extent to which students' digital skills had improved over the past year.
- Whether institutions provide digital skills training for students.
- The extent to which assessments are conducted online and whether these are invigilated/proctored.
- The extent to which students used online library resources.
- The extent to which students collaborated with peers.
- Whether students presented with increased anxiety.
- Students use of counselling services.
- Changes in student pass-and drop-out rates relative to the period prior to Covid-19.
- Whether online learning had negatively impacted on learning.

4.3.7 Quality: Student digital competencies

The responses to the above statements show the extent to which institutions had transitioned from contact (or somewhat blended teaching) to using digitally supported distance modes, and how institutions increased their training to ensure that students acquired the necessary digital competences to cope with the new modalities.

The findings suggest that there had been a considerable improvement in students' digital abilities two years into the pandemic, with respondents reporting an increase from 6% competence prior to the onset of Covid, to 60% being considered competent at the time of the survey.

Moreover, it was found that 60% of the respondents concurred that their institutions had provided support and digital skills training for students who needed this.

The qualitative responses to the open-ended questions in this section of the questionnaire refer to both synchronous and asynchronous teaching being offered to ensure that students could access learning at varying times, and to enable students to undergo online assessments and, in some cases, be invigilated/proctored.

The respondent from Unisa pointed out that providing remote emergency teaching and learning modes for more than 400,000 students in 2020 made visible the challenges of the digital divide and other socio-economic challenges, such as students not having adequate learning spaces at home. The challenges of emergency remote teaching were more complex than either having or not having digital access, and it soon became clear that access was not simply about the dichotomy of the digital “haves” and “have-nots.” Rather, access was nuanced and far more complex than initially surmised. Students' access to devices and connectivity intersects with digital competencies to create digital risk for the student in terms of ability to access and navigate online learning (McKay, 2022). Ideally, students need to have high fluency in digital skills as well as access to optimal digital tools and connectivity.

Most of the universities surveyed provided students with mobile data bundles, as the cost of data for many families is prohibitive, often competing with other household needs such as food. Students in the CHE study commented on the excessive amount of data needed for learning (CHE, 2020, p. 48), the challenges with poor reception, as well as problems with the constant load shedding experienced in South Africa. The following are some of the comments gathered in that study:

- Lecturers are not always understanding or reasonable in terms of the online classes. It uses more data than is provided, and it can sometimes be lengthy, and unnecessary video meetings only benefit those with unlimited internet access.

- Difficulties with synchronous learning, e.g., live chats where other students struggle to get access because of Eskom [electricity supplier], data, connectivity or platform issues.
- Some tutorials I missed due to lack of data or poor connectivity and as they are not recorded it was not good. Scheduled tests that happen at a specific time are hard as I faced connectivity problems and some tests I had to submit without finishing.

These kinds of problems have been persistent across institutions, with load shedding, unreliable provision, or no electricity being major obstacles to online learning and assessments. Notwithstanding its ODL status, Unisa also reported challenges in shifting its students from a blended mode to a fully online mode. The digital divide was acute at Unisa, which serves a large majority of African students who reside in rural areas, urban townships, and informal settlements — areas with high poverty rates. Approximately 50% of its students are supported by the government’s National Student Financial Assistance Scheme.

4.3.8 Quality: Student pass rates and dropout rates

This section of the survey required respondents to indicate the extent of their concurrence with the following statements:

- Student dropout rates are higher than before Covid-19 (9% agreed).
- Student pass rates are lower than before the onset of Covid-19 (18% agreed).
- ODL learning has negatively impacted on pass rates (18% agreed).

The low rate of concurrence with these statements shows that teaching and learning were not negatively impacted by the shift to online, modalities nor did attrition rates increase.

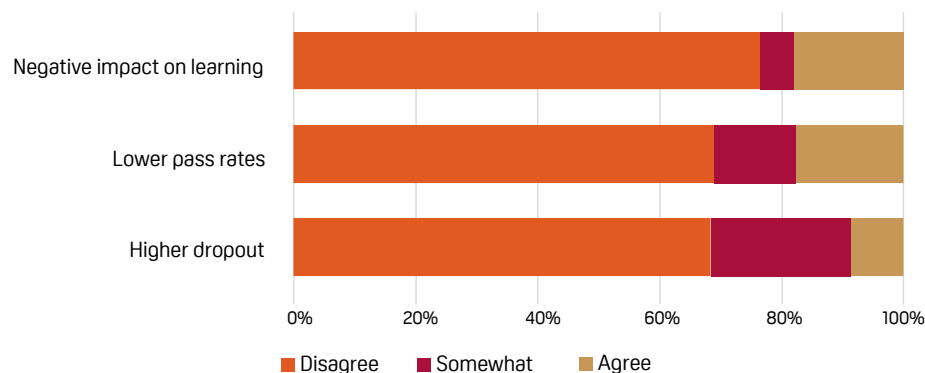


Figure 10. The impact of online teaching and learning.

As shown in Figure 10, most respondents did not agree that the shift to distance or online teaching had negatively affected pass rates or learner retention.

Some of the respondents elaborated on their responses in the open-ended section, stating:

- There have not been any dramatic changes in either pass rates or student dropout rates.
- Pass rates seemed to remain within the same range as before.
- With the number of concessions we made to accommodate students, we did not see any increases in dropout rates. We accommodated students as best we could to retain them.

- With the hard lockdown, students were more or less confined to their homes. During that period, we received a record number of assignment uploads. Their pass rates were comparable with the previous year and there were fewer academic cancellations than we had experienced in previous years.

Feedback from the DHET (personal communication, 13 January 2022) indicated that “the DHET will only be able to determine the actual dropout number/percentage once the final audited 2021 HEMIS data are received. These will be used to map the 2020 data to determine the actual dropouts in 2020, and the 2022 data will determine the 2021 dropouts.”⁴ Additionally the DHET respondent pointed out that:

- There were 237,882 graduates in 2020, which is an increase over the 2019 graduate number of 221,942.
- We are currently generating all the tables required for the new cohort study report, and this document should be available at the end of March 2022. This document will include the graduates of 2020.

4.3.9 Costing of the new mode in relation to contact teaching and learning

This section of the questionnaire considered the relative costs of online and ODL methods of teaching. Respondents were required to indicate their concurrence with the following:

- After the initial investments, online teaching was less costly than contact teaching.
- The institution provided data for lecturing staff.
- Lecturers bore unanticipated costs with the change to online teaching.
- The institution provided data for students.
- The institution will revert to its pre-Covid-19 mode of teaching as soon as this is possible.

