





TEACHING AND LEARNING REVIEW

2020

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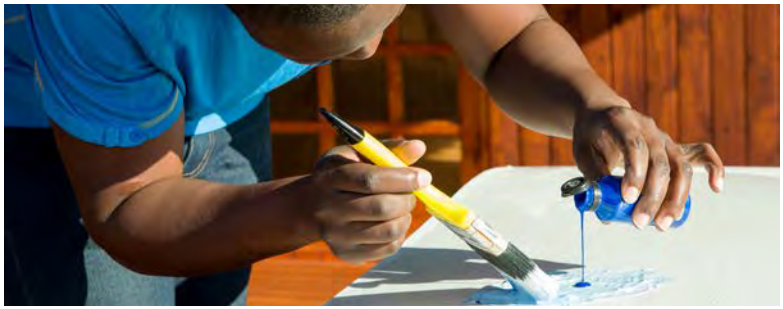

Vision

To be a leading research-intensive university recognised internationally for its quality, relevance and impact and for developing people, creating knowledge and making a difference locally and globally

Navigational markers

Quality, relevance, diversity and sustainability

Goals 2017–2021

1. To enhance access and successful student learning
2. To strengthen UP's research and international profile
3. To foster and sustain a transformed, inclusive and equitable University community
4. To optimise resources and enhance institutional sustainability
5. To strengthen the University's social responsiveness and impact in society

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Re-imagining Teaching and Learning

Foreword by Vice-Chancellor and Principal

Prof Tawana Kupe

The COVID-19 pandemic was a shock to me and all of the University community. It tore asunder the things that hold the community together. Specifically, it struck at the heart of how we operate in face-to-face interactions in both formal and informal settings on the various campuses and across the University. The uncertainty of when a semblance of normality would return caused considerable ongoing anxiety and mental stress. It took time with counselling and multiple forms of peer support for the community to operate in the new mode through online interactions.

In particular, the University of Pretoria has well-thought-out teaching and learning strategies and plans that continually evolve in ways that enable it to offer quality teaching. This dynamic approach was, in part, why we were relatively successful in navigating emergency remote teaching and learning when the pandemic struck. The strategies are forward-looking, concerning the ways in which digital educational technologies enable more interactive forms of teaching and learning as well as blended or hybrid modes. Without this future-focused and oriented posture, our students and staff would have had their resilience tested beyond endurable limits.

Stories by lecturers and staff in the review show their creativity and determination but, above all, their concern for the students. I think what struck me in reading many of the stories was how lecturers adapted their practical work using ingenuity as well as technology. What I see in the clickUP data is that lecturers often spent more time on the LMS than their students, spending hundreds of hours to ensure student engagement and learning. These reactions are commendable and position us for interesting journeys in re-imagining teaching and learning for transformative futures.

Professor T Kupe

April 2021

Ad Destinatum Persequor: Striving for Student Success in the Context of a Crisis

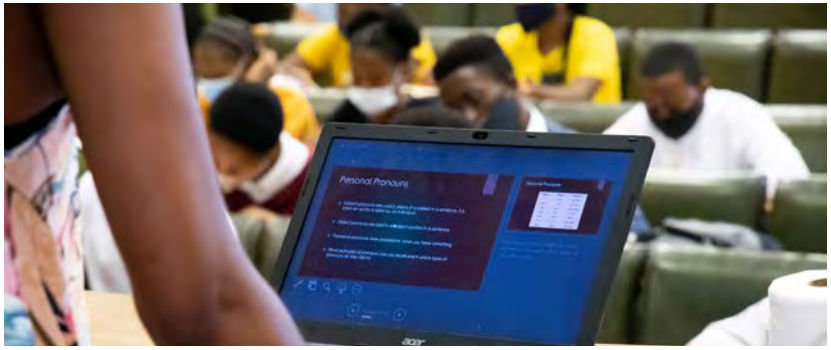
Foreword by Vice Principal: Academic

Prof Norman Duncan

On 15 March 2020, after the positive identification of several cases of COVID-19 infections in South Africa, the South African government declared a national state of disaster and announced the implementation of various interventions, including travel restrictions and the closure of schools throughout the country. The University of Pretoria closed on that day as well. Then, on 23 March, the government announced that a national lockdown would be implemented as from 26 March, to contain the spread of the COVID-19 virus. On 27 March, against the background of 247 reported COVID-19 positive cases nationally, the first COVID-19-related death was announced in South Africa. It is on this day, I believe, that many South Africans realised that the potential devastation that would be wrought by the pandemic was no longer theoretical or something that only affected people in other countries, such as China, Italy, the United Kingdom, Spain and South Korea.

Indeed, it was at about this time that we realised that our quotidian lives were to change dramatically, at least in the short and medium terms. Certainly, academics realised that, for the immediate future, they would not be able to continue pursuing their research interests or teaching in trusted, traditional and familiar ways. Most students (particularly those from under-resourced communities) were confronted with the realisation that not only were their daily lives going to be dramatically disrupted but making a success of their studies could become much more difficult.

The responses of academics across the country to the pandemic and the effects of the national lockdown were varied. Some thought that the state's response to the pandemic was perhaps too extreme and potentially counter-productive. Many others considered it appropriate, given the seriousness and extent of the threat. Nonetheless, in the end, academics at the University of Pretoria agreed that it was incumbent on all of us to save the academic year because not completing it would be inordinately costly, for the University, staff and students. Moreover, the majority of lecturers



agreed that it was important not merely to save the academic year, but also to ensure optimal levels of student success.

As an aside, on 25 March 2020, an opinion article by Rahm Emanuel appeared in the Washington Post. In the article, Emanuel reprised a statement generally attributed to Winston Churchill: 'Never allow a good crisis go to waste … It's an opportunity to do the things you once thought … impossible.'[1] This statement, I believe, reflected the response of many academics and professional support staff at the University of Pretoria to the pandemic and the lockdown. When the decision was taken by the University Executive, in consultation with our deans of faculties, to proceed with the academic programme in an online mode, the predominant response from lectures was immediately to start restructuring their lectures and preparing material for online presentation. Assessments were reconceptualised and redesigned to articulate with an online mode of instruction while meeting the specified programme requirements. Those lecturers who felt inadequately equipped to engage in online teaching enrolled in large numbers for special courses on online instruction and assessment provided by our Department for Education Innovation.

As amply illustrated throughout this review, the response of our academics and support professionals to the challenges that resulted from the COVID-19 pandemic did justice to the University's motto, *Ad destinatum persequor* (which, loosely translated, means, 'With zeal and perseverance, strive towards the goal'). The goal was (and remains) student success, even in a time of crisis.

Of course, the transition should not have been too difficult for lecturers who had been at the University of Pretoria for a significant period. The simple reason is that, when we adopted the hybrid approach to teaching and learning as the University's preferred pedagogical approach in 2015, all faculties were requested to ensure that every module was taught in a combination of contact and online modes. Most lecturers, therefore, should have been able to teach by means of an online platform with relative ease.

Nonetheless, teaching solely online was a new experience for many lecturers. Similarly, being taught in an exclusively online format was a new experience for students, particularly for our first-year students. Furthermore, it must be remembered that, given the size of the University of Pretoria's student population (53 000 students), the transition to emergency distance teaching and learning required complex logistical planning and processes.

Worth noting is that during the 2020 lockdown period, 21 791 students attended virtual online classes on a daily basis. This figure compares relatively favourably with earlier statistics, which indicate that during the same period in 2019, on average, 23 319 students accessed the University's campuses on a daily basis.

1 https://www.washingtonpost.com/opinions/2020/03/25/lets-make-sure-this-crisis-doesnt-go-waste/

Here, the question can be asked: How was this rapid transition to exclusively online teaching and learning experienced by lecturers and students? This question is answered, in part, by an online survey conducted by our Department for Education Innovation in May 2020 (three weeks after the commencement of fully online teaching and learning).

Overall, the findings of the survey were instructive and encouraging, and included the following. A total of 87% of students indicated that they were fairly/mostly/fully able to manage studying online and to use the University's LMS (clickUP) tools. However, 2,9% indicated that their limited knowledge of the LMS made online learning during COVID-19 very or extremely challenging. Encouragingly, 85,47% of students reported participating in online tutoring sessions in order to understand their course content better.

Most students appeared to manage online learning fairly well and, if the extent of student participation in clickUP or online activities is anything to go by, they were able and quite prepared to engage with this form of teaching and learning. Indeed, as illustrated by the following statements, some students appear to favour this mode of teaching and learning:

'I like the flexible time schedule. I also have more time to work because I do not have to spend two hours commuting every day' (Student X).

'I like the ability to make my learning flexible and cover the work at my own pace. In FRK 111, I enjoy watching the recorded Collaborate sessions more than attending the live sessions, as I can fast forward or re-watch the explanations. The tests and homework submissions are also very helpful in forcing me to understand the content fully' (Student Y).

Many students, however, indicated that, if they had a choice, they would prefer learning in contact mode. They offered a range of reasons for this preference, including that they value or need interpersonal contact with their lecturers and fellow students. Of course, many students would have preferred contact instruction because they did not possess personal Internet-enabled devices or data. Ultimately, the University had to loan 2 247 laptops to students whose chances of success in their studies would otherwise have been compromised. Additionally, on five occasions during the year, the University had to issue data bundles to students in need of them. Students who could not access Internet services were offered telephonic tutoring and printed learning materials (fewer than 100 students eventually took up this offer). *En passant*, unequal access to digital resources is something that the South African higher education sector will have to address urgently.

Most lecturers indicated that they felt adequately equipped to use the University's clickUP tools in offering online instruction. A minority of lecturers (2,5% to be exact) indicated, however, that they did not feel sufficiently prepared to use the available LMS tools when offering online instruction and, in fact, reported feeling overwhelmed. Furthermore, 12,2% of lecturers indicated that they needed more time to learn to use the tools competently. Approximately 48% of lecturers indicated that pivoting from a face-to-face/hybrid teaching model to teaching online only was easy/very easy, while 50,08% indicated that it was difficult/very difficult. Most lecturers (59,47%) indicated that aligning online learning activities to the module outcomes stated in the study guides was easy/very easy.

Here, it should be acknowledged that it could not have been easy for some lecturers. Indeed, many lecturers had to acquire new skills in a very short period. Furthermore, as many were to discover, teaching online is much more time and resource intensive than contact teaching. Despite the challenges, however, most lecturers managed remarkably well—as can de deduced from student comments, such as the following, which were not uncommon in the corpus of data collected by means of the aforementioned survey:

'All the lecturers should be commended for their efforts and innovation. It is deeply appreciated in circumstances that are extremely difficult … For the first time I feel like I can have an uninterrupted work schedule because social demands and travelling time and anxiety have been lessened. I appreciated lectures or self-study materials that tried including videos and making things more visually accessible it gives variety and keeps interest.'

Last year, Canadian e-learning specialist Tony Bates stated in an online blog: 'I don't think we will go back to pre-COVID-19 teaching … or it will be a pity if we do.'[2] I agree with this sentiment. The COVID-19 pandemic has stretched us in ways previously thought impossible. It has brought out the best in many and I hope that we will use our newly honed capabilities to manage better the future of university education and specifically our endeavours to enhance student success—through hybrid teaching and learning.

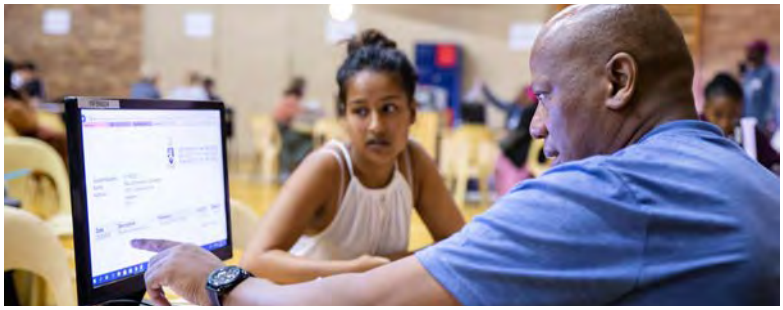
I conclude my introduction to the Teaching Review by acknowledging the dedication and hard work of our lecturers and professional support staff during 2020. It is their dedication and hard work that made it possible for us to transition fairly seamlessly from contact to remote or online teaching in a very short space of time. I commend them for their innovation (as reflected in this review) and for using the 'opportunity do the things … once thought … impossible,' to quote Rahm Emanuel. The lockdown period had given us the opportunity to ensure that every single module at UP has an online presence, thus enriching our students' learning experience. Our lecturers rose to the occasion. Of course, the survey conducted by the Department for Education Innovation indicates that there are many areas in which we can still improve, but I am confident that we shall be able to do so.

Finally, I wish to commend our students for their courage, grit and resilience. The results of the aforementioned survey, as well as our current retention rates, indicate our students' willingness to persevere constantly and strive towards the goal *(Ad destinatum persequor)*, despite the odds.

Professor NTF Duncan

April 2021

2 https://www.tonybates.ca/2020/07/04/what-have-we-learned-from-covid-19-about-the-limitations-of-online-learning/



Student Data 2020 – Institutional

Head count enrolments
52 972

Percentages for UG and PG enrolments
67.6% and 32.4%

Percentage with >6 distinctions who enrolled
16.3%

Female percentage
57.5%

Black percentage
63.3%

Graduates
12 881

UG Success rate
87.8%

Welcoming Day, first-year students, 2020

Introducing Libby, the Library robot, to new students

Welcoming Day, 2020

Vice-Chancellor's Distinguished Merit Award recipients

Institutional and Personal Resilience in the Face of Extraordinary Challenges

The Old Normal

The impact of the COVID-19 pandemic on social, economic and educational activity internationally and locally has been devastating. Governments and institutions have tried to keep people safe, while not completely destroying the economy. In South Africa, there have been national guidelines for the different levels of the pandemic, both general and for higher education.

The University of Pretoria (UP) started its academic year under normal conditions with registrations; orientation for new first-year students; induction for new lecturers; and the start of classes, community engagement and cultural activities for all students.