Figure 11 shows the breakdown of responses to these questions.

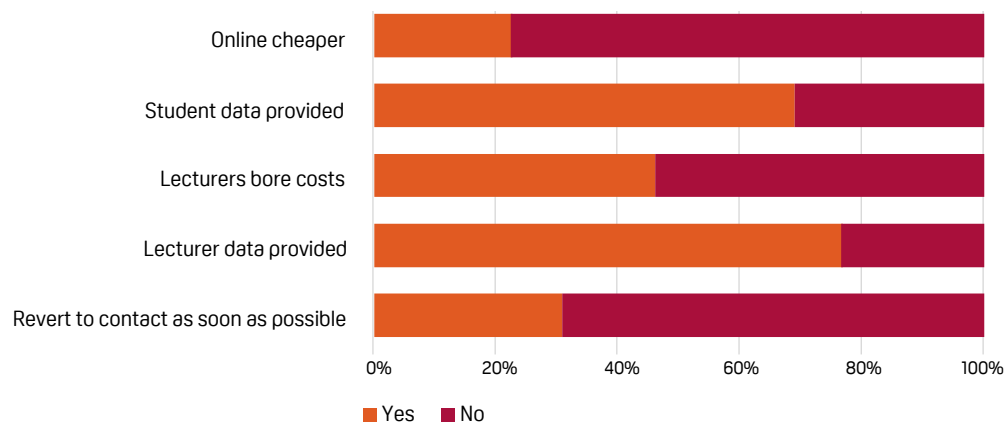


Figure 11. Cost considerations.

⁴ The audited statistics were not available at the time of publication.

4.3.10 Comparative costs of online and contact teaching modes

The respondents were asked to explain their responses on the relative costs of ODL in the open-ended question, which asked them to estimate the costs after the initial investments had been made. The following were some of the responses, which resonate with the cost drivers elucidate by Rumble (1997) and discussed in Section 3.8 of this report. The responses show the difficulty of costing, given that there is no longer a dichotomy between contact and ODL:

- It is difficult to cost in general.
- The initial costs of online learning are higher than contact but with passage of time the costs will begin to diminish.
- The institution had to invest in updating of ICT infrastructure and the design of new programmes.
- Furthermore, the administrative support staff had to be capacitated with hardware to provide support to academics. Some academics had to be assisted with new laptops to be able to perform their academic functions.
- The costs associated with online learning were not budgeted for and were not anticipated.
- The institution had to invest in proctoring tools and Turnitin and is currently changing its LMS all at high costs but once these are procured the costs will be lower.
- The university might have saved some costs in terms of travel etc., however the upkeep of the campus (cleaning and maintenance), the effect of social distances on the number of practicals and class size, have increased expenses.
- The maintenance and cost of labs and classrooms remains. Infrastructure for IT has increased.

Respondents were also asked what they perceived the general appetite to be for staff to return to the pre-Covid-19 mode of teaching:

- Both modes have pros and cons. Ultimately, blended teaching and learning could be an ideal mode to adopt.
- Staff saved money through reduced petrol cost. They would prefer to come back to contact teaching that is blended.
- The fact that the modules were not designed for online, means that there is no saving really. Synchronous teaching and learning is more time consuming and the fact that support staff are not on campus has caused administration to increase as well as frustrations [for lecturers who need to take on the load].
- It takes more time to prepare for online lectures, but these can be improved upon and reused. Load shedding has also been a challenge during power outages.

- As we were set up to be a contact institution, our ICT infrastructure and student devices require additional investments. Also, our students are from diverse backgrounds, so for some connectivity will be a challenge even if you provide data. We saved on other costs (printing, electricity, etc.) which enabled us to use savings to fund the online learning needs. But going forward, when everyone is back on campus, we need to figure out how to fund greater use of online learning and teaching, whether all students will be provided with data or whether those in residences will only use the university's Wi-Fi. We also must invest in more e-technologists and learning designers. Currently we fund these from the UCDG, but more permanent appointments are needed.
- Online teaching is definitely more expensive and time intensive than contact teaching modes if done properly and with the necessary quality assurance mechanisms in place.
- The cost for data, infrastructure, technological tools for teaching and assessment has been high.
- The institution had to invest in updating of ICT infrastructure and the design of new programmes.

4.3.11 Equity and inclusivity

Respondents were required to indicate the extent to which they concurred with the following statements that pertained to inclusivity of the mode or method of teaching:

- Online teaching was more accessible for students with disabilities. (80% agreed/somewhat agreed)
- Female students experienced more challenges with online learning. (85% disagreed/somewhat disagreed)
- The current mode of teaching improves equity of learning opportunities. (76% agreed/somewhat agreed)
- All students have access to devices. (76% agreed/somewhat agreed)
- The mode was more costly for students. (62% disagreed/somewhat disagreed)

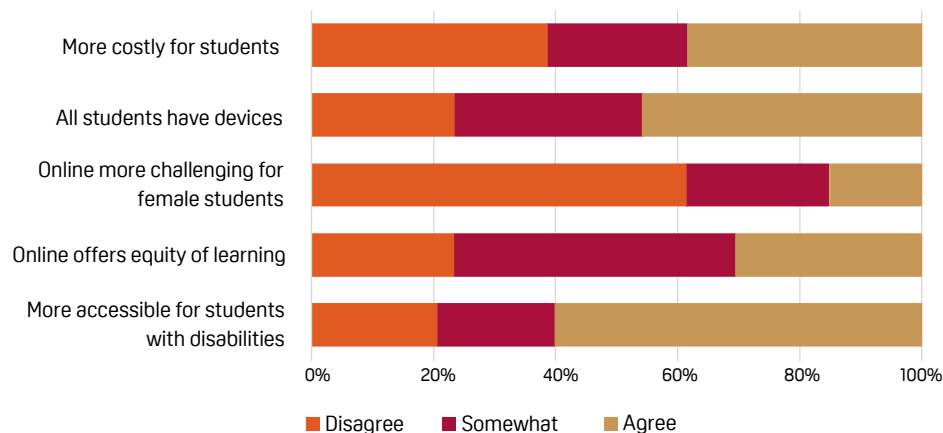


Figure 12. The extent to which ODL is inclusive.

As shown in Figure 12, there was a high degree of concurrence about approaches being more accessible for students with disabilities. Those respondents who disagreed pointed out the following:

- Students with disabilities were among the most affected, needing adaptive devices and supportive teaching tools that were not readily available, thereby threatening inclusivity.
- In contact sessions, the lecturers can work directly with students with disabilities to respond to their unique needs.
- Students with disabilities needed to adjust to learning with online tools as the primary medium.