Registration – Student cards proudly displayed

Good prospects

First-Year Concert, INSYNC

First-Year Concert, INSYNC

Student societies kick off: Enactus

Drama students in production of Snow Queen

Nursing Science students on community engagement at Sunnypark Shopping Centre

Veterinary Science students visit Freedom Park

Academic opening

Academic opening

UP's birthday celebration

UP's birthday celebration

An empty campus

Working from home[3]

The pandemic forced the University to move to fully online teaching. Preparation began in March, including additional training in using online tools for teaching and the preparation of materials and activities for teaching. The new dispensation was implemented on 2 May.

UP was in the advantageous position of having mature e-learning and e-assessment environments and qualified and experienced e-learning instructional designers to support lecturers and students. Various types of technology were available to continue teaching and provide library services, tutoring, mentoring, advising and counselling.

Using evidence-based strategies, the University sought to ensure that all students had devices and mobile data or other means to continue studying with support.

The successful completion of the teaching year at the end of 2020 is due to the creativity, dedication and extraordinary work of many people: staff, students, stakeholders, donors and partners. It is possible that a small percentage of students did not manage to overcome the personal, environmental and online challenges of this period, despite every effort having been made to assist them, a matter of concern to the University.

3 https://commons.bcit.ca/news/2020/11/how-to-stay-motivated-while-studying-online-for-final-exams/

Leadership and Communication

Vice-Chancellor and Principal Professor Tawana Kupe sent out a series of initial emails that showed concern for the well-being of students and staff in the face of the looming pandemic. Then, the Executive implemented practical measures, in consultation with the higher education community, through entities like Universities South Africa (USAf), the Minister of Higher Education, Science and Innovation, the Department of Higher Education and Training (DHET), and the Council on Higher Education (CHE).

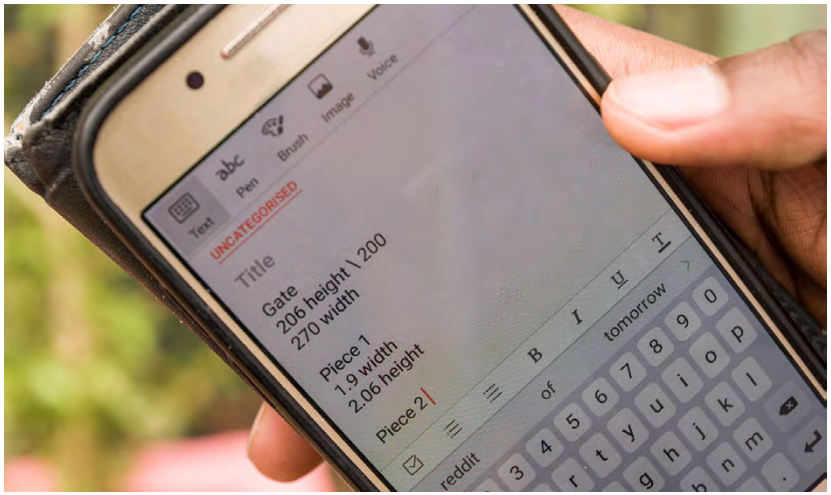
There was a commitment to continuing classes online and ensuring that students had devices, connectivity and mobile data bundles to access information on the web. In rare cases where this was not feasible, the University arranged other means such as printed material and telephone contact as part of a broader commitment to staff and students to finish the academic year by the end of 2020. Professor Kupe continued to communicate a caring attitude as well as planned procedures to the University community throughout a challenging year.

UP designed a dedicated website, 'COVID-19 updates, information and analysis'[4].

WEBSITE

The University of Pretoria is closely monitoring the novel coronavirus (COVID-19) situation. The safety and well-being of our students and staff are paramount, and we are taking proactive steps to help ensure that we have a plan of action in place. We have established a task team to assist with the implementation of our plan of action. Visit this site regularly for all UP news updates on the situation.

The site has resources for students, staff, and the media. It focuses on well-being, the fund-raising project, communications from the Vice-Chancellor and Principal, contact details for testing, advice on behaviour to prevent infection, good links to outside sources where more information can be obtained, and frequently asked questions about when the University will reopen, how disadvantaged students will be assisted, learning online, continuing with research, and other pertinent issues.



4 https://www.up.ac.za/coronavirus-updates

Teaching Modality and Emergency Remote Teaching

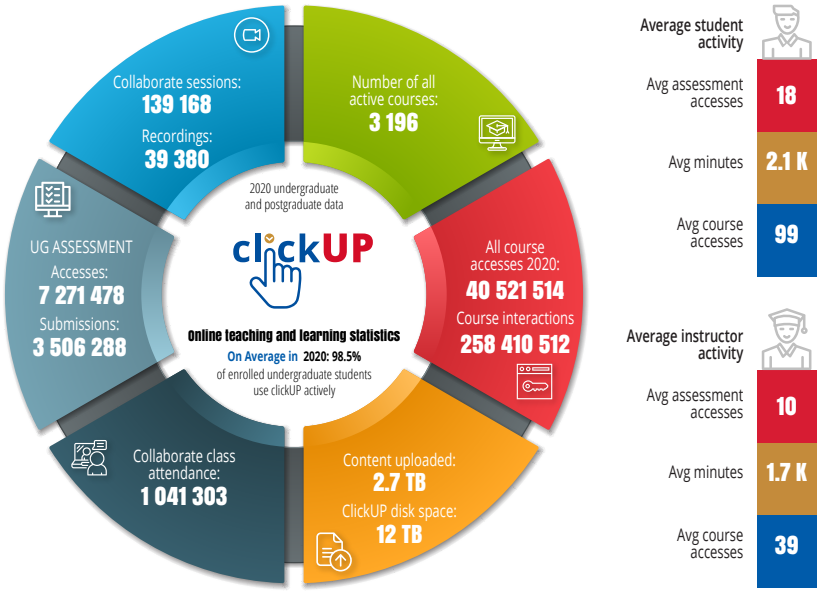
Teaching and Assessing Online

The University's hybrid or 'bichronous'[5] approach was adapted, moving from contact plus online, to fully online. 'Bichronous' means both synchronous/live and asynchronous approaches are used, whether the synchronous is online or contact. UP's hybrid flipped-learning methodology already required students to come to class prepared, complete pre-class assessments, and engage in class as well as participate in online activities that complemented contact. This model articulated well with online teaching and learning as it required lecturers and students to use their online clickUP courses and encouraged students to prepare independently for each class.

From 2 May, thousands of students logged on to the University's online teaching and learning platform, clickUP (Blackboard Learn), from across South Africa and more than 20 countries globally.

LECTURER REFLECTION:
Faculty of Education

'I decided to embrace the mode as there was no alternative and I foresaw that I could develop useful skills. I invested in the required paraphernalia (lights, green screen, webcam, software, etc) and created a really nice little "studio" from which to work. Despite my experience of televised lessons, I found myself becoming very, very stressed about teaching online each week to radical, physical degrees (nausea, headaches, tension in every fibre). I know some of it was related to having to master so many different aspects of technology. I usually take a good deal of time to craft my lessons, but I spent way more hours preparing as I knew that other teaching and learning principles were involved, especially as one could not see the students. I had to adapt my slides' layout, for one. I did think I was able to be creative in trying to convey a message asynchronously without being able to show artefacts, as I would have in class. Generally, I felt pleased after each session with how I had managed to scaffold the content prior to the session (if students were doing what I had prepared for them) and how I had created opportunities for interaction. I truly believe I offered a quality learning experience and support despite the many challenges.'



clickUP student activity data – May 2020

5 Martin, F, Polly, D and Ritzhaupt, A. (2020). Bichronous online learning: Blending asynchronous and synchronous online learning. https://er.educause.edu/articles/2020/9/bichronous-online-learning-blending-asynchronous-and-synchronous-online-learning.

LECTURER REFLECTION:

'Using the Blackboard Collaborate tool, teaching live classes works well for me. The lectures are recorded, and a link is posted on clickUP, enabling every student to view the recorded lecture when and where he/she can or would like to. Questions are discussed on the Discussion Board, allowing for peer learning and input from the tutors. The Discussion Board is open for a specific time slot in the week only, forcing the students to revise the most recent lecture and identify problems that are then addressed as soon as possible, allowing for successful learning to take place. Of course, should questions arise later on, students are welcome to ask, and all questions will be answered. Students indicated that they prefer the "live" classes/lectures. The first years said that they feel "safer" attending the live classes: it feels more "normal", closer to what they are used to. It also allows me to elicit responses from them, enabling me to gauge their understanding. On postgraduate level, supervision of students continues as usual. I am constantly in contact with my postgraduate students using WhatsApp, emails, Google Hangouts and video calls.'

Lecturers were present in different modes during regularly scheduled class time to discuss difficult concepts and answer questions. Two guiding documents were produced to ensure the successful continuation of teaching, learning, assessment, and student success during emergency remote teaching:

Teach Online: The UP Way (COVID-19)

Alternative and Online Assessment: The UP Way (COVID-19)

Moving fully online required a reconceptualisation of teaching skills with intentional design to support and engage students actively in this different mode. Fortunately, the instructional designers in the Department for Education Innovation were able to support lecturers in optimally aligning their teaching and assessment to the fully online mode. It was always about 'emergency remote' use of online and never about online teaching becoming the default curriculum-delivery mode.

Enablers to Continuing with Teaching after the Lockdown

Policy

Since 2016, UP has had continuity plans for teaching online if it were not possible to be on campus. A strategy was thus in place to support the successful offering of online teaching and only had to be reviewed. Then, within institutional parameters, each faculty designed a unique plan given the teaching and learning demands of different programmes and students (both postgraduate and undergraduate). The plans considered the safety of staff and students, the practical need to be on campus, rotational use of venues, sanitisation, distancing within classes, the wearing of masks, and other measures. 'Rotational' implies that a limited number of students might come to campus, while others might view the lecture on a live stream and/or watch the recorded lecture later.

Technology Infrastructure

The University, through its existing hybrid teaching and learning model, was well positioned to offer classes online. The University is currently viewed as a South African leader in the integration of educational technologies to support teaching and learning and student success strategies. UP has reached a level of maturity in integrating contact and online modes over more than two decades and the infrastructure is in place.

For teaching and learning, the University uses a number of Blackboard products: Learn, Mobile, Collaborate, Analytics for Learn, Predict and the Blackboard app. The products integrate with its other technology platforms.

The online learning management system (Learn) is branded as clickUP. A help site provides links for the following: clickUP Staff help site; clickUP Student helpsite; clicker Lecturer Resources; clicker Student Resources and clicker FAQ (eduvation.up.ac.za).

Mobile enables students to access their learning material across various devices. When content is uploaded for students in clickUP, it is also automatically available on their mobile devices via the app.

Blackboard: Accessible on any device

Collaborate is a synchronous video conferencing tool that allows lecturers to add files, share applications, and use a virtual whiteboard to interact with students in real time. Students do not have to install any software to join a session and can access it from their mobile devices on a browser or through the app. Collaborate sessions are recorded for asynchronous reviewing (surveys show that students value this property highly) or initial viewing if the student cannot make the contact time.

Analytics for Learn and Predict provide learning analytics capabilities. Lecturers and other relevant staff are able to track student activity and identify potential problems early enough to plan a successful intervention. Analytics data—factual information, often figures and statistics—constitute part of an evidence-based approach to decision-making.

During the lockdown, various clickUP affordances were used to create a sense of community and care for students who were feeling isolated. The students valued caring and encouraging messages from their lecturers, in addition to the communication of administrative or learning-related matters. Lecturers used the clickUP Announcements tool for one-to-many, one-way communication to the whole class. Using the Discussion tool in clickUP creates a sense of immediacy, as does the use of Collaborate. The University encouraged all lecturers to use the Retention Centre in clickUP to check which students had not logged in on the system during the preceding five days so that they could contact these students.

Data gathered over the years indicated a significant growth in the number of active undergraduate modules in clickUP, 95,5% in 2019. This growth may be linked to a number of factors, one of which is the availability and attendance of the professional development courses. Another is #FeesMustFall in 2016, which gave a significant boost to uptake of the LMS in 2017. Reflective research was conducted into the impact of this movement on the uptake of blended or hybrid learning, with funding from the Carnegie Corporation of New York. One outcome of the research was a significant improvement in online self-help resources being made available to academic staff.

Other technologies were also used, including the following:

- The H5P software allowed lecturers to embed interactive quizzes into videos and track student results in the clickUP Grade Centre.
- The Clicker mobile app (TurningPoint Mobile Clicker Solution), which allows students to respond to multiple-choice questions in class, with test scores automatically captured in the clickUP Grade Centre, could fortunately also be used in any Collaborate session.
- WhatsApp was already used by student groups for academic work, mentoring, tutoring and communicating and even, to some extent, by lecturers and support services, but its use became more intense and widespread after the lockdown.

Collaborate also proved useful for meetings such as the Senate Committee for Teaching and Learning, the FLY@UP student success committee and the Tshebi data analytics committee. Other videoconferencing platforms were also deployed.

People

The University has qualified and experienced instructional designers in the Department for Education Innovation (EI) who continued to support lecturers and tutors to maintain high levels of teaching and assessing with technology.

The fact that nearly 100% of modules had an online presence at the start of 2020 implies that most of the lecturers had undergone training and knew how to use many of the Blackboard tools. Lecturers also had access to online self-help resources as well as assistance from the instructional designers.

All students had some experience of working on the learning management system, with senior students being particularly adept.

LECTURER REFLECTION:
Faculty of Humanities—An opportunity to grow together

'The sudden turn to remote online learning was, despite the challenges, liberating and an opportunity for personal growth. The changed pedagogy compelled me to fully embrace the many surprising functionalities of clickUP. Discussions about the remote online teaching and learning project with colleagues within one's own academic department and across other academic departments in the faculty as well as at other tertiary institutions (both national and international), who were plunged into the same circumstances I was, were invigorating. I have rarely in my career had the opportunity to engage so meaningfully with colleagues about teaching and learning. These engagements also made me mindful and appreciative of the resources and leadership at UP. It came as a surprise to me that colleagues at highly ranked international tertiary institutions were also struggling to adjust and negotiate through the challenges the 2020 academic year presented. The manner in which teaching staff were supported by Education Innovation specialists and library staff at unmentionable hours of the day deserves special accolades. They were available, patient and responsive to clumsy questions and requests for support in the early hours of the mornings. Their calm demeanour to what I regularly perceived to be a crisis, was reassuring. Although each day presented new challenges, no problem could not be solved if students reached out for help. It goes without saying that I cannot imagine an "unblended" teaching and learning environment in the future when face-to-face classes do resume.'