There was a high level of disagreement that female students found the new mode more difficult. The relatively few respondents who agreed that online was more challenging for females referred to their disproportionate engagement with household chores, resulting in their learning in general being challenging as opposed to their technical ability being inadequate.

Approximately 76% agreed/somewhat agreed that students had own devices. While the numbers of learners with access to devices had increased, respondents concurred that the need for students to access devices is a critical feature of inclusivity. Respondents pointed to the fact that students bore higher costs with online learning, a factor some stated was contingent on whether institutions provided data and devices. One respondent mentioned that online approaches were more inclusive, since students did not need to travel to campus daily, so travel expenses were reduced. Another indicated that daily transport to campus was more expensive for students with disabilities since they often needed to be accommodated when travelling. Learning from home, at least some of the time, would have many cost benefits.

4.4 Challenges: Changing from Contact to Remote Mode

All institutions reported challenges with transitioning to digitally supported modes of learning. To mitigate difficulties and assist with decision making, the Council on Higher Education (CHE, 2020) produced its Quality Assurance Guidelines for Emergency Remote Teaching and Learning and Assessment During the Covid-19 Pandemic in 2020. The guidelines specifically refer to the differentiation of the sector, advising that decisions about the mode need to be informed by the differentiated and contextual circumstances of each institution's student and staff profiles, access, capacity, and readiness to make the necessary adjustments. The modality leap was huge, even for Unisa, which was using a blended approach at the onset of the pandemic. Unisa had been endeavouring to implement its Open Distance eLearning (ODeL) Policy (2018) by incrementally increasing digital support.

The following comments were made by one respondent on the challenge of changing from contact to remote mode:

- Initially the lockdown was for only 6 weeks. We assumed the institution would revert to its "normal" mode after the holidays. Little did we know this would continue for two years or more and everything needed to change.
- The rapidity of the changes to the academic calendar caused high levels of stress for lecturers and students. We made attempts to present lectures on a rotational basis with smaller groups of students (for purposes of social distancing). Academics changed their teaching and assessment plans and needed to make changes to the curriculum, looking for technological solutions.

- With this came the critical need for training staff and students on how to use technology for teaching and learning. Initially institutions presented rudimentary technical training on how to use the various platforms and resources that were available. It later became apparent that academics needed to go beyond merely understanding how to use their hardware. They needed to learn alternative pedagogies for online teaching, how to teach using blended and hybrid modes. The usual institutional staff development training needed to be reconceptualised to focus on the methodologies and philosophies underlying remote teaching. They had to learn teaching using synchronous and asynchronous methods.

Another respondent commented on the future of digital teaching:

The next generation of school leavers will all have had at least 2 years of online learning experience. We will not be receiving students who have not had any exposure to distance learning. Their problems will be largely access to devices and the internet, but I believe they will have much better digital skills than previous cohorts of school leavers.

4.4.1 Assessments in the context of online

Respondents were required to indicate their concurrence with the second cluster of statements, which considered the implementation of formative and summative assessments. They were asked to indicate the extent to which they agreed with the following statements:

- Most examinations/summative assessments are invigilated or proctored. (92% agreed/somewhat agreed)
- Most formative assessments are conducted online. (65% agreed/somewhat agreed)

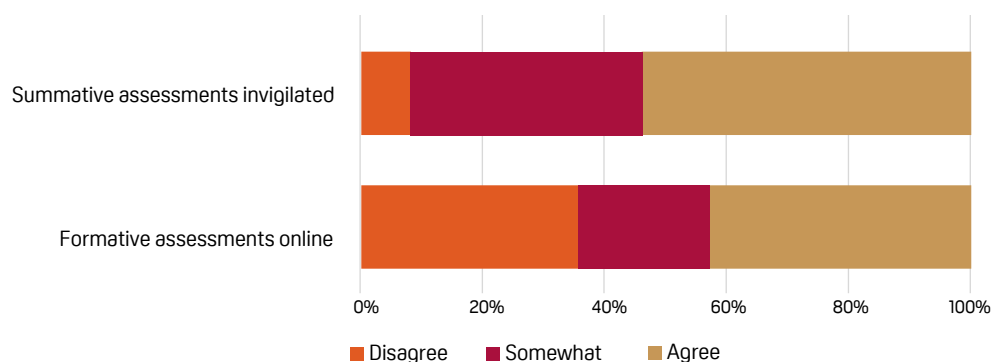


Figure 13. Formative and summative assessments.

As indicated above, approximately 60% of the respondents agreed/somewhat agreed that their institution had utilised online modalities for formative assessments. It was found that online assessment methods were more frequently used for summative assessments and that these were either proctored or invigilated. As indicated, 92% of respondents said their institutions had either proctored or invigilated these assessments. Since it was unclear from the survey whether the invigilated/proctored examinations were venue based (as a few institutions had conducted venue-based examinations), clarity was sought in follow-up interviews with a sub-sample of respondents. It was found that the pre-planned venue-based assessments needed to be replaced with a range of alternative assessment approaches — including take-home examinations, open-book examinations, randomised multiple-choice questions, continuous assessments, oral examinations, online timed examinations, and e-portfolios.

In order to ensure the integrity of online assessments, a range of proctoring or invigilation tools were introduced, and similarity tools were used for those that were not proctored. Innovative use was made of a low-tech mobile application that made it possible to monitor students without a high-speed Internet connection, which many students in the rural areas do not have. The application used minimal mobile phone battery and Internet data whilst monitoring the environment, recording any speech, and using photo authentication tools (“selfies”), amongst others, to mitigate examination irregularities.

In some cases, professional bodies insisted on venue-based examinations, and these were conducted in accordance with health protocols under the usual invigilation conditions. Practicums often took the form of simulations — an approach to be drawn upon for the future — and work-integrated learning, including teaching practicums, needed to be aligned with the changes in lockdown levels.