Health Sciences students

Veterinary Science students in Hammanskraal

Challenges to Continuing with the Curriculum after the Lockdown

First-year students were only halfway through the first-semester Academic Information Management (AIM) module, so a small minority might not have been very computer literate and all had received only initial training in the use of the learning management system, clickUP. Fortunately, however, they had also simultaneously been using clickUP in their modules.

Some students did not have devices, good connectivity or mobile data bundles. Lecturers might not have had adequate devices or connectivity.

Some students needed practical, clinical, work-integrated or community engagement experiences to achieve their degrees. Where it was necessary to be present, students were equipped with the necessary PPE; otherwise, simulations and other alternatives were used.

Until May, many student-support activities such as tutoring, advising, mentoring and counselling had been provided in a face-to-face mode, supplemented by WhatsApp or email. New skills had to be learnt, and resources and procedures had to be designed and implemented in record time.

The default mode of wellness support to staff and students had previously been contact. The relevant departments had to adapt quickly to help people facing the stress of lockdown. The Employee Assistance Programme in Human Resources was both proactive and active in its support of staff wellness[6] or through the UP mobile app. Counselling services for students are discussed below.

Students involved in community engagement activities deemed essential under the applicable lockdown regulations—for example, the Law Clinic, the Mamelodi Animal Health Clinic, and the Cochlear Implant Unit in the Faculty of Humanities—were allowed to return.

6 https://www.up.ac.za/coronavirus-updates/article/2884847/well-beingup or https://www1.up.ac.za/webcenter/portal/EWP/

EBIT students on community engagement at Bramley

Professor Kupe with the Head of Community Engagement, Ms Gernia van Niekerk, and students at the launch of the food garden, Moja Gabedi

Professor Kupe with Health Sciences students at Reliable House

LECTURER REFLECTION:

Faculty of Humanities

'What does it mean to go "online"? There was no set answer, but the idea was virtual lectures. Oh boy! That woke up the sleeping dragons of inequality and poverty. While the advantaged group of students sat comfortably in their homes connected to technology with endless data, the disadvantaged were left scrabbling. The rollout of free data and laptops was a great initiative by universities across South Africa. But we still faced the collective challenge of social isolation that takes away the human touch from teaching and learning. Thanks to online platforms such as Google Meet, Zoom, WhatsApp and Blackboard Collaborate, we could see each other virtually, chat, create digital workspaces, and produce knowledge that was previously limited to the four walls of the lecture venue. The digital space of teaching and learning evolved, producing a new range of students who are more ready to take on the "new world", who are equipped with ideas of modern smart technology. The shift to online teaching and learning is a work in progress. What is certain is our resilience, commitment and determination to produce students of high quality.'

Solution Orientation: How UP Adapted

Student Access to Technology

The success of UP's hybrid mode is dependent on students having access to personal computing devices for the duration of their studies. On campus, students have access to thousands of computers as well as free Wi-Fi. With the lockdown, many students were cut off. However, the Department for Information Technology Services (ITS) strove to provide as much support as possible for students on campus and online.

During the lockdown period, ITS onsite services continued at specific campuses according to the lockdown level and requirements. Computer spaces were available on Hatfield Campus and Groenkloof Campus, subject to permission from faculties, to students who were unable to work from home. The residence IT facilities remained operational as long as the residences were in use, and the Prinshof CBT facility continued to operate throughout the year. Invigilated assessments were conducted onsite with the necessary social distancing and other guidelines in place.

Since working from home only started in May, and students were already used to UP's different facilities and support services, the decision was made to take the entire model online and keep the support structures in place at all campuses and facilities. Apart from what was required onsite, online support focused on assisting students with their personal devices and access to the UP systems; continuing software installation services and personal device support; and allocating teams to be available while clickUP assessments were being conducted.

ITS set up an information page on the public web[7] that provided contact details for each facility. It also hosted several documents developed to assist the students with working from home.

The information was communicated on various platforms and through different channels. Lecturers and the SRC also communicated the information. ITS support desks remained operational between 08:00 and 17:00 on weekdays and were continuously staffed by student assistants monitoring the email inboxes and other channels. After-hours support was made available in certain circumstances. Support was done via telephone, WhatsApp, email, TeamViewer, or any other platform that the students could access.

Apart from the support desks remaining in place, ITS helped the UP Student Laptop Loan Project to become functional (see the details that follow). The team assisted with specifications, installing the necessary software, assisting the students in using their devices, and providing warranty support to them. ITS staff will also drive the process to receive and assess the laptops that are returned by students who no longer need them.

7 https://www.up.ac.za/it-services/article/2891993/student-computing-services

UP Student Laptop Loan Project

For two years prior to the lockdown, the University had been planning to provide laptops to students who do not own any personal computing devices. Given students' expressed preference for laptops rather than tablets or other hand-held devices, this initiative was known as the UP Student Laptop Loan Project. Its work had to be accelerated from March 2020 in the context of the COVID-19 pandemic and the impending lockdown.

The University decided to use the following two criteria to identify students most in need of laptops during the lockdown period:

- Student academic activity
- Financial need

In keeping with its data-led approach to decision-making, the University used aggregated descriptive data on its learning management system to establish academic activity. The Department for Education Innovation started to screen undergraduate students to identify those who had been academically active since the beginning of the academic year but who, since the beginning of the national lockdown, had not been accessing clickUP by means of a laptop or desktop computer.

EI used Blackboard Analytics for Learn to assess academic activity. The information included student clickUP activity statistics as well as student biographical and enrolment data from UP's business management system, PeopleSoft. An initial analysis indicated that on 18 April 2020, 10 132 of the 38 161 undergraduate students at UP had used only mobile phones to access clickUP since the lockdown or had not accessed the system at all. Faculty student advisors contacted the students who met the academic activity criterion referred to above to determine whether they had access to a laptop or desktop computer.

The next step was to establish the financial status of students who indicated that they needed laptops. The names of qualifying students were sent to the University's Department of Finance to apply a financial means test. In the first instance, being an NSFAS grant recipient was used as a determinant of financial need and all NSFAS grantees contacted by the advisors (and who indicated a need for a loan laptop) were placed on the list of students who met the first and second criteria and therefore qualified for loan laptops. Of the 10 132 students identified by the activity criterion, only 2 713 were NSFAS students.

After the NSFAS students received laptops, the project was extended to include other students who did not have the means to acquire a personal Internet-enabled device. These included lower- and middle-income students who met the financial means test applied by the Department of Finance.

By 1 June, the University had distributed 1 944 laptops. It should be noted that a total of 3 202 students had qualified to receive loan laptops based on the two criteria. The key reason why only 1 944 laptops were allocated is that several students declined to sign a loan agreement with the University. For logistical reasons, it was also not possible to send laptops to students living abroad. Eventually, 2 247 laptops were despatched in 2020.

Given the possibility that there might be cases in which the University could have erred in applying the two criteria, an appeals process was instituted as part of the project. The first laptop appeals committee meeting took place on 10 June. The committee upheld the majority of appeals by undergraduate students, including those funded by Funza Lushaka (education) bursaries.

It is clear that data were significant in affecting decisions made.

UP Connect Project

The Department of Information Technology Services developed a unique portal called UP Connect[8] for students and staff to access the University's digital systems without incurring any mobile data charges. UP negotiated with various mobile network operators to zero rate all UP-hosted services in an effort to reduce mobile data costs a student might incur while accessing UP resources such as clickUP, library services, counselling, advising, the student portal and other curated, digital UP resources. This innovation was made possible with the help of South Africa's major telecommunications providers and works on all the networks, including MTN, Vodacom, Telkom and Cell C.

The main issue with the zero-rated service was that it had technical limitations in that the mobile operators could not zero rate dynamic IP addresses and were also reluctant to zero rate large lists of IP addresses covering all the services offered by UP. UP Connect was the solution to this problem. It provides a single entry-point for all UP resources, which gives a single IP address to the mobile operators to zero rate.

UP Connect is hosted directly on UP's Palo Alto Networks firewall and allows students and staff to authenticate and subsequently access UP resources. UP Connect was conceptualised and implemented in a very short space of time, enabled by the fact that it was technology that UP already owned and with which it was familiar. In the space of roughly one month, the UP Connect portal was designed, tested and deployed in March and April of 2020.

While staff and students are able to use UP Connect from any Internet provider (fixed line or mobile), to benefit from the zero-rated functionality, they must be connected via Vodacom, MTN, Cell C or Telkom Mobile, using a SIM card and mobile data.

8 https://connect.up.ac.za

ITS and the Department for Education Innovation (EI) were the two main internal role players in getting UP Connect working. EI's role was to test the system and act as the bridge between academic staff and ITS, which designed, implemented and maintained the platform.

Once UP Connect was functional, all staff and students were able to sign on and benefit from the zero-rated service. The impact on disadvantaged students was notable. There was a large initial uptake with the average number of connected sessions between 3 000 and 6 000 students per day.

Concern remains over international students who returned to their home countries and could not benefit from the University's zero-rated access agreements with the major South African Internet service providers, and for those South African students who live in rural areas where they might not have electricity or cell phone coverage.

The free Ready-for-Work tutorials available through Enterprises University of Pretoria on the clickUP platform had to be processed separately when data showed that many students registered for, but did not complete, the tutorials. It was discovered that they were not included in UP Connect as the external URLs for online resources had not been captured as part of the initial roll out. The matter was rectified, and students could benefit from these valuable resources, newly revised for 2020 and more interactive. Additional tutorials had been added to address contemporary work-related knowledge and skills.

Funding Emergency Remote Teaching and Learning

At the beginning of March 2020, the University of Pretoria established a Solidarity Fund to purchase laptops for students who desperately needed these devices during the lockdown period. The fund received donations from faculties, the University Executive, staff members and external donors. The faculties, in particular, made substantial contributions. Some laptops were donated: Nokia: 97; Motshepi Foundation: 315; Aspen: 600 (for use by the Faculty of Health Sciences).

Some funders came to the table to support other activities:

- The Michael and Susan Dell Foundation (MSDF) called for proposals for support. MSDF already funds hundreds of students annually through two programmes: the Dell Young Leaders Programme (with full bursaries as well as wrap-around support) and Sikelela Scholars (through wrap-around support). Thanks to the generosity of the foundation, the University was able to extend the hours of the advising manager and appoint four additional advisors for all students. In addition, funding was made available to the Department of Student Affairs for additional clinical and educational psychologists and sessional psychiatrists, an online reading programme for students with disabilities and the development of a counselling app.

- The Oppenheimer Foundation called for proposals and, as a result, the University was able to appoint advisors for postgraduate students.

The Department of Higher Education and Training also allowed a once-off change request for the approved 2018–20 University Capacity Developing Programme, permitting universities to redirect funds from staff development to student success activities, such as more online tutoring and advising.

Student Support and Development

FLY@UP: Minimum Time to Completion Campaign

The Academic Orientation Programme was held at the beginning of the year for first-year students with faculty student advisors (FSAs) playing a major role. FSAs were also responsible for the follow-up extended online orientation (UPO) module. The UPO module for each faculty normally runs for eight weeks during the first semester but was extended to August in 2020 to relieve the pressure on students. An innovation in 2020 was the addition of Brave, the UPO Bear Bot, which answers frequently asked questions.

The clickUP manual for student orientation was reviewed and expanded.

Only two of the scheduled contact FLY@UP events were held in February on the Hatfield Campus as a collaboration between Education Innovation and Health Services in Student Affairs.

All post-lockdown FLY@UP communication with students provided links to health, counselling and advising services. The approach to student success is always holistic.

FLY@UP event on the piazza on the Hatfield Campus

Winning poster

Competition announcement

FLY@UP 'My Pledge' posters

A FLY@UP corona support webpage was created[9]. This page was linked to the UP corona support page for students and the Learning THE UP WAY Online campaign, in collaboration with the Department for Institutional Advancement (DIA).

A virtual competition was held to create a sense of community while students were studying remotely.

Students entered original poems, songs, dances, photography, paintings and digital artworks. All the art elements were then combined into the FLY@UP virtual student event, which will be made available to all UP students in 2021. Enabling students to provide content to the campaign has been an ongoing strategy.

Another virtual activity asked students to make a pledge regarding their own success. The FLY@UP campaign has always emphasised the student's agency in his or her own success. Included in the pledge was the provision for students to share one thing they had learnt during lockdown and a message of support to their fellow students, all of which were uploaded to the website. Some of the messages were chosen for the motivational campaign in the second semester, once again bringing in student voices.

An online game with links to UP support resources was developed and uploaded to the UP web and clickUP. Named Ups and Downs, it follows the 'Snakes and Ladders' game rules with fun messages popping up to encourage students to make use of UP's resources and support.

FLY@UP, in collaboration with the EI video production team, developed a video for the virtual #chooseUP day: Technologies and Terminologies at the University of Pretoria.

Advising

The main function of faculty student advisors is to provide co-curricular support and development: advice on module choice, dropping modules, study skills, time management, stress management and so on, offered through workshops and individual appointments. They also refer students with psychological problems to counselling, students with content problems to tutorials and students with financial difficulties to Finance.

In addition to these services, analytics data show that students regard them as a one-stop support service for everything, so knowing the University and being able to refer students

9 https://bit.ly/37R0vpd

appropriately—whether for IT, administration, or health services—is core. Analytics data post lockdown showed that students were consulting advisors on an even wider range of problems than before the lockdown.

FSAs continued to support students online. Each FSA was provided with a tablet and mobile data. FSAs established advising via WhatsApp, which was welcomed by students. A 'please call me' service was also introduced to assist students who did not have access to mobile data or smart phones.

To make FSA contact details more accessible, a dedicated web link was created[10]. The site provided a link to the online workshop series, also advertised on the FLY@UP website.

The FSAs used the new online Learner Case Management System on their tablets to capture their interactions with students electronically. The FSAs used Blackboard Predict (an AI-enabled analytics system) to identify students who were at risk of failing and to arrange one-on-one sessions with them.