4.4.2 Student collaboration, student anxiety

The following cluster of statements in the survey considered student anxiety:

- Students have increased levels of anxiety. (70% disagreed/somewhat disagreed)
- Students use institutional counselling services more frequently than before. (42%) disagreed/somewhat disagreed)
- Students work collaboratively with peers. (33% disagreed/somewhat disagreed)

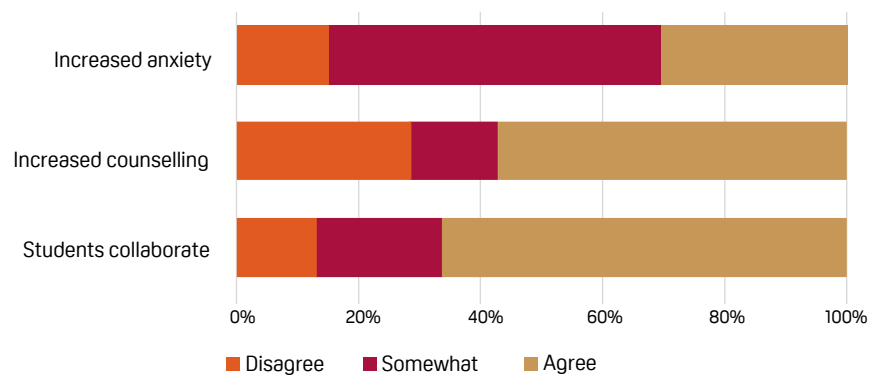


Figure 14. Student anxiety and collaboration.

From the responses received (Figure 14) it appears that student collaboration increased subsequent to the change of mode, with 66% of the respondents fully agreeing that students collaborate (compared with 42% prior to the pandemic). The follow-up interviews showed that virtual communities and a range of chat groups had contributed to increased (albeit online) student interaction and collaboration. Approximately 30% of the respondents agreed that students were more anxious, and 58% indicated increased usage of counselling services. (This was 8% higher than the frequency of usage prior to the pandemic) However, as one of the respondents pointed out:

The psychosocial challenges of students were not only linked to online learning and teaching, but probably more linked to the isolation, academic loneliness and other socio-economic problems experienced in the pandemic.

Another respondent explained:

Although anxiety levels are still high, students have adjusted to processes and protocols during the course of the past year and are engaging online more successfully than previously.

Respondents also commented on how students responded to online assessments:

- Students realised they had to overcome first-order barriers — lack of access to devices and the Internet — and some purchased devices. During our first fully online proctored summative exam in November 2021, the university made loan devices available. Some students did not cope well with the change due to their lack of digital skills, and some simply resisted technology.
- Students had to adapt to online learning and assessment and use the institution's LMS and other educational technologies for learning and engagement with their lecturers and peers.
- They were inducted into learning online and could access learning materials in their own time. Some were, however, anxious and needed more support and counselling to cope with their studies. Many struggled with connectivity during hard lockdown, and this group was prioritised to come back to campus. Priority was also given to first-years to be on campus in order to assist them with the transition from school to university.

It is important to note that the CHE study (2021, p. 45) shows that references to mental health and anxiety were common in their survey of students, who referred to the challenges they experienced with technology and learning. Some of their comments included:

- My mental health did not allow me to cope with the workload.
- Uncertainty whether you submitted at the right place. And also, the technical issues contributed to anxiety, stress and depression especially when a particular assignment/quiz is about to be due.
- Having to deal with mental health issues as well as completing and submitting assignments and actively engaging in online work. Another problem was having data bundles run out.

4.4.3 Student adaptation

The survey made provision for open-ended responses on how students had adjusted to the shift from contact to distance modes of teaching and learning. The responses suggest a need to guide students on how to work autonomously so that a more flipped classroom approach could be used, where students worked on their own and then participated in lessons on the various platforms:

- Students have had to study more on their own because of the rotational timetable.
- Students accessed online resources and depended on lecturer and peer assistance to adjust.
- The university conducted a capacity building workshop for staff and students on the use of various multimodal platforms for online teaching, learning and assessment.
- Students rapidly adjusted to learning at a distance. And we as a university strove to be more flexible to accommodate students who also had personal challenges at home.

4.4.4 Inclusivity: Socio-economic challenges

Many of the respondents referred to the challenges faced by indigent students in terms of gaining online access. As Figure 12 shows, approximately 38% of the respondents agreed that students incurred more costs with the new mode of teaching. A further 62% agreed somewhat and qualified this response in the

open-ended section, indicating this was contingent on the contribution made by the institution. In this regard, respondents pointed out:

- Obviously, socio-economic circumstances made it difficult for students especially with expensive data. The digital divide meant that students did not have access to devices, data and optimal digital skills.
- We made our computer labs available to students without devices, which is why many students returned to campus to learn online. Students on NSFAS are finding laptops unaffordable and some returned theirs in 2021. This is an issue as there is not equity of access to mobile devices for all students to learn anytime anywhere.
- Many self-funded [students] left residence and worked [i.e., studied] from home, often with poor environments, poor connectivity and having to incur expensive mobile data costs.
- NSFAS provided its beneficiaries with devices. This was very necessary.

Other responses referred to student resilience in “finding a way” to learn:

- Our diverse students found their own way via a range of alternative routes to adapt to and cope with online teaching and learning.
- Despite students resisting online learning [with the pandemic] they had no option and had to adapt to the new mode of teaching.

Clearly, any ODL endeavour in South Africa will need to consider students’ social contexts and the many socio-economic challenges that hinder all learning, but especially remote learning, which relies on bridging the digital divide in all its dimensions. The CHE Remote Emergency Guidelines stress the need to consider the context:

The existing contextual and differentiated nature of the HEI sector in South Africa has been underlined by the responses to the pandemic and strategies for emergency remote teaching and learning. . . . response in South Africa should be differentiated and contextual and based on student and staff profiles, access, capacity and readiness to make the necessary adjustments. (CHE, 2020, p. 9)

4.5 Innovations or Adaptations for Quality Teaching and Learning

4.5.1. The changing role of lecturers

This section of the survey considered teaching and learning as it had evolved over the 18 months after the onset of Covid-19. Questions focused on how lecturers needed to modify their roles and whether this impacted their research outputs. The survey explored respondents’ views about how lecturers adapted to the remote mode of teaching and learning, the approaches used to mediate learning, and the extent to which respondents considered online learning inclusive.

4.5.2. Adaptation to remote teaching and learning

Respondents were required to consider the extent to which they concurred with the following statements:

- Lecturers needed to be trained to transition to teach using online modalities. (Almost all agreed)
- Lecturers used synchronous methods. (70% agreed/somewhat agreed)

- Lecturers used asynchronous methods. (72% agreed/somewhat agreed)
- The curriculum needed to be abridged. (70% disagreed/somewhat disagreed)
- It was possible to complete the academic year. (100% agreed/somewhat agreed)
- Lecturers report that the current mode of teaching is more labour intensive. (85% agreed/somewhat agreed)
- Downloadable materials were available. (fewer than 10% disagreed with this statement)
- Lecturers would benefit from having IT specialists to assist with teaching. (85% agreed/somewhat agreed with this statement)
- It has been more difficult to assure the quality of online teaching. (70% disagreed/somewhat disagreed)
- Lecturers have had more time for research. (83% disagreed or somewhat disagreed)
- Lecturers would prefer to return to a fully contact mode after Covid. (about 48% disagreed/somewhat disagreed)

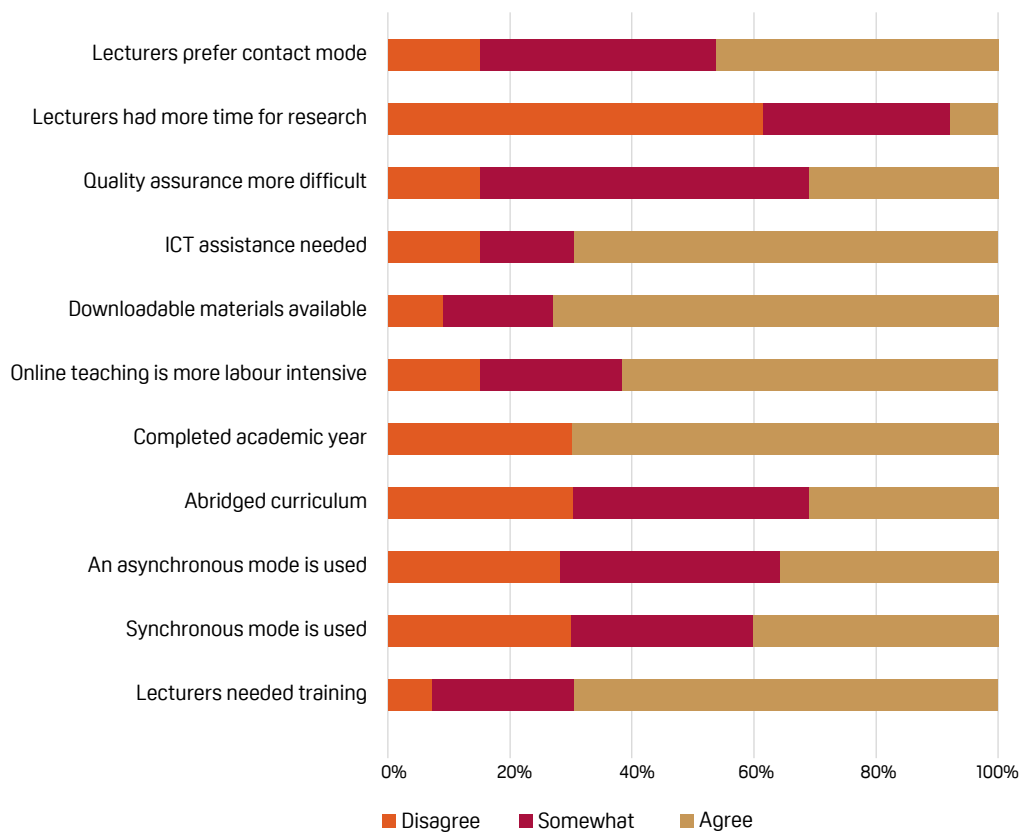


Figure 15. The impact of online teaching on lecturers.

As shown in Figure 15, approximately half of the respondents indicated that lecturers would prefer to return to a fully contact mode after Covid-19. The qualitative responses, however, elaborated on lecturers preferring a more blended or hybrid approach.

Respondents concurred that lecturers found distance education to be more labour intensive, leaving them less time for research. In line with their view of the labour intensity of the new mode of teaching, with the majority of the respondents agreeing that lecturers would benefit from having ICT specialists to assist with online teaching. The type of specialist support was defined by one of the respondents, who stated that IT specialists needed to have “expertise in digital courseware design which is a specialist skill.”

Another respondent pointed out:

Lecturers do not need IT specialists they need e-technologists and learning designers to assist them. Lecturers adjusted in varied ways, depending on how digitally literate they were and the extent to which they had actively used our Moodle LMS pre-Covid-19. The majority now indicate that they will use a flexible mix of learning and teaching modes, with some things only being taught online, and others in contact situations to produce more digitally literate graduates who can regulate their own learning.

Only 17% of the respondents concurred that it has been more difficult to assure the quality of online teaching.

4.5.3. Adapting to distance learning

Respondents pointed to the way in which lecturers drove the transition to distance learning in their respective institutions, indicating that lecturers were mostly willing to put in extra effort to ensure they supported students during the transition:

- Most lecturers had to work extra hours and after the onset of Covid-19, they wished to deliver online.
- Lecturers had to expedite the move to fully online teaching and had to adjust to new processes and protocols in terms of assessment. Although the adjustment process had some teething challenges, the adjustment went better than anticipated probably because the institution was already moving to fully online teaching and learning.
- Those lecturers who were not using blended learning before the onset of Covid-19 adapted with much difficulty to the changed mode of teaching and learning. Some who were creative and innovative, enjoyed teaching online and will be continuing with this mode in 2022 and beyond.
- Academics were very committed to their students during the lockdown. They understood their challenges and were available at any time 24/7 (the issue of working hours did not feature).

4.5.4. Quality: Going beyond remote emergency teaching

Respondents emphasised that many of the staff at their institutions had gone beyond emergency teaching, and ODL was becoming institutionalised:

- There were many lecturers who took time when forced [by the pandemic] to move to online teaching and learning during the lockdown in 2020, to fully engage ways to make the transition and design their courses in pedagogically sound ways. They planned their courses to become sustainable and to benefit their students and departments beyond the Covid-19 crisis.
- Lecturers improved their assessment methods. The movement to continuous assessment forced students to learn and engage with the learning material during the semester. This application served to limit opportunities and appetites for cheating during the frequent assessment phases.

- Lecturers prepared model lessons and shared these through various media, including radio lessons to reach deep rural areas.
- Lecturers used multiple platforms to reach large numbers of students. A large synchronous class on Facebook brought about a sense of community. Students themselves formed communities of support using Telegraph and WhatsApp.
- They used virtual reality in lieu of practical classes.
- They used MS Teams for some of their teaching.
- We later started mask-to-mask teaching [face-to-face teaching whilst wearing masks] in some modules. Covid-19 procedures were followed and [informed] the “what” and “how” of the learning and teaching that was facilitated.
- Lecturers found other ways of continuing with teaching and learning despite the rotational timetable and the lockdowns.
- Lecturers used frequent short check-ins with students and WhatsApp groups for peer learning.