FSAs also helped with analytics data collection for some of the innovative student support initiatives. Despite all the successful interventions, clickUP data showed that 427 of the undergraduate students were still not active. The FSAs tried to contact all these students; 121 did not answer their phones and 100 indicated that they had deregistered. Many of the students indicated that they were fine and cited various reasons for low clickUP activity. However, 28 indicated the need for telephonic tutoring and 35 requested hardcopy material, although eventually 53 received printed material.

All students have access to a study guide for each course. The study guides provide detailed information to students on how to prepare for each lecture session and provide a clear weekly work schedule and detailed assessment plans. In response to the information compiled by the FSAs, arrangements were made with a printer and courier services to ensure that identified students received their learning material.

10 https://www.up.ac.za/advising

FACULTY STUDENT ADVISOR REFLECTION:

'The words that come to mind when I reflect on the experience of working from home and supporting students are: adaptability, resiliency, time management and, most importantly, self-care. I felt like technology provided us with the means to contact, assist and support students effectively while still attending to their personal needs. We conducted needs analyses of the students as well as the needs of the EBIT FSA team and together used this to inform our practice and make it meaningful. It is important the students felt heard, were reminded of their strengths and that they were not alone in this process. We normalised the experience and reminded students that we all had to make changes to cope during COVID-19. For me, a factor that contributed to working efficiently from home was setting boundaries professionally, creating a balance between personal and professional care so you are able to help students to the best of your ability. This was achieved by opening up channels of communication, providing different platforms for intervention (online, but both individual and group), keeping up to date with new technological advancements being made available and updating student resources to make it relevant for online studies and working from home.'

Tutoring

Tutors are trained by education consultants in the Department for Education Innovation and lecturers to work with students in modules identified by each faculty. These are predominantly what the University terms 'high impact modules', usually first-year modules with large enrolments and serving students in multiple programmes. Modules impeding progress at any undergraduate year level might also appoint tutors.

For many years, a contact mode was the default for tutor training; the majority trained in late January. For the start of 2020, an online course was designed comprising ten videos, exploring three themes: the tutor, the student, and learning. In the tutor theme, the consultants discussed the roles and responsibilities of a tutor, characteristics of a good tutor, how to establish ground rules for a safe learning space and managing diversity. In the student theme, they considered how to handle difficult student types, the growth mind-set and learning, motivation and reflection. In the learning theme, they covered how learning works as well as questioning and study skills. The course takes about two hours to complete. Upon successful completion of the online course, tutors received a letter of participation. Faculties were consulted in January 2020 and the decision was made to retain a hybrid model with elements of contact to cater to faculties' unique needs or give tutors hands-on practice.

From May, tutoring continued online via the relevant modules' clickUP courses. The head of e-learning and instructional designers added an online component to the tutor training course in April, to support tutors to work online using clickUP tools (quizzes, discussions and Collaborate). Fortunately, several departments had already been experimenting with online tutorials using Collaborate since 2013, so the University had experience in this mode.

After the FSAs discovered that some students had no Internet access, the University introduced telephone tutoring services for those affected. Telephone tutors spent at least one hour per module, at least twice per week, helping the students assigned to them with their studies and advising them in respect of assessments. The tutors also informed FSAs and the Student Counselling Unit of students who required their intervention.

The faculties identified 43 telephone tutors. The tutor training took place on 28 May and was attended by 37 telephone tutors. The EI Deputy Director: Academic Development managed the appointment of the telephone tutors centrally. A recording of the training and the PowerPoint

slides were shared with those who could not attend the training, on a dedicated Google Drive account. Airtime was purchased for each tutor. On 1 June, the 47 telephone tutors who had been appointed across various faculties to serve 83 students made their introductory calls.

The University applauds the work of all the tutors who helped fellow students while dealing with their own modules suddenly shifting to online mode.

TUTOR REFLECTION:
Faculty of Education

The first challenge I had was the lack of experience in online teaching and learning. It made me so anxious. Even if I were doing something right, I would feel as if it was wrong because I lacked experience. At the exact moment when I was getting used to and comfortable tutoring in contact classes, I was faced with another challenge of online tutoring. Tutoring being my first-time experience, and I love tutoring, I had no choice but to bounce back and embrace the challenge. The only thing that helped me to overcome this challenge was resilience and seeing that online teaching and learning challenges were not faced by me alone but everyone else in teaching and learning.

Network issues and the lack of teaching and learning support material left me depressed, frustrated and furious. Knowing that I have work to do, and I am unable to do it because of network, sometimes I would even lose my temper because I knew that, if I were on campus, I would not face such problems, I would meet with students face-to-face and have access to different facilities. On the other hand, students would send emails and I would receive them after a while owing to network issues; this made me feel guilty even though it was not my fault.

My problem was that I wanted everything to go well at the same time and it was impossible. I overcame this challenge by accepting that one cannot fix everything at once, and I shared my problem with my co-worker.

Working at home, not having enough time to plan my work, not having enough space to do my work, and not having access to the library—it was hostile and draining. Being at home and on campus is very different because the campus is quiet and it a good working environment while at home kids are making a noise, dogs are barking, neighbours are playing music and cars moving around in the streets: it was horrible. Sometimes I would tell myself that tomorrow I will email the course coordinator and tell her that I cannot take it anymore but being persistent kept me going and I had hope that I would eventually get used to online teaching and learning. The same challenges I faced, my colleagues also did, and there was no other way but to support each other. The online training course, the support I got from my colleagues, and the responsiveness of students kept me going.

Challenges do not make a person weak but make them strong. I relied on different sources to overcome the challenges: I watched YouTube videos, got tips from TV shows, and I got tips from online articles. The switch from contact classes to online teaching and learning was a challenge and a lifetime experience.

Mentoring

The Mentoring Unit in the Department of Student Affairs, in collaboration with EI, allocates volunteer peer mentors to first-year students who self-identify as being at risk in a survey of academic readiness during registration, as well as to first-generation students and students from rural areas. Mentors are second- or third-year students, trained by the unit.

More often than not, they were mentees themselves and want to give back. In the first semester, mentors help first-year students to transition to the University, although the relationships tend to last much longer. Under normal circumstances, both mentors and mentees use a combination of contact and WhatsApp communication.

After the lockdown, mentors continued to support their mentees actively, online or on WhatsApp, as evidenced in video and written reports from mentors.

MENTOR REFLECTION:

'...this is a story of the brave navigating the unknown. It entails hardship, brotherhood, persistence and human ingenuity.'

The annual evaluation of the mentorship programme showed, once again, how much mentees appreciate and benefit from the support provided by the mentors. The responses to a survey showed that most mentees had maintained contact with their mentors post lockdown, and more than 90% of mentees strongly agreed that they would recommend mentoring to first-year students.

Counselling

At all times, but particularly in uncertain circumstances, supporting mental health and well-being is a priority. The University has a Student Counselling Unit (SCU) in the Department of Student Affairs (DSA) that is staffed by clinical, counselling and education psychologists registered with the Health Professions Council of South Africa.

However, the unit is small, comprising six permanent staff, who are full-time psychologists with varied duties besides counselling, including the HoD, who spends the greater part of her time on administration and management issues; five part-time sessional psychologists; and seven intern psychologists working under supervision.

Together, they serve about 12 000 students a year across all campuses. Services of the

SCU continued during lockdown through e-counselling or tele-counselling using WhatsApp audio or video calling. In a normal month, the unit averages 100 sessions a day, a figure that persisted during the first part of lockdown but increased later.

The SCU was a beneficiary of the Michael and Susan Dell Foundation grant to support students during the pandemic lockdown. As part of the application to the MSDF, the SCU applied for funding to increase the number of counsellors, develop a counselling chatbot, support students with disabilities with a reading programme and employ a sessional psychiatrist. All of the outcomes were achieved. The unit was able to increase its counselling services and serve more students.

Self-help material was placed on the SCU website, as were links to external sites with information on mental health and well-being. Students could access counsellors and content in a variety of media on various social network platforms.

The Department of Library Services (DLS)

The UP community has access to the online collections and virtual information support services of the DLS, which expanded because of the pandemic. A total of 295 218 additional e-books were added to the library's collection in 2020 to ensure that students and researchers could access the resources they required to complete the academic year successfully.

Meanwhile, a demand for book chapters and parts of books resulted in the library's Digitisation Unit allowing users to request sections of a book online, which the DLS staff would digitise (adhering to copyright regulations) and email to the user. The Digitisation Unit helped ensure that teaching and learning activities continued despite the lockdown regulations.

The DLS also negotiated with publishers to buy commonly used textbooks (such as those prescribed for undergraduate students and housed in the reserved collection) in electronic format. Although publishers usually do not sell textbooks in digital format to libraries, the DLS managed to negotiate with several publishers, some of whom have even made additional sources freely available during the pandemic. These resources were listed on the library's webpage for easy access and retrieval.

After the level 1 lockdown had been lifted, the DLS initiated a phased re-opening of all campus libraries, limiting the number of staff providing services physically while most library staff continued to work remotely in line with the University's guidelines.

The new reality in the library at Hatfield wearing face masks

The new reality in the library at Hatfield safe distancing

The MakerSpace produced PPE

To minimise contact, a contactless collection service for library material was implemented, allowing users to request DLS material online, followed by communication between staff and the user to collect the material from the library. Material could then be returned via the drop boxes at all library sites or by registered mail or courier, after which these items were quarantined before being re-shelved.

As regulations eased, the libraries re-opened from Monday to Friday from 09:00 to 18:00 and Saturday from 09:00 to 13:00. However, study spaces were limited and had to be booked online in advance. The number of study seats available in each library was determined by its size and capacity, as well as by the regulations regarding the number of people allowed in a public space. Owing to higher health risks, the study centres and computer areas (on all campuses) remained closed. Meanwhile, information specialists provided virtual information and research support services to the University community, and students were able to receive training on a variety of information-related topics via Google Hangouts, Blackboard Collaborate or Zoom.

The Learning Centre supported library users by expanding its virtual services to include a mobile phone and WhatsApp service and supported digitisation and access and lending requests by collaborating with both teams to change the Ask and Chat services to the new LibAnswers and LibChat. The staff received virtual training on how to use the new system and supported each other virtually to deliver quality service to users. Each question was answered with care, correctness and immediacy where possible.

By collaborating with various teams, the DLS identified a need for online training courses in plagiarism and academic writing. A narrated PowerPoint presentation and clickUP course on plagiarism were created, allowing students to learn at their own pace. This course was first launched among sociology and informatics students, but active marketing and the online booking service could popularise it.

The MakerSpace in the DLS strives to address real-world problems innovatively through design and creation and provides students with the opportunity to experiment with different technologies for teaching, learning and research. On an academic level, it assisted with printing 3D ticks for the Faculty of Veterinary Science, prototype mosquito feeders and replicas of the Homo naledi skull, as well as sets of lion's teeth and skulls with fracture wounds for teaching and learning purposes.

The MakerSpace Unit rose to the challenges that COVID-19 posed to the healthcare system. It produced 3D-printed personal protective equipment (PPE) for healthcare workers, including over 1 000 visor headbands and 2 500 ear savers. The visor frames were printed for the Faculty of Health Sciences and Steve Biko Academic Hospital as well as for the Netcare and Mediclinic groups.

In addition to these external collaborations, the MakerSpace still managed to address internal library requests, such as social distancing cones and hands-free door openers.

Teaching Development

The University is committed to implementing A National Framework for Enhancing Academics as University Teachers. The framework's aims include:

- Promote knowledge production and knowledge sharing about university teaching and learning
- Develop expectations of academics in their role as university teachers
- Enable continuous professional development (CPD) for university teachers
- Advance university teaching through leadership development
- Establish and maintain university teacher development structures, organisations and resources
- Ensure that academics are recognised and rewarded for the work that they do as university teachers

Promote Knowledge Production and Knowledge Sharing about University Teaching and Learning

Two types of research support teaching and learning: the scholarship of teaching and learning (SoTL) and institutional research, mainly in the form of analytics.

The University Capacity Development Programme (UCDP) of the Department of Higher Education and Training has for several years provided funds for a SoTL initiative to promote knowledge about teaching that can be shared at conferences or through publications as well as affording opportunities to improve teaching or assessment within a module, department, or programme. Staff members, mainly academics, applied for grants to conduct research into their teaching and assessment or student learning. Education consultants from the Department for Education Innovation were often involved in SoTL projects within faculties.

The Higher Education Research and Innovation (HERI) Unit in EI focuses on institutional research, using data and other evidence to improve student success. HERI collaborates with the Deputy Director: E-Learning and Media Development in EI, the expert on analytics in the learning management system, and the Institutional Research and Analytics (IRA) Unit in the Department for Institutional Planning. The head of HERI chairs the University's Tshebi data analytics committee. Tshebi has done effective work over the past few years to raise consciousness and competence in data analytics across the University.

In 2020, HERI, with faculties and other stakeholders, focused on the review of high impact modules per faculty according to criteria approved by Tshebi. Certain modules received intensive attention from a group of role-players that included lecturers, institutional researchers, education consultants and instructional designers. Lecturers in other modules could access both their learning management system data and dashboards on the IRA system. There was marked improvement in module pass rates in 2019 and the work continued in 2020, first in contact mode and then online.

REFLECTION FROM THE HEAD OF THE HIGHER EDUCATION RESEARCH AND INNOVATION UNIT:

'The Tshebi high impact modules (HIMs) project emanated from the Tshebi data-analytics committee. The project started in 2019 with the evaluation of 20 HIMs (mostly high failure modules with large student enrolments). The module evaluations consisted of an evaluation of the historical performance of the module, and very importantly, intensive meetings with the teaching team and stakeholders around the factors that impact on the teaching design of the module and aspects related to student engagement. Most of the Tshebi HIMs showed a marked improvement, and therefore the module evaluations were scheduled to continue in 2020. However, because of the national lockdown, the first semester modules could not be evaluated as in 2019. A solution had to be found. An alternative method was investigated. MS Teams, including OneNote, was identified as a workable collaboration tool for module evaluations. The second-semester modules were identified, and MS Teams meetings were scheduled. In the end, 17 module evaluations in four faculties were concluded in 2020, quite an achievement. MS Teams proved to be a very useful tool for the evaluations and will be used in 2021, with minor adaptations to the Teams workbook.'