4.5.5. Quality: Approaches used for teaching and learning

Regarding the methods and approaches used during the pandemic, Figure 15 above shows that more than 70% of respondents indicated that asynchronous and synchronous teaching methods were used, with most respondents indicating that their institutions used both modes. The qualitative responses showed that academics almost always uploaded recordings of their (synchronous) lectures to the LMS (or even onto Facebook or YouTube) to accommodate those students who experienced connectivity or other challenges and who could not participate in the (synchronous) teaching. This made it possible for students to access the recordings at a later stage. This approach was similarly used by lecturers who employed hybrid teaching approaches. As one respondent pointed out:

Some lecturers combined face-to-face and online teaching at the same time. For those students who were unable to attend either (live or virtual), the lecturer uploaded her lesson onto YouTube so that students could access it at a more convenient time. Students had the advantage of seeing the slides and hearing the discussion in the class. They could also use the uploaded lectures for their examination preparation. One of the academics indicated that her lecturer was used far-and-wide. She received comments and feedback on her lecture academics and students in other countries.

In addition to uploading lectures, almost all institutions had uploaded study materials for students to access (see Figure 15). Where they had not, as the qualitative responses show, materials were either sent by courier (some on a memory stick) or were preloaded on laptops that were then distributed to students. These kinds of precautionary measures enabled the continuation of teaching and learning, with all respondents stating they had managed to some extent to complete the academic year, with a majority of the respondents indicating that it was not necessary to abridge or shorten the curriculum. One of the respondents indicated that the pre-Covid-19 teaching context influenced the post-Covid context.

Those lecturers who were not using blended learning before the onset of Covid-19 adapted with much difficulty to the changed mode of teaching and learning. Some who were creative and innovative, enjoyed teaching online and will be continuing with this mode in 2022 and beyond.

4.5.6. Factors to be considered to improve teaching

Some of the respondents pointed out that their institutions had not provided academics, administrative staff and students with digital resources and mobile data bundles to ensure the continuation of work and optimal learning. In this sense, the findings of this study resonated with the findings of the 2020–21 Council on Higher Education study. The Universities South Africa (USAf) and the University of the Free State initiated the Staff Experience of and Perspectives on Teaching and Learning and Its Future (SEPTLF) survey, which focused on the experiences of university teachers, leaders and managers during remote teaching and learning, and their perceptions of the future of teaching and learning. As with this study, most respondents in the CHE survey recognised the importance of digital skills training for students and lecturers, as well as the importance of creating an enabling environment for blended learning with adequate resources and infrastructures. Most respondents indicated they had devices provided by their institutions, but they were responsible for procuring data for connectivity to complete their teaching and learning tasks (CHE, 2021).

The factors that the CHE study identified as necessary to ensure a successful blended teaching and learning environment resonated with this study and included: devices and data for staff (91%), online assessment training for university teachers (75%), digital skills training for students (74%), a laptop for each student (73%), digital skills training for university teachers (72%), blended teaching strategies training for teachers (67%), curriculum adjustment training for all lecturers (62%), support to gauge the impact of learning (62%), analytics to monitor students' engagement (62%), proctoring systems for assessment (61%), analytics to monitor module success (61%), and student profiles and tracking systems (59%) (CHE, 2021, p. 32).

While many of the problems identified by the CHE (2021) study appeared to have been ironed out by the time of this study in January 2022, many of the respondents in this study nevertheless pointed to similar factors. One of the respondents remarked on the heterogeneity of levels and abilities of staff at their institution, suggesting (i) rigorous needs analyses should be conducted so that interventions might be more targeted, and (ii) research should be done to gauge technology integration levels, using a Technology Acceptance Model (TAM) to establish how lecturers come to accept and use a technology and “to establish attitudes and intention to adopt technology and understand the lecturers' perceived usefulness of the technology.” This respondent further stated:

I recommend that lecturers acquire all aspects of the TPCK (Technological Pedagogical Content Knowledge) Framework. In addition to pedagogical knowledge (PK) and content knowledge (CK) teachers need technological knowledge (TK). This can offer insight into training to enhance what technology can support the content and pedagogy in order to enhance students' learning experiences.

This respondent indicated that “some lecturers wanted to continue with traditional forms of tuition by merely using technology as the medium.” Others suggested that while academics needed to have PK and TK, they were not expected to have the skills needed for gaming or randomising questions. In these cases, specialist digital designers were required to assist where TK was lacking.

These suggestions draw on the seminal work of Mishra and Koehler (2006), who provided a theoretical framework for the integration of technology into teaching, a framework that is critical for HEIs that are transitioning to digitally supported learning. Building on Shulman's conceptualisation of “pedagogical content knowledge,” Mishra and Koehler's (2006) framework distinguishes the “essential qualities of knowledge,” and they argue that pedagogical uses of technology are contingent on the development of a complex, situated form of knowledge — Technological Pedagogical Content Knowledge (TPCK) and the interplay between content, pedagogy and technology.

As the respondent above states, the TPCK model is vitally important for enhancing the integration of technology in teaching at multiple levels: theoretical, pedagogical, and methodological — and should be incorporated in ongoing CPD.

4.6 Opportunities

4.6.1 Preferred mode for the future

Regarding the preferred mode, one of the respondents commented that “the preferred way is difficult to gauge but it seems that distance online learning is here to stay.” Other respondents noted:

Some lecturers would prefer to return fully to contact mode, although the institution has taken a stance to promote blended learning as a preferred mode from now on. This is also the case in courses where it is difficult to teach certain aspects of the curriculum or practicals online.

Many respondents raised the distinction between theoretical and practical learning:

- It depends on the types of academic programmes. In some instances (e.g., Health Sciences), lecturers had no option but to conduct face-to-face tuition to meet quality and statutory requirements. In short, on the one hand, there are lecturers who would prefer online tuition (where teaching and learning is largely theoretical) whereas on the other hand, there are those who would opt for venue-based tuition due to the practical components of curricula.
- It varies greatly and research should be done to gauge technology integration levels. It seems that some want to continue with traditional forms of tuition by merely using technology.
- Lecturers wish to continue to offer online teaching. Blended teaching and learning is the most preferred mode after Covid-19.
- Lecturers were provided with many learning opportunities (webinars and resources) to assist them with online teaching. The preferred mode after Covid would be a blend of face-to-face and online (synchronous and asynchronous).
- The preferred mode would be blended about 30% online and 70% face-to-face. Most lecturers have embraced emergency remote learning.