Develop Expectations of Academics in their Role as University Teachers

EI runs two academic induction programmes for newly appointed academics each year. The January session was face-to-face but the July session was cancelled.

Education consultants are usually also involved in conducting peer observations of classes for lecturers wanting to improve their teaching or needing such a report for their teaching portfolios if they are targeting promotion. At the start of the year, observations took place in the classroom; after the lockdown, observations continued with consultants monitoring online teaching. Online observation was holistic, encompassing the clickUP module, the study guide, communication with students and the facilitation of learning (gleaned from recordings, live sessions, discussion boards, etc).

Student feedback on teaching has been elicited for many years through a student feedback instrument designed by EI. This feedback helps to shape teaching expectations from the perspective of the students. The latest version was piloted on a new platform, EvaluationKIT. The pilot was administered from 1 to 30 April to 56 first-quarter and first-semester modules. The sample consisted of 16 055 students and over 24 000 module enrolments. The pilot started just after the start of the lockdown period. The response rate was 72%. Feedback was given to the deputy deans and staff from EI via Collaborate. Five rounds of the survey were administered during the year.

EDUCATION CONSULTANT REFLECTION:

'When the lockdown was announced, we were all under the impression that it would last three weeks and then things would be kind of "normal" again! How wrong we were! A year later and we were still wearing masks, sanitising hands at least 20 times per day and avoiding social contact—even with our family members! We soon realised that working from home was not as pleasant as we first expected it to be. You are quite lonely without the immediate support of colleagues that you were used to. Although I am well qualified in the field of e-learning, I had to make a mind shift in order to "practise what I preach". In the process of changing the way we present our training, I realised how different it is: one cannot only change what one did in a face-to-face environment; a complete overhaul of the training was necessary. Thanks to supportive and enthusiastic colleagues, it turned out to be a good learning experience in which I think we succeeded, and it made us more aware of the challenges our lecturers and students face.'

Enable Continuous Professional Development for University Teachers

Education Innovation and the faculties regularly schedule teaching development activities as a matter of course. Professional development opportunities for academics continued remotely during the pandemic, as did coaching and consultation.

Led by Department for Education Innovation

The department includes an Education Consultancy Unit that allocates one consultant per faculty but also shares the individual expertise of consultants for bigger workshops or the flagship academic induction programme. The instructional design unit offers assistance with the use of technology to support teaching and learning, predominantly but not exclusively on the use of the learning management system and its associated products. Designers work more centrally but are also allocated to work alongside consultants in specific faculties.

Instructional designers in EI have developed a range of priority courses supporting teaching with technology in addition to providing self-help material online and an e-learning help desk. The courses focus on facilitating e-learning, all aspects of Blackboard tools and use of Turnitin, narrated PowerPoints and interactive video.

The scheduled priority courses were presented during the first three months of 2020 while staff were still on campus. Post the lockdown, the e-learning unit implemented additional measures, which included various documents on academic continuity with online tools, expansion of the help-site documentation, the development of self-paced online courses based on the original priority courses, an examination support room and higher support levels to lecturers who needed it. Virtual meetings were arranged on topics such as teaching continuity and online assessment. The demands varied according to faculty but using Collaborate was a common topic—prior to the lockdown, lecturers tended to use clickUP for asynchronous rather than synchronous activity.

REFLECTION BY THE HEAD OF THE E-EDUCATION UNIT:

'At the start of lockdown, the clickUP training team and I were confronted with the need to upskill lecturers for their online teaching. Fast. The solutions had to be user-friendly, available 24/7 and benefit all clickUP users, novice to advanced. The key to accomplishing this was a variety of approaches, from large, live emergency information sessions on institutional, faculty and departmental level, to virtual training of individual lecturers; and from bite-sized, static self-help documents on the clickUP help site, to structured self-paced online courses. The team transformed all 11 e-learning priority courses into self-paced online courses, and they were used by a good number of lecturers.

The virtual meetings with lecturers were rewarding, as they allowed for their personal development while simultaneously unlocking case-specific solutions that benefited students. It gave me a sense of purpose despite the isolation. I noted with interest how the need for innovative solutions drove us beyond ourselves towards a true learning organisation, as instructional designers and lecturers learnt from one other and shared lessons among one another and with the wider UP community.

I salute my team for their courage, patience and determination amid the pressures of unceasing support requests and their own family responsibilities. I am proud that we could contribute to the successful completion of the academic year amid the pandemic.'

In a large and busy university, lecturers are often not available to attend training courses. In a way, going online improved the situation. Not only did attendance increase in some cases but presentations could be recorded for later viewing by those who could not attend. Google Drive became a useful repository for resources.

Another unit in EI that was in demand during the pandemic was Creative Studios as lecturers sought to enrich their modules with graphics and videos.

Faculty-Based

Brown bag lunches have become a common feature of teaching development in faculties. They started off in contact mode until the end of March and continued in the virtual environment after the lockdown. Effectively, virtual sessions or webinars concentrated on teaching and assessment online as well as using analytics data from the online environment to improve teaching and student engagement. Assessment is always a popular development topic, and it became even more important in the new mode of teaching.

Online tutoring was a topic in some faculties. Training was also offered on a variety of virtual office programs and an onscreen marking tool.

Establish and Maintain University Teacher Development Structures, Organisations and Resources

A critical success factor for the implementation of UP's hybrid model is the Department for Education Innovation. The academics' knowledge and skills in curriculum design and delivery, the latter involving teaching, assessment, and student engagement and support, are enhanced by the expertise in EI, which offers continuous professional learning opportunities for contact and e-learning modes. The opportunities involve workshops, self-help online resources, one-on-one or small-group coaching and consultation (contact, email or on the telephone).

Education Innovation used a grant from the UCDP to organise the sixth annual Flexible Futures conference on 4 August.

Flexible Futures conference 2020

It had become a tradition that every year one of the keynote speakers presented online. For 2020, the whole conference was virtual. The theme was 'Teaching innovations in higher education: COVID-19 and beyond'. Using the UCDP enabled the University to sponsor attendance for UP staff, giving them the opportunity to address critical issues as well as learn and share innovative teaching, learning and assessment methods, student success interventions, and the effective use of educational technology in higher education. The sponsors for this conference included Blackboard, Cengage and Amazon Web Services (AWS).

The opening addresses by the Vice-Chancellor and Principal, Professor Tawana Kupe, and the Vice-Principal: Academic, Professor Norman Duncan, challenged the participants to reflect on the successes and limitations of remote teaching and learning during the COVID-19 pandemic and to discuss the future of teaching and learning.

PROFESSOR TAWANA KUPE:

'The future of higher education is digital and online. Being innovative and creative is a continuum. I'm not saying it will be purely online—there will be a spectrum of hybrid/blended learning to fully online learning. Spaces for teaching and learning will change while there needs to be major capital outlay for IT infrastructure.'

The plenary was delivered by Dr Tony Bates, President and CEO of Tony Bates Associates Ltd, a private company in Canada specialising in consultancy and training in the planning and management of e-learning and distance education. He is the author of Teaching in a Digital Age: Guidelines for Teaching and Learning and one of the foremost thinkers internationally on online pedagogy. In his paper, 'Why get on the bus to come to campus? Maximising the benefits of hybrid learning', he reflected on what can best be done online and face-to-face, which students different modes suit, and how learning online could develop the knowledge and skills needed in a digital age.

Ensure that Academics Are Recognised and Rewarded for the Work that they Do as University Teachers

Teaching awards are given at various levels within the institution. Some are departmental but all faculties receive funding from the UCDP to provide awards relevant to their faculties. The University also awards Teaching Laureates and a Chancellor's Award for Teaching.

Education consultants worked with deputy deans to define criteria for teaching awards within faculties and with lecturers to design portfolios when applying for awards, thus contributing to the valuing and rewarding of teaching within the University. They also contributed to portfolio development for lecturers applying for promotion.

The institutional Teaching Laureates went to Ms Heather Thuynsma and Mr Roland Henwood of the Department of Political Sciences in the Faculty of Humanities, and Dr Rory Biggs in the Department of Mathematics and Applied Mathematics in the Faculty of Natural and Agricultural Sciences, at a virtual achievers' event held in November 2020.

Ms Heather Thuynsma and Mr Roland Henwood

Heather Thuynsma and Roland Henwood teach in the Department of Political Sciences in the Faculty of Humanities and are keen to expose their students to other perspectives while showing them the import their academic training provides. They have won both their Faculty and the University's teaching and learning awards (2020) for a novel course that compares politics across four different continents, in real time. This weekly Global Classroom brings UP's students together with their peers from University of Akron in the USA, Fundação Armando Alvares Penteado (FAAP) in Brazil and Le Mans Université in France.

For the past four years, the Global Classroom has used video and social media channels to bridge language and cultural divides while also teaching students to appreciate how politics and political interactions shape their future. The active learning pedagogy relies on discussion, contact with senior legislative and political consultants, and exposure to texts by academics from disciplines that intersect with politics such as food and climate scientists, health policy experts and economists. The interactive format and teaching approach encourages students to grasp their current circumstances as well as other (not always complimentary) opinions. Students have successfully expanded their perspectives from a somewhat insular South African focus to one that can research and interrogate practical problems and, through a new social network, work to develop solutions that can be implemented across the globe. In essence, students enjoy a working semester abroad in four different countries without leaving Pretoria.

Dr Rory Biggs has a prominent personality with a contagious energy and zest for life. He teaches large groups of students and class attendance is excellent. In 2019 he won a teaching excellence award in the Faculty of Natural and Agricultural Sciences.

He functions within the hybrid learning paradigm, truly understanding how learning works. He starts a lecture with an online quiz, posts weekly podcasts where the lecturing team have course-related discussions, uploads recordings of lectures to YouTube, presents online discussion boards for interaction and sends out personal emails on performance. Rory has also risen to the challenge of online teaching and learning in the COVID-19 pandemic. Using everything from Discord servers to programming new systems for handling online assessments, he keeps making his modules engaging and successful.

Rory is leaving a legacy through the creation of the T&L@NAS Bulletin. He sources stories (together with the education consultant), edits the contributions and does the desktop publishing himself. He believes that the bulletin serves to empower colleagues and in so doing serves to empower students

Students praise him for his enthusiasm and love for teaching. They say his passion for the subject is infectious and that there is never a dull moment in class.

Dr Rory Biggs

Dr Nadia Trent

The Chancellor's Award for Teaching went to Dr Nadia Trent of the Department of Industrial and Systems Engineering in the Faculty of Engineering, Built Environment and Information Technology.

Professor Trent says that her motto for teaching is 'It's personal'. She believes that academics are not just peddling theories and techniques but are challenging the way students perceive and respond to the world around them. They are forming paradigms and thought patterns. She asks: 'How is that not personal?' She also believes that 'students are like us or, said differently, lecturers are just older students. Like us, students prioritise the activities they find fun and rewarding and are engaged when what they study has relevant application and significant impact.'

These foundational beliefs led her to appreciate the benefits of project-based learning, but she was frustrated with the outcomes of group work and semester projects within modules. She was therefore eager to pilot the Vertically Integrated Projects (VIP) programme at the University of Pretoria. VIP teams are small, vertically integrated, transdisciplinary research and development teams that work on real industry or research problems under the mentorship of a faculty member (team leader). Students from second year through to PhD level may join these teams for a minimum period of one semester, but ideally students are encouraged to commit to the team for two years to reap the full benefit of the Learn-Contribute-Lead growth cycle. Self-regulated learning, collaborative learning and mentorship fuel the fires in these teams, providing a learning experience that is quite unique on campus.

Professor Trent states: 'I am honoured to have received the 2020 Chancellor's Award for my role as director and champion of the VIP@Tuks pilot (2018–2020). But I would be remiss not to recognise the team leaders and students that made the first two years of VIP possible.'

The award for curricular community engagement was made to Professor Christiaan Bezuidenhout of the Department of Social Work and Criminology in the Faculty of Humanities.

Professor Bezuidenhout has been the Criminology Honours Programme Coordinator for the past 22 years. He believes that curricular community engagement creates opportunities for innovative learning environments, experiences and assessment practices. As part of the Criminology and Criminal Justice System (KRM 710) module, Professor Bezuidenhout organises for the criminology honours students to undertake a seven-week community engagement project each year. The purpose is to advance students' knowledge of the field of study and the operations of the criminal justice system (CJS). Every year, his students work in different areas of the CJS for their community engagement projects. Students conduct participative research and intervention in different institutions (eg, police stations, prisons, courts, underprivileged communities, NGOs that work in the CJS field, senior citizen facilities, schools, etc). Professor Bezuidenhout has established wonderful networks in recent times. Every year, at least five companies recruit UP criminology honours students because of their employability. At least 80% of the honours students are offered employment directly after completion of the programme. The KRM 710 module is the 'synthesis' module for all undergraduate and honours knowledge of criminology. It integrates knowledge, experience and personal ideas and practice to produce well-rounded criminology honours graduates.

Professor Christiaan Bezuidenhout

Evidence of Effectiveness of Strategies

The University worked hard to achieve the best outcomes for its students during the pandemic. Despite a variety of challenges, and a preference perhaps for contact teaching, students and staff overcame, continued to hope and made the best of a situation that was not ideal.

A survey of students and lecturers in May elicited feedback on the University's remote teaching strategy. The survey ran on the recently implemented software platform, EvaluationKIT. The survey was sent to over 37 000 students, with 172 300 module registrations. The response rate from the students was 36%. The lecturer version of the survey was distributed to all lecturers (1 672) with active modules in the first semester. The response rate was 38%. Results once again showed that success is not just a question of intellectual capacity but one of well-being and environment. Many students and staff revealed the inhibiting factors that they faced.

Challenges that Students Faced

- Some students were in overcrowded homes, which were often already small. The students, their parents and their siblings were all in a confined space. Students had no dedicated, quiet place to study. It was noisy. Sometimes studying was labelled as 'doing nothing', so their time was redirected to domestic tasks and supervising siblings.
- Poor connectivity and buffering on synchronous Blackboard Collaborate classes and asynchronous viewing of recorded classes or videos disrupted efforts to learn online and take assessments. This situation was exacerbated by load shedding. Many had technical problems, including accessing the UP Connect portal, so they had to buy data when they really did not have the money.
- Stress was common, both because of the pandemic and not being on campus, but also when connectivity problems disrupted classes or tests. Some students became depressed and felt overwhelmed.
- Some students failed to understand when having to rely mainly on the textbook, so they felt unprepared for tests.
- Workload seemed to have increased, which was seen as a positive and a negative: keeping them busy with a schedule, better for their mental health, but also keeping them working over weekends.
- Foreign students, such as African students on the MCF bursaries, could not return home. Some who went home had access problems: they did not qualify for zero-rated services from South African providers, and the University was not able to dispatch laptops to them.

LECTURER REFLECTION:
Faculty of Health Sciences

'Having invested time and energy to develop myself as a health professions educator, I had a great belief that my modules were easily adjustable from blended to fully online platforms. I have been a passive watcher of the students' social media meme pages for some time, so I felt I had a view of their worries, concerns and habits. For the most part, my confidence was not unjustified, and the feedback I was getting reaffirmed that I was doing the right thing. All this came to a halt when the first assessment was due.

I approached the design thereof with a lot of input from the students to assess what would be feasible. An asynchronous test was eventually chosen, as it seemed to accommodate students' unique circumstances best, while maintaining the integrity of the assessment itself. I lost count of how many times I reassessed the feasibility of the parameters, including time allocations, number of questions, phrasing used and so forth. After consulting Education Innovation, I eventually made my decision.

The assessment started off well, with only minor technical hiccups experienced by some students owing to slow connectivity and clickUP access issues. I was confident that it was progressing well, until about 30 minutes to the deadline for submission, when my inbox became a deluge of issues: laptops breaking; connections failing; documents getting corrupted; power loss; Turnitin crashing. Damage control and split-second decisions had to be made. I fell into a very unfortunate paranoia of being raked over the coals on social media meme and rage pages, such as those that are quite popular on Instagram. My biggest fear was that the trust that I had built with students during this time, and the moral obligation that I had to provide quality education to them, had faltered.

After releasing the marks, explaining the ways in which we tried to remedy the issues experienced, reading through the student feedback, and failing to find one mention of my name on Instagram or Facebook, I had failed to put my belief in the students that they would understand how new this circumstance would be for us as well.

If I learned anything, it's never to forget the understanding that our students have for what is happening, and the trust they place in us when we also try our best. I write this specifically for those that have lost confidence in themselves when something went wrong, got frustrated when their name popped up on a meme page, or when they feared students would not understand. I also write this to thank my students for being just as prominent role-players in my development as Education Innovation, my colleagues and peers in health professions education are.'

However, students overcame many of their challenges and even saw some positives. One was that they realised that they were taking responsibility for their own learning and time management. Another was that they were more confident in asking a question in a Collaborate session and more certain that their question would be acknowledged and answered. Some students valued live sessions; others preferred recorded lectures and narrated PowerPoints. While students had different experiences in some modules, many remarked on how well organised most modules were, with a weekly schedule that made it easier to keep on track. Comments were also made on the enthusiasm and passion of the lecturers, their positive, caring attitudes and their quick responses to queries. Others mentioned the effectiveness of online tutoring. Less time spent travelling or waiting around on campus between lectures meant more productive study time. Students' survey responses expressed appreciation for what the University and lecturers were doing to help them complete the academic year.

In most faculties, students really valued the synchronous sessions in Collaborate, which were sufficiently like contact classes, with opportunities to ask questions and improve understanding immediately. As Collaborate sessions are recorded, they were also able to review the lesson afterwards, a strong positive in many of the responses. They could pause recordings and take notes or replay the recordings to improve understanding. Some also liked the use of WhatsApp and wondered why little use had been made of it before.

Some students liked the flexibility of online learning—working at their own pace, in their own time, to their own schedule, sometimes on only one module a day. Others expressed a preference for on-campus interactions in class and with peers—they did not like the online environment and did what had to be done but did not find it any fun.

STUDENT REFLECTION:

Survival of The Fittest by Kudakwashe Meja

Trained to survive would be the term I use,

In a battle against two giants, one invisible and the other new.

Each step was stationed as last or maybe extra fuel,

Because in each area laid a land mine infused with work,

That you should have done yesterday,

While juggling scheduled lessons ready to detonate.

It was training to survive in the wilderness.

Early morning alarms, reminding you of planned tests,

Substituted planned lessons,

As numbers dropped like flies in each scheduled lesson.

For looking in the mirror could be done in classes,

So a shower was sometimes broadcasted.

Well, it was training for survival in the middle of the war,

Between two giants, one invisible and the other new.

Now to look back, in a past too stubborn to allow ignorance of its existence.

And the questions asked which battle captains at times could not answer,

One question would have remained answered today,

For in the survival of the fittest,

We all were fit indeed.

Challenges that Lecturers Faced

- Parents now had to home-school children or keep them occupied and grounded while trying to work.
- Stress was common. There was a sense of disconnect, working in isolation from colleagues and students. Workload increased.
- Connectivity was a problem in some cases.
- Some needed support in working online. They might have attended clickUP training but not implemented the tools much, and now they had to rely on them exclusively. Many lecturers mentioned their supportive heads of department, the work of the class representatives, the work of the tutors and sometimes of other assistants and the support from Education Innovation.
- Lecturers were concerned about students for a variety of reasons: stress, not being particularly adept at using computers or clickUP, not being able to do practical work, lack of devices and needing to go low-tech, lack of data and connectivity and lack of self-regulation so tending to drop by the wayside. Some adopted a low-tech approach to accommodate what they knew to be their students' circumstances: WhatsApp and podcasts were used, for instance.
- Lecturers responsible for practical subjects struggled.
- Lecturers were divided on student attendance and engagement online: some commented on much higher attendance and more interaction while others were frustrated by low attendance and little interaction.

The commitment to finishing the academic year was clear.

LECTURER REFLECTION:
Faculty of Health Sciences

"'Heaven lies at the feet of your mother" is an Islamic quote used to honour the status of a mother, which is even above that of a father. Being familiar with the online context and attending many clickUP workshops, I felt rather confident that it would be a walk in the park. My students were also learning to navigate their way through this new way of life. No question was silly, even if they asked it a hundred times. I had to ensure that I was ever patient and present to see to challenges like access and points of confusion. Just as a mother would, I had to check in on absent ones and make sure no one was hungry during the lockdown. All this while attending to admin, webinars, meetings, narrating for an international conference and even recording a YouTube video. My husband often asked me, "Are you done?" My response was, you are never done, there is always something to do!

I don't have a great solution of how I overcame the most amazing and challenging year of my life. However, innate resilience become a survival tool to get through each day, as well as the support from the loving people around me, namely my husband and colleagues. By virtue of being an educator, you unconsciously take on the role of an academic mother, as you have a certain level of responsibility towards your students; you care for them and wish for them to succeed.'

Data from analytics systems on the LMS provided information on student and staff engagement in modules, which demonstrated the commitment to completing the academic year in 2020. Reports showed that lecturers, in fact, often spent more time online per module than did their students, showing their level of commitment and engagement. They also checked regularly with students to receive feedback to enhance their teaching.

Analytics data showed that only a low percentage of lecturers struggled significantly at the start and felt the need for additional support in overcoming the challenges of going online. Data came from a variety of sources: professional development interactions through virtual meetings; the records of the number of academics engaging with online development courses on the subject; as well the number of interactions with instructional designers and the help desk in Education Innovation. Lecturer comments in the survey also mentioned receiving help from their teams in the department and from student assistants.

Several lecturers commented on how they had to reconceptualise the curriculum and how it was delivered, focusing more on the student experience. Some reported the resulting interactions with their large classes as the best experiences they had ever had with them. Student remarks showed how structured the work schedules became, allowing them to plan better as well.

As positives, lecturers mentioned benefits such as not sitting in traffic, no interruptions and being able to work flexible hours when not engaged in synchronous contact with students.

Photo by Chris Montgomery on Unsplash

The Dean, Professor Elsabé Loots, and the Deputy Dean: Teaching and Learning, Professor Johan Oberholster

Faculty of Economic and Management Sciences

Enrolments
7 712

Undergraduate module pass percentage
87.1%

Graduates
2 397

Faculty Innovation and Excellence in Exceptional Times

100 Years of Achievements in the Faculty of Economic and Management Sciences

The year 2020 marked the centenary of the Faculty of Economic and Management Sciences at the University of Pretoria. Since its establishment in 1920, when a mere 32 students enrolled for the BEcon degree, the faculty has expanded its programme offerings and produces graduates who are ready for the future world of work. Today, there are close to 8 000 undergraduate and postgraduate students enrolled in various specialised BCom, BAdmin and associated postgraduate degrees.

The faculty has enjoyed numerous successes over the years. These include improved research performance, the introduction of classroom innovations to entice a new generation of tech-savvy students, accreditation of several programmes by statutory and professional bodies at national and international levels, and the continuous improvement of international rankings.

Faculty Dean, Professor Elsabé Loots, leads the team responsible for guiding the faculty into a future where she believes the culture of excellence that has become synonymous with Economic and Management Sciences will continue. 'We have extremely dedicated and innovative staff and high-quality students, and this combination is a recipe for success,' Professor Loots said. She applauded 'the commitment and availability of lecturers to facilitate high-quality and continuous engagement with students, encourage students to become serious about their studies and produce successful graduates.'

Celebrating a century of achievement in 2020

Professor Loots noted that the faculty's proven history of continuous growth and innovation has ensured that it remains resilient and on the cutting edge of how teaching and learning takes place. As students returned to their academic activities at the start of the second quarter of 2020 to a changed world, the faculty was ready to make maximum use of online learning to ensure no student was left behind.

Over the past decade, Economic and Management Sciences has maintained its reputation for excellence in teaching and learning. Teaching excellence is encouraged by EMS Teaching Excellence Awards being made on an annual basis (see three articles below). In 2020, this was again evidenced by the excellent performance in national professional examinations and competitions as well as accolades received by the faculty. Listed below are a few examples of the achievements of the faculty and its students during 2020:

- Students performed brilliantly in the South African Institute of Chartered Accountants (SAICA) Initial Test of Competence (ITC) over the past 14 years. The ITC, a standard-setting technical professional examination, is the first of the two qualifying examinations written by all prospective chartered accountants (CAs) in South Africa (SA). In 2020, the faculty's students claimed seven of the top ten positions in the January 2020 ITC examination written by 3 657 candidates. In addition, the University also achieved a 92% pass rate for all candidates, ensuring that it came out on top among the 16 South African universities accredited by SAICA.

- In the November 2020 ITC examination, the University again took first position in South Africa and achieved a remarkable 97% pass rate for the January and June examinations combined. 'UP's consistency and success in achieving these results are attributed to the innovative teaching methods, excellent lecturers walking the extra mile, as well as the students' talent and commitment,' said Professor Loots.

- Somona Kabemba, an MCom (Industrial and Organisational Psychology) student in the Department of Human Resource Management, earned the Emerging Psychologist of the Year Award, which is presented annually to a student or intern who is recognised for his or her academic excellence and has displayed extraordinary achievement as an emerging industrial and organisational psychologist in the preceding year.

- The Department of Financial Management received well-deserved recognition from the Chartered Institute for Management Accountants (CIMA). They were awarded the CIMA Prize-Winner Excellence Award, which recognises university partners with top-performing CIMA students in case study examinations, as well as the CIMA Global Excellence Award, which recognises university partners that achieved the highest pass rates for CIMA examinations.

- UP dominated the Ernst & Young 2020 global Young Tax Professional of the Year (YTPY) competition. With three students on the list, UP represented 60% of the 2020 top five of this competition. The competition is open to students from universities around the world and is aimed at identifying future tax leaders.

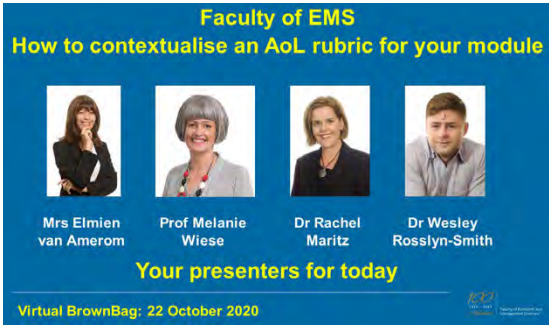
- An honours student in investment management at UP who completed economics in his final year of undergraduate studies was crowned the winner of the undergraduate category of the annual 2020 Nedbank and Old Mutual Budget Speech Competition.

After completing its first century on a high note, the Faculty of Economic and Management Sciences is committed and excited to maintain its position as a leader in teaching and learning.

Brown Bag Lunches Stepped up to Online

The faculty annually presents approximately six face-to-face teaching and learning brown bag lunches to facilitate the development and maintenance of lecturers' teaching proficiency on a continuous basis. In 2020, however, the lockdown caused by COVID-19 made the carefully planned face-to-face teaching development opportunities, bar the first workshop, seemingly impossible. However, the faculty stepped up to the plate and, with the assistance of the education consultant, Ms Elmien van Amerom, managed to transition professional learning to the online environment smoothly. Because of the sudden unavoidable switch to online teaching, the focus of the 2020 events was realigned with online teaching and its practical implementation.

The 2020 academic year kicked off with the face-to-face EMS Teaching and Learning Workshop on 23 January 2020, which was attended by more than 150 staff members. During this workshop, lecturers were exposed to the value of contextualisation of learning content and student engagement, the latter illustrated by using virtual clickers with Turning Point as well as H5P.



Brown bag lunches go virtual

In view of the switch to online teaching, and since one of the themes for the year was student engagement, the first two Blackboard Collaborate online sessions presented dealt with the effective use of Blackboard Collaborate as well as discussion boards. As Blackboard is the main teaching platform in the online environment, another training session focused on how to use performance data from Blackboard to inform teaching.

Owing to the rise of integrity issues in the online environment, four Blackboard Collaborate sessions on assessment were presented. One focused on the PDF online assessment method, widely used in the faculty, where students write their tests at home by hand, and then scan and PDF their answer scripts and upload them on clickUP. A second was on the online marking tool used to mark these PDF tests and a third was on how to do an online perusal of test papers. Lastly, a session was held to illustrate the use of the Bulk Upload plug-in on Blackboard to distribute large numbers of marked assessments to students seamlessly. Two other articles in this section explain this more fully.