However, as one respondent pointed out, “A few have seen this as an opportunity. Some just stopped teaching and refuse to engage online!”

4.6.2 Implementing the practicums and work-integrated learning

Respondents referred to various methods employed to ensure the continuity of work-integrated learning (WIL) and practicums (referred to as “practicals”).

- The learners attended WIL practical sessions in batches and on a rotational basis in order to comply with Covid-19 regulations. It was difficult because some employers were not willing to accept students and lecturers during the pandemic. In many cases WIL had to be postponed into the new year, although it was possible to conduct practicals in laboratories with smaller groups and thereby ensure social distancing.

- The programmes that require practical WIL sessions before graduation have relatively low students' numbers and the institution was not unduly disrupted. In most cases the practical/WIL component is required after graduation and is not an institutional responsibility.
- Students were not allowed into workplaces for their practicums. These needed to be deferred and rescheduled for times when the lockdown measures permitted this.
- Students in courses where professional bodies have particular requirements were prioritised to come back to campus. They had face-to-face laboratory practical sessions that were under strict Covid-19 health and safety protocols. Where classes were too big, they were divided into smaller groups. This meant that academics had to repeat the same practical several times to ensure that all students had equal chances at learning. Academics made huge sacrifices. In some courses, the practical components were simulated.
- Practical sessions were held with great difficulty online exercises were presented via WiTS platform. Online exercises with a focus on teaching practice were given. These needed to be rescheduled for when schools reopened and it was safe to resume WIL activities.

4.6.3 Examples of best practice in ODL teaching and learning

The following excerpts from respondents' answers indicate good practices they identified.

- Discussion boards on the learner management system to elicit engagement. Using breakout rooms in MS Teams during synchronous teaching to truly engage students as active participants.
- Using quizzes for formative work on a weekly basis and recommending that instructional design experts assist with the development of digital teaching materials.
- Using of Flipgrid for students to record short clips in which they explain something or show a skill like board writing for teacher education students, or to give a performance, e.g., a song or reading.
- There was a greater sharing of experiences and approaches used among academics and building communities of practice. For example, when we had to learn how to invigilate students remotely (as we could not afford proctoring software and our students do not all have cameras on their laptops), one department piloted remote proctoring via Zoom/MS Teams. We then had sessions where they shared their learning, and collectively the academics helped to refine the procedures. These were then adopted and used to train other academics in their use.
- A variety of planned activities for students (lectures, practicals, questions, tutorials, group work, etc.) to ensure students developed disciplinary knowledge. Many lecturers showed more empathy and were prepared to support and encourage students who were overwhelmed and at risk of dropping out.
- The university (in fact several universities) introduced a Vice Chancellor's distinguished teaching award for online teaching for a person who displayed creativity and innovation in online/remote teaching courses and succeeded in catering for the learning needs of diverse students in the context of the pandemic.
- The new ways of learning and teaching that evolved in the pandemic are shaping our Vision 2030 humanising, student-centred, flexible teaching approaches to foster supportive learning environments where there is a mix of modes and spaces to provide more engaged, personalised learning experiences to liberate human potential.

- Using platforms such as Slack to allow for organised instant messaging and communication.
- Using videoconferencing platforms (with software such as Teams or Zoom) — all new but gaining traction.
- Student chatrooms and discussion boards were used for collaboration.
- Pre-recorded asynchronous video lessons were put on platforms or on YouTube.
- Live synchronous lessons were presented on Team, Facebook and Zoom and put on YouTube or on the learning platform for later use.
- Google Meet, Google Classroom teaching and learning, and platforms like Sakai, Moodle, Blackboard.
- Using a low-tech mobile application for proctoring online assessments to mitigate examination irregularities.

These findings concur with those of Madiope and Menzy (2021), who found that subsequent to the onset of the pandemic, most higher learning institutions expanded their repertoire of teaching by strengthening remote learning, establishing discussion boards, developing videoconferencing, and making innovative use of social media and mobile technology.

5. The Way Forward: Recommendations

This final section focuses on the study’s findings and attendant recommendations with regard to digitisation and ODL modalities in South Africa, and the implications — for example, in terms of infrastructure, content and connectivity, as well as adaptive learning and access for disadvantaged groups, including women and persons with disabilities.

While survey respondents reported many challenges arising from the initial “emergency” nature of the transition to online learning, the findings suggest that institutions are maturing into an ODL mode and are likely to retain some or most of the current hybrid, e-learning practices blended with face-to-face as the “de facto new normal.” In 2016, the CHE indicated an ODL trend was likely to have a positive impact on undergraduate students, provided modules were well designed and learners were adequately prepared for utilising online learning (CHE, 2016). It also noted that “an active exploration of expanding the use of blended provision” would be justified by potential practical benefits, such as hybrid modules, for delivering a more flexible curriculum and also for reducing demands for infrastructural development (CHE, 2016, p. 372). Interestingly, the 2016 report cautioned that the contribution of online and hybrid delivery for achieving growth and cost-saving in HE could not be taken for granted but would “require a major effort to incorporate it systemically into South African higher education” (p. 372). The following sections propose some recommendations for expanding access while ensuring quality and equity, by harnessing the gains already made.

To positively affect learning achievement, the recommendations focus on five dimensions of students’ interactions, as illustrated in Figure 16, with student–content interaction identified as the most impactful for learning outcomes. As Kanwar (2020) has stated, “now that the world has been forced to use technologies, we will need to ensure that these are available, accessible and affordable.”

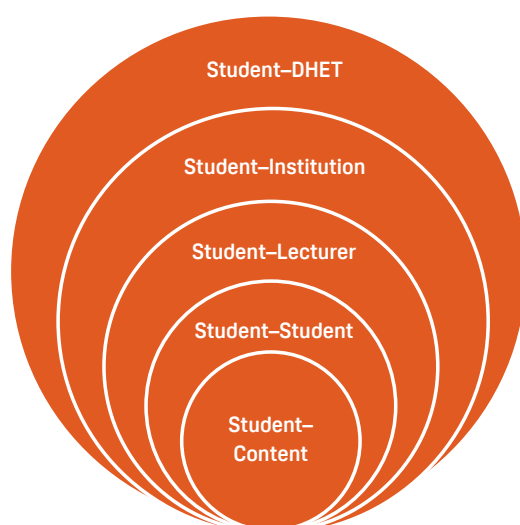


Figure 16. Intersections of student interactions.