In addition, two sessions were held pertaining to the faculty's project to attain accreditation by the prestigious international Association to Advance Collegiate Schools of Business (AACSB). They specifically focused on upskilling staff on the assurance of learning and the use of rubrics for assessment purposes.

The uptake of the online brown bag lunches during 2020 was excellent. The large audiences were attributed, on the one hand, to the fact that lecturers had a need to upskill themselves in the online teaching environment and, on the other hand, to the convenience of tapping into such training sessions and having recordings of all sessions available for recapping or asynchronous watching at a later stage. Around 400 staff members attended these sessions (some obviously attended several times) during the year, and at one session a total of 120 lecturers attended. This was the largest single attendance in the history of the faculty's brown bag teaching and learning lunches.

When a crisis looms, the faculty always comes up with a plan to make things work, and hence, it turned this potential obstacle into a learning opportunity with excellent results.

Teaching Excellence in Auditing: Zhoozh up your Class Participation with Zeetings

Both Ms Rolien Kunz and Ms Marina Kirstein are firm believers in making Auditing, which tends to be a very theoretical subject, as practical as possible. As experienced and innovative practitioners, grounded in inquiry-based pedagogy, they seek to involve students actively in the learning process.

In this regard, they successfully used Zeetings, a web-based platform that enables students to participate from their own electronic devices during lectures, to enhance students' learning experiences at both undergraduate and postgraduate levels. The objective with using Zeetings was to allow students to construct their own knowledge and skills through interaction with the Auditing subject matter in conjunction with their lecturers and fellow students. This co-construction is achieved using the power of feedback and self-regulated learning.

Students could be engaged in the learning process, turning one-way presentations into two-way conversations between the lecturers and the students, thereby increasing student participation and self-regulated learning. In addition, the two-way conversation was used to tailor classes for optimal teaching, focusing on the areas that students were struggling with as was evident from their answers to the questions posed on Zeetings. This strategy enabled meaningful and timeous feedback on the problem areas identified.

All students, irrespective of whether they were introverted or outgoing, had a voice, an equal opportunity and felt comfortable (or less exposed) when participating in class discussions, answering questions and asking questions. This enhanced their control over their own learning and efficiently helped the whole class to engage—including the more reserved students, as they could join anonymously. The main challenges faced were related to technology, primarily the Wi-Fi connection on campus. Fortunately, all lecture halls on campus were equipped with Wi-Fi towards the latter part of 2019, and this really assisted. As Zeetings is a web-based platform, it was quite easy to use in the live online lectures necessitated by COVID-19 without any major adaptations.

Teaching Excellence in Taxation: Changing the World, One Skill at a Time

The essential knowledge and professional skills sets required by accounting graduates have been the subject of many a debate. Accounting educators are challenged to develop graduates with more than mere technical expertise, while confronted with large class groups and with online teaching practices becoming more prevalent. Traditionally, the broader accountancy field is plagued by limited personal feedback on written work as it entails unmanageable time and effort on the part of the academic team. Student learning is thus often limited to rote learning for summative assessment, which stifles the development of much-needed skills (writing, communication, interpersonal, self-management, metacognitive awareness, evaluative and critical thinking, judgement and analytical skills, etc).

The Taxation 300 team rose to this challenge. Faced with nearly 700 students in a third-year module, Dr Teresa Pidduck, Ms Nadia Bauer and Ms Juanita Dos Santos-Venter implemented a cooperative learning initiative in the form of online self and peer assessment and feedback. The initiative made use of iPeer, an open-source rubric-based peer evaluation application, to provide real-time feedback to students in a manner that has never been attempted in the faculty before. It facilitated the awarding of marks for participation and quality of individual work, but, more importantly, allowed students to access anonymous, constructive feedback. As iPeer integrates with clickUP, students could mark and provide feedback online, anytime, anywhere, while saving paper and considerable marking and turnaround time for the academic team.

The design of the initiative enabled the development of several graduate skills, and feedback from peers was used as a feed-forward mechanism to improve the quality of answers for forthcoming assessments. Multi-disciplinary student groups across traditional enrolment disciplines (accounting sciences, financial sciences, law and economics) were used to expose students to multi-disciplinary views/feedback. A few challenges were experienced relating to unethical behaviour, but processes were designed to counter these in future. This is an online tool, and hence the COVID-19 restrictions of 2020 had little if any impact. The lecturing team urges other lecturers to rise to the challenge and develop those skills in their own students one skill at a time.

Teaching Excellence in Financial Management: An Interdisciplinary Project on Finance and Engineering

The Boerie-project was a very exciting interdisciplinary project in which the BComHons (Financial Management) students collaborated with final-year mechanical engineering students. The engineering students, under the guidance and supervision of Dr Lukas du Plessis, had to develop a prototype that would meet a need in the market. The prototype designed by the engineering students was an automated vending machine that produces fresh boerewors rolls—hence the name, Boerie-project.

Dr Du Plessis then invited the finance students (under the guidance of Ms Elize Kirsten) to perform the business and financial analysis part of the project. The overall aim was to simulate the collaboration between the R&D and finance departments of a company when developing a new product. The finance students, in teams, had to develop a framework for their respective finance topics and gather the required information through collaboration with the engineering students as well as other finance teams. They had to consider external factors such as industry players and potential customers. After gathering the relevant information, the finance students had to make

recommendations as well as present and justify their decisions to the other teams involved in the project.

During their honours year, finance students need to achieve a range of learning goals and objectives. In view of these requirements, an integrated and collaborative project is an excellent tool to assist students to achieve these goals. In short, the Boerie-project in 2019 taught students more about thinking critically and practically applying knowledge and skills in a business environment than many sit-down lectures could ever achieve. Students were also challenged in terms of their commercial literacy and interpersonal skills through the team-based approach. All these factors took the project to the next level by crossing the divide between faculties and disciplines.

As could be expected with any interdisciplinary project, it was challenging to balance the schedules of the students from two different faculties and to keep the students focused during such a lengthy project. However, packaging the project in smaller units with multiple deliverables enabled students to stay engaged and to use each such step to improve their skills.

A similar project ran successfully in 2020. Despite COVID-19 restrictions complicating matters, the availability of online meeting tools made it possible to transfer the project to an online environment seamlessly.

Normal Assessments in an Abnormal World

Paper-based assessments offer the opportunity to assess judgement and integrated application at an advanced level, which may not always be achievable with typical online-based assessment techniques. The move to an online environment presented a challenge to the assessment practices of the Postgraduate Diploma in Accounting Sciences, which requires lengthy and unstructured case studies in order to assess numerous competencies at this advanced level.

The 'normal assessment' practice was thus adapted to achieve assessment objectives. Andrew van der Burgh explains what was done. Case studies were retained, together with their unstructured answers, in the form of a written assessment. The case study was adapted to ensure visibility on a smart device and, together with the 'required' part of the case study, password protected. These documents were then released the day before the assessment to avoid typical technical issues associated with online assessment on the day of the assessment. A detailed instruction document and ethics declaration were also opened in advance. On the day of the assessment, the passwords for the documents were distributed via several channels (email, clickUP and WhatsApp). Students then proceeded to write the assessment on paper as usual, without concerns relating to issues arising in online-based assessments.

Andrew van der Burgh

Once the assessment had been completed, students scanned their answer scripts to PDF using their mobile phones and uploaded them to clickUP. A dedicated upload time was announced, and student uploads were monitored using tools in clickUP to ensure they occurred within that period. Late or incomplete submissions were penalised. Students were advised to communicate upload issues immediately via WhatsApp. Once uploaded, the PDF could be marked using various tools (among others, the online marking tool) and later returned to students.

Two of the major benefits of this method, which was also applied in a slightly revised format in traditional venue-based assessments during 2020, is immediate feedback to students and enhanced integrity during perusals as the marked script is stored in PDF format. The solution can be released before marking is complete, which allows students to self-reflect as they have a copy of their uploaded PDF script. In addition, online perusal is facilitated as the re-mark of a script is done on the original marked script retained by the lecturer.

The future is upon us and we have to adapt and make the best of the cards dealt to us—even if it is by making the abnormal normal.

Theuns Steyn

Tanya Hill

Beating Marking Challenges in the Online Environment

COVID-19 created many challenges (and opportunities) in teaching and learning, including how we could assess our students 'normally' in an 'abnormal' environment. Taxation (as was the case for several other modules) was faced with the predicament that the format of professional examinations related to this field currently requires students to write out the answers to complex calculation and theory questions physically when answering case-study-type questions. Lecturers had to somehow retain this way of answering assessments to prepare students for these professional examinations.

The e-learning-related solution to this conundrum was for students to scan in their handwritten answer scripts in PDF format using smartphones and other devices and to upload these to clickUP. The uploaded scripts were then marked using an on-screen marking tool. During 2020, lecturers successfully used this tool to mark test scripts from off-campus assessments that closely simulated the format of 'normal' assessments. For the on-campus, invigilated third-year examinations, the students used the same scanning and uploading technique just before they left the examination venues and lecturers then used the on-screen marking tool to assess the scripts.

The main benefits of the on-screen marking tool are that it can be used off-line by individual markers at different locations without distributing physical papers and that it allows markers to mark directly on the student's PDF script and to insert individualised comments on scripts to assist students in their learning process. It also automatically totals the student's mark and transfers the marks from all the individual scripts into an Excel document used to upload all the marks simultaneously to the Grade Centre in clickUP. The time saved by not having to add up and manually capture marks is substantial, and the tool also enhances security during electronic perusal of papers.

In addition, UP acquired the Advanced Assignment Tool under licence from Blackboard. This tool enabled lecturers to do a bulk download of all the scripts uploaded to clickUP by students, mark them off-line with the on-screen marking tool and then do a bulk upload back to clickUP so that each student could see their marked script on their profile.

The taxation lecturers regard this on-screen marking tool as the new norm in marking e-assessments. It saves valuable lecturer time, which in turn saves costs for the University, improves the ability to provide commentary on marked scripts, reduces the risk of COVID-19 infections (at this point in time) by eliminating the physical handling of students' scripts, and enables lecturers to mark from literally anywhere. It is clearly a versatile solution to many vexing issues in the online assessment arena.

Faculty of Education

Enrolments
8 420

Undergraduate module pass percentage
91.5%

Graduates
1 633

Acknowledging Excellence and Innovation in Challenging Times

'Perhaps 2020 will become the year we all realised what we are capable of when we do not have a choice,' says Professor Salomé Human Vogel, Deputy Dean: Teaching and Learning. For years, the Faculty of Education had steadily innovated in its teaching and learning practice in line with the hybrid learning policy of the University of Pretoria. However, never before had there been such a marked increase in the innovation of teaching and learning practices as in 2020, when the COVID-19 pandemic compelled staff in all higher education institutions in South Africa and globally to come to terms with the sudden shift to online teaching.

While the Faculty of Education traditionally presents staff with awards for teaching and learning innovation, the year 2020 saw the introduction of new awards to recognise the innovation, dedication, commitment and transformation of staff members to provide quality online teaching and learning. The Teaching Excellence Award for 2020 went to Dr Tanya Smit for her commitment and dedication to innovation in her personal and professional development. In addition, the faculty instituted a new Model Lecturer Award given to staff who received the highest student evaluations related to (i) the lecturer's preparedness, (ii) how well organised they were and (iii) their ability to engage students online. Only student evaluations completed with the new online EvaluationKIT were considered. The award recipients were Dr Suzanne Bester (Educational Psychology), Dr Coréne Coetzee (Science, Mathematics and Technology Education), and Professor Pieter du Toit (Humanities Education).

Another new award, the Busy Bee Award, was made to staff members who attained the highest student engagement in their online modules in the faculty as measured by average minutes and average interactions from students on clickUP—the data provided by Education Innovation. These awards went to Dr Philip Mirkin (Humanities Education), Professor Thiru Vandeyar (Science, Mathematics and Technology Education), Dr Ernest Mazibe (Science, Mathematics and Technology Education), Dr Climant Khoza (Science, Mathematics and Technology Education), Ms Andrea Pretorius (Science, Mathematics and Technology Education), Mr Jude Che (Educational Psychology), Dr Clinton van der Merwe (Humanities Education), Dr Lindiwe Mokotjo (Science, Mathematics and Technology Education), Dr Teresa Ogina (Education Management and Policy Studies), and Ms Joalise van Rensburg (Science, Mathematics and Technology Education).

Finally, two clickUP Dreamteam Awards were made to the teams of two core modules in the Faculty of Education, OPV 222 and OPV 312, for the modules with the highest correlation between students and lecturers in terms of engagement in the clickUP environment.

These awards will be become regular features of the Faculty of Education's annual recognition of excellence in teaching and learning.

Teaching Excellence Award winners in the Faculty of Education

Higher Certificate in Sport Science students during community engagement

Sport Sciences Education in the Digital Age

Most teaching and learning in the Higher Certificate in Sports Sciences (HCSS) took place online and students attended online lectures on Wednesdays, which created a flexible teaching and learning environment. However, the introduction of emergency remote learning raised several questions and posed challenges for the HCSS students and lecturers. Leepile Motlhaolwa (Humanities Education, where the higher certificate is offered) states that they were not only concerned about adapting curriculum delivery, but also about student academic performance, achieving learning outcomes, and being able to engage the students, all while ensuring that assessment, teaching and learning remained effective. The speed of the move to remote learning required lecturers to be responsive and design an innovative approach to teaching and learning, especially in respect of the sports practical module, JRC 150.

Students were unable to participate physically in sport; therefore, it was difficult for the majority of students to continue with sports practical work. Different remote teaching and learning modalities were explored to ensure that lecturers and other staff could reach their students, address assessment concerns, and provide students with opportunities to access academic content so they could participate effectively during scheduled online lectures.

To overcome some of the challenges in the sports practical modules and ensure that the student online learning experience would be enhanced, lecturers incorporated video creation in assessments. The videos were used in the assessment as a means of scaffolding student progress, in conjunction with other assessment methods. Groups of students created most of the videos collaboratively. The activities included students creating podcasts or videos focusing on exercises that could be used to improve technical skills in sport. The students video-recorded themselves applying training principles and uploaded the videos using Google Drive or YouTube channels, to receive feedback from peers. In other instances, students were given different topics to research, with some basic content and guidelines, then asked to create a video and share it with other students. The assessment was not based on the quality of the video but on the quality of the content. Furthermore, the guidelines and assessment criteria were discussed with the students, which made it easier for them to create the videos. Video creation as an assessment tool proved to be effective; however, the introduction of videos in the assessment had its challenges, and lecturers were required to be flexible in their approach and support students who struggled with using technology.