5.1 Student – DHET: Enhancing access and inclusivity at a national level

There is a need to guide a mind-set shift towards the use of ICT and distance learning modalities to build more open, inclusive and crisis-resilient institutions, capitalising on the gains made in using technologies during the Covid-19 pandemic. This will require the alignment of policies with the new reality involving:

- Investment in ICT infrastructure is essential for equity. This includes device access, connectivity and the zero-rating of educational platforms and usable devices for students with disabilities. Zero-rated data implies that the connectivity for accessing, using and downloading content from educational websites should be free of charge, and the Internet data used by accessing these websites should be excluded from charges and monthly data caps. This will require the development of a directory of websites to be exempted from billing.
- The NSFAS should play a greater role in addressing the digital divide in terms of access to devices and connectivity for NSFAS beneficiaries. The funding made available for students with disabilities should cover all assistive devices so that ODL is adapted to their varying needs and ensures access and inclusivity.
- At an inter-ministerial level, there is a need to develop (i) enabling policies, including the removal of surcharges on ICT imports (as well as on books), to ensure access, equity and quality, and (ii) regulatory frameworks to promote blended learning. These policies and frameworks would make the education sector more flexible and resilient when facing future challenges. Blended learning is ideal for expanding the PSET sector, and with appropriate pro-online learning policies and practices, blended learning is well suited to the developing context of South Africa.
- Given the new competencies developed across universities, consideration can also be given to fostering inter-institutional collaboration that will further enable institutions to fast-track their developments by sharing ideas and pooling resources.

5.2 Student – institution: Enhancing access and inclusivity at an institutional level

- Quality education using distance modes relies on institutions focusing on the three Cs for effective e-learning: connectivity, content and capacity.
- Existing OER that are (re)contextualised for local contexts could lower costs. Institutions will need to align their policies with the new online modes. This includes assessment, teaching and learning, and the use of OER and MOOC policies.
- Quality assurance and enhancement as ICT is integrated in learning call for the application of rigorous quality assurance measures across the entire student experience, from first contact to graduation.
- The integrity of online assessments needs to be guaranteed and will require investments in proctoring/invigilation/similarity tools to mitigate assessment irregularities.
- Increase in technology usage and the new Personal Information Act in South Africa require addressing cyber security, data privacy and the safety of networked devices.
- To turn access into a reasonable chance of completion, continued research into the factors affecting dropout, stopout and failure rates needs to take place and be acted upon.

- Methods of data analytics and artificial intelligence for student tracking to identify and support at-risk students, and the monitoring of throughput cohort analyses will enhance the quality of teaching and learning and need to be incorporated into all ODL programmes.
- Recognition breeds quality. Institutional awards and the recognition of the scholarship of teaching and learning were cited by respondents as examples of best practices that reward academics for the additional efforts of transitioning to ODL and for reinventing their practices. Currently, institutions have prioritised research over teaching and learning.

5.3 Student – lecturer: The role of the lecturer in enhancing quality

Several challenges that respondents raised pertain to the need for building staff capacity to teach online and students' capacity to learn in digitally supported environments. Improving students' digital skills can go some way towards improving the quality of teaching and learning.

- All-round capacity development for all staff and students is necessary. For institutions, the top priority would be to build the digital skills and capacity of all staff (including administrative, digital instructional designers and other academic support staff) and students.
- Rigorous needs analyses can be conducted to identify digital skills gaps and thereby enable the integration of ICT as a dominant mode of teaching and learning. It is necessary for capacity enhancement programmes for academics to go beyond merely teaching the technical aspects of digital platforms; such programmes should also aim to enhance their understanding of the situatedness and context of learning and how these affect student learning.
- Continuous professional development and training (CPD) programmes should focus on online pedagogies and ensure that academics acquire deeper understandings of ODL methodologies and modes of teaching, as well as how to deal with students across the digital spectrum. [COLcommons.org](https://colcommons.org), made available freely by COL, can be used by students and teachers. As this study has shown, Mishra and Koehler's (2006) model of TPACK has significance for enhancing the integration of technology in teaching at multiple levels — theoretical, pedagogical and methodological — and could prudently inform CPD training.
- Respondents indicated the importance of using student analytics to identify students at risk and to measure and monitor student participation. While many of the digital platforms provide such analytics, academics will need orientation in how to use and interpret these analytics and determine the implications for their teaching.
- The study refers to the changing mode of assessments to online and continuous formats, with some respondents raising concerns about the integrity of assessments that are not venue based. Investments will need to be made for proctoring/similarity/invigilation tools to mitigate assessment irregularities. Randomisation of assessments has an important role to play in upholding examination integrity while allowing for flexibility of learning provision. Training and campaigning for ethical approaches will further contribute to improving student conduct.
- The development of capacity for identifying and supporting students with learning barriers, including students with disabilities, is critical. While ODL addresses problems of physical access, HEIs have the challenge of ensuring that students with disabilities are able to effectively use ICT that are accessible, adaptive and affordable.

5.4 Student – student: The role of the lecturer in enhancing quality

- Student representative councils have an important role to play in socialising students into new online modes of teaching and learning. Students need to be trained in the responsible use of virtual spaces.
- Student training in ethics and ethical online use are critical. These will extend to understanding plagiarism and other forms of examination irregularities that occur, whether through ignorance or by design.
- Peer learning and peer collaboration are critical for optimal online delivery. The findings of this survey show that student collaboration increased during lockdown and that virtual communities and a range of chat groups contributed to increased student interaction and collaboration.
- All students will need to receive skills development training and skills for utilising institutional platforms. Students will need to ensure that they continuously upgrade their skills as these platforms are further developed.

5.5 Student – content: Content for enhancing quality

- Materials development, instructional design, contextually relevant materials, and consideration of the languages of teaching and learning are critical for improving learning. OER and MOOCs offer immense possibilities for fast-tracking the digital content available to students.
- Almost without exception, the study found that for regular communication with student groups, institutions used free access via WhatsApp and other Web-supported communication. The use of these platforms can be deliberately factored into teaching and student support.
- All institutions in this study reported the need for digital skills development. While some respondents reported that the need may not be as high as anticipated, given that the new crop of matriculants entering universities were already exposed to online teaching and learning through the pandemic, manoeuvring the various learner management platforms also requires skills, and students will still need this orientation, regardless of prior engagement with online teaching and learning.

It is expected that the foregoing recommendations will generate insights into the impact of distance education policy and practices, so that higher education institutions and governments can take concrete steps to build on the gains already made in using ODL modalities. Many of the recommendations specify roles that the Commonwealth of Learning might play in supporting institutions (across the Commonwealth) to derive benefits from the transition to ODL.

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