There were enormous assumptions by the HCSS staff about the 21st-century skills of students, such as that these students had pre-existing technological skills and would be comfortable with skills in digital media and video creation. Not all the students were comfortable with creating video, however. Some students had limited technology skills as well as limited resources and infrastructure to create and access the videos. Students who encountered problems creating videos needed academic support and clear guidance in terms of the assessment criteria and flexibility.

The tutor's role was critical in guiding and providing academic support to the students. Tutors not only acted as transmitters of knowledge but contributed enormously to the facilitation of learning by encouraging collaboration and social interaction among the students.

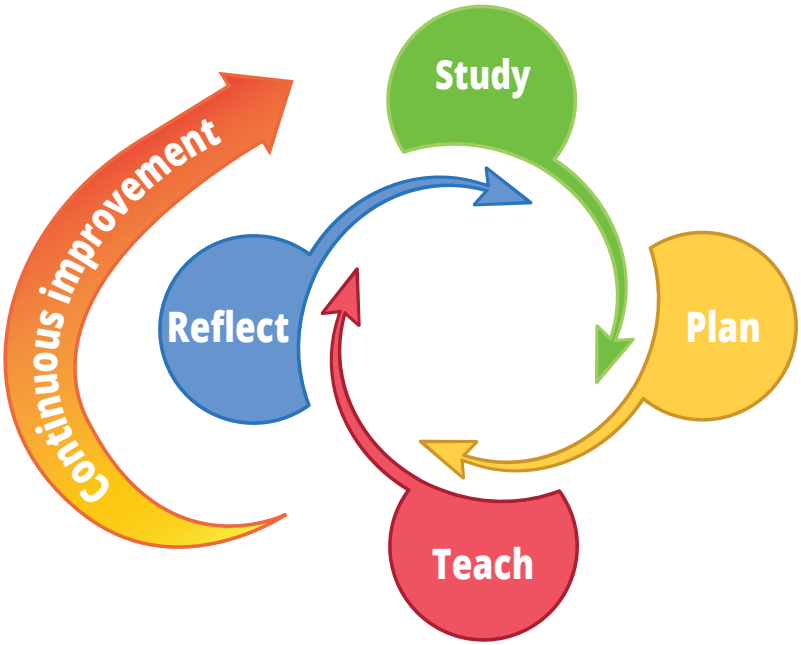
A good assessment choice will always enhance and support student learning; therefore, using videos as part of the assessment was one of the important tools in teaching and learning. The process required proper planning and was time-consuming, especially the grading. It was most important to align the learning outcomes, learning activities and assessment methods. Using video for assessment was not only fun and interactive but enabled students to gain increased competence and efficacy in using technology. On the other hand, it provided lecturers with the opportunity to monitor student progress.

WIL 2020 and the COVID-19 Pandemic

The undergraduate training of teachers in the Faculty of Education requires students to be placed in schools for an extended period of 14 weeks in their final year of study. It is discussed as WIL 2020 (Work-integrated Learning 2020). This placement is a requirement of the Minimum Requirements for Teacher Education and Qualification (MRTEQ). It is one of the most important components of teacher education since this is where students have the opportunity to put the theory of teaching into practice. Their placements provide students with the opportunity to observe, prepare learning experiences and teach under the guidance of mentor-teachers and mentor-lecturers. Students' professional development is guided, modelled, monitored and assessed and supports student teachers to become better equipped for practice.

Dr Joyce West (Early Childhood Education) pointed out that the COVID-19 pandemic in 2020 posed a unique crisis to universities' education faculties. As schools closed, teaching and learning shifted to emergency remote learning, and all forms of work-integrated learning were halted. Education faculties were left wondering: 'How do we prepare students for teaching and ensure authentic school-based professional development in an online environment with severely diminished opportunity for placement in schools?'

University of Pretoria Faculty of Education staff were quick to respond to the crisis with the adoption of an Online Lesson Study Initiative that would provide students with the opportunity to design, present, reflect and refine lessons collaboratively and to present them online to develop their competencies in online teaching. Lesson Study, which originated in Japan, has been adopted as a teaching methodology in the Faculty of Education.



Lesson Study improvement cycle

Dr David Sekao (Science, Mathematics and Technology Education) represents Africa in the International Council of the World Association of Lesson Studies. The objective of Lesson Study is to ensure that the best possible practices and pedagogies are explored by a group of teachers to teach a specific, often complex, topic through collaborative and iterative cycles of planning, teaching and reflection, until the lesson is perfected.

To ensure that the final-year education students would be able to complete their degrees, the WIL 2020 programme was amended to accommodate Lesson Study and the change submitted to the Department of Higher Education and Training for approval. After two exploratory meetings with staff involved in the mentoring of the WIL 2020 extended placements, it was decided to implement online Lesson Study in the PRO 453 clickUP module, and a dedicated team of staff knowledgeable about Lesson Study set about designing the module. This team, consisting of Professor Ronel Callaghan (head of Science, Mathematics and Technology Education) and her staff, Dr David Sekao, Professor Sonja van Putten and Mr Jody Joubert, worked tirelessly, not only to prepare the module, but also to mentor staff who would be using online Lesson Study in their mentoring of students for the first time. Mr Joubert's master's dissertation, supervised by Professor Callaghan, was an important basis for the design since it focused on the application of Lesson Study in an online environment with teachers who were geographically dispersed, as a way to plan lessons that incorporate educational technology.

In a very short time, the WIL Office staff created over 200 online groups of six students and one mentor-lecturer, with Ms Zandile Ngcetane leading the initiative to enrol students and their mentor-lecturers in their online groups according to their electives. Ms Genevieve Fourie-Teles and Ms Zandile Ngcetane held preparation and support meetings with academic staff to prepare mentor-lecturers for their task, with Professor Rinelle Evans designing the assessment rubrics and Dr Joyce West providing support with infographics, materials, video explainers and weekly webinars that explained the WIL Lesson Study process. All this preparation came together in the thoughtful design of the clickUP pages developed by Professor Callaghan and Mr Joubert.

Professor Callaghan, who worked tirelessly on the Online Lesson Study Initiative, explained that her biggest challenge was ensuring that all the different needs of all the departments, the WIL Office, the Department of Basic Education and the Lesson Study process were met and supported. The initiative also held various administrative challenges, such as students' submission issues, mentor-lecturers who struggled to follow the guidelines, and confusion with regard to group allocations, just to mention a few. When the Online Lesson Study Initiative is implemented for a second time, possibly in 2021, many of these issues will be revisited and improved upon.

When considering all the challenges encountered by the faculty workgroup, mentor-lecturers, and students, the online Lesson Study implementation was extraordinary and a great success. For example, the online nature itself challenged not only the students but also the mentor-lecturers with regard to technology integration within education. Technology integration also included online assignment submissions and grading (ie, online rubrics) to drive the process and the communities of inquiry that developed in the process. Technological boundaries were shifted in the process and questions regarding social inequalities were addressed. The Lesson Study initiative was unique in how it was conceptualised as part of WIL and professional development. The mentor-teachers' role was replaced by the collaboration of the members in the group as well as by the weekly involvement of the mentor-lecturers.

Most importantly, the Online Lesson Study Initiative of 2020 showed that the Faculty of Education at UP can accomplish great things even in unprecedented times, particularly when the whole faculty collaborates.

'Every Cloud Has a Silver Lining': Art Students' Resilience

In collaboration with the Molepo Theatre Projects, the School of Fine Arts of the Aristotle University of Thessaloniki (AUT), Greece, and UP Art Education, students planned to work together on an awareness project on albinism. The plan was all set: tickets were bought, the Greek authorities in South Africa provided the visas, and accommodation was organised with families who offered to host the UP art education students. Students were ready to fly to Greece on 25 March 2020. Dr Raita Steyn (Art Education) explains: 'Our students' artworks would be exhibited at the AUT while the props and costumes for the South African play, Mama, I Want the Black That You Are, would be created by the Greek students'.

Unfortunately, South Africa went into lockdown on 26 March 2020. All the students and other parties involved were devastated as travel plans had to be deferred until the reopening of all borders. Each student responded differently to the unexpected change: while some saw it as a challenge, for others it was a bitter, disheartening disappointment. For the lecturer, it was a very stressful, emotionally and physically exhausting process. She ran around to sort out issues with passports and visas and to fix the financial aspect of the cancellation without loss. Yet, once all had been settled, she was able to assess the situation from another point of view: 'Instead for a deadlock, I saw an open opportunity; instead of disappointment, I saw creativity', says Dr Steyn.

To keep the students' hopes up, in continuation of the collaboration, she decided to keep the project 'alive', though on a smaller scale. Still in the framework of the scholar exchange programme, a shared art project, Stencil as a Social Art Form, materialised through the web-based video conferencing tool, Zoom. Thus, instead of the planned encounter between a handful of students and their counterparts at the Macedonia Airport, now the whole class was to be involved through a Zoom meeting. The aim was twofold: first, to demonstrate to students the personal benefits of resilience and second, to display the pedagogical benefits of technology when used appropriately.

During the online meetings between the UP and Greek students, they showed their relevant artworks and discussed their ongoing projects. The local students assessed the Greek students' works and vice versa. The critical responses received from the Greek students were most encouraging and highly appreciated. All participants found the sessions an extremely rewarding learning experience and, for the Greek students, a unique opportunity as they were able, in their own words, 'to share our experiences and work with students from another culture and background and at the same time see and learn from what our counterparts in Pretoria were doing'.

The benefits of resilience were expressed by the positive responses received from both parties after the deferral of the original plan and their excitement and eagerness to meet one other online.

Below are some of the responses from the South African and Greek students, illustrating the positive impact of their encounter through Zoom:

Voices from South Africa

Fatimah Latha, University of Pretoria, South Africa

'Although 2020 is a year that has brought along very unexpected and tragic events affecting all over the world, we as art students did not allow ourselves to stop doing what we thoroughly enjoy. A wonderful opportunity was given to us by Dr Steyn, our visual art lecturer, to participate in a project with students from Greece. We were to make a stencil using whatever we came across at home, owing to the COVID-19 lockdown. We chose an animal as a hero to stand up against any destructive socio-political issue in the world. With this in mind, we had to create a design and create a stencil. My involvement with this project made me aware of many issues, beyond the present pandemic, that were brought to my attention by just doing a little bit of research on this project as well as by observing my fellow classmates working on their task.'

Caitlyn Crosby, University of Pretoria, South Africa:

'Collaborating with the students in Greece was such a great experience! For me personally, in preparing to teach English and Art, I have often wondered what careers I could encourage my future learners to pursue with a passion for these two subjects. Seeing the Greek students doing costume design within the dramatic arts field opened a new door of an exciting opportunity that I am growing so fond of. Being able to meet new people doing different things under what I thought was a small umbrella of art is so exciting! We really underestimate what art can mean for a child and how far they can go in life if they are passionate about it. After having seen and learnt so much from the Greek students, my outlook towards teaching my subject of Art has changed dramatically from sketching on a piece of paper to designing costumes that a learner could one day see on a Broadway stage. There is so much potential and possibility that my eyes have been opened to, and so much growth and expression a child can experience through art!'

Ariza Wilkins, University of Pretoria, South Africa:

'In a time where the whole world transitioned into isolation, it has never been truer that humanity is not standing alone and we can reach out to each other over continents, not only through a common language, but by connecting through art as a universal means of communication and a 'language' that speaks far deeper thoughts and feelings than words can sometimes express. In our life journey, approaching people from different countries through social media is something common. Yet, we were connected not only by the screens we talked through, but also by our love for art and the passion we have for creating art. Being able to work together with the Greek students on their project and witness the wonderful talent of each one of them, it has been a great privilege and source of inspiration.'

Fatimah Latha, University of Pretoria, South Africa

Dimitra Tsintsini, University of Thessaloniki, Greece

Voices from Greece

Alexia Vousvoura, University of Thessaloniki, Greece:

'Video conferencing with students from South Africa has been a great experience. This exchange of ideas on culture through art is a strong link and of great potential for artistic development and inspired creativity between people from different cultures and nations. For me personally, art is a bridge that can give great results. I look forward to the next collaboration!'

Thenia Spiridaki, University of Thessaloniki, Greece:

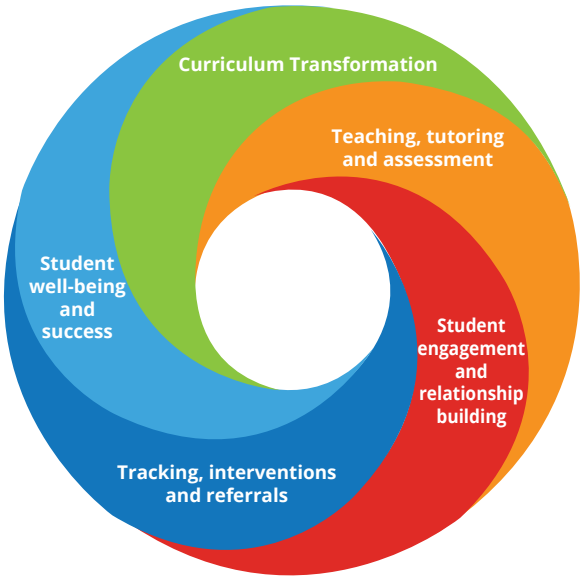
'I would like to say that I found the online exchange with the students from South Africa exciting, as for the first time in my life I had such an experience. Seeing the work that the students had done with the albinism project opened up new horizons in that art can be a means of communicating awareness of social issues. The second meeting where we were able to show our stencils and see the ones that the students from Pretoria had created reinforced my initial feeling of how, even though we had different experiences and cultural backgrounds, art can be a facilitator and a powerful means of communication. I look forward to further such online meetings and seeing how all our individual stencils will unite in a single artwork.'

Stergios Proios, Senior Lecturer, University of Thessaloniki, Greece:

'In our following meetings we examined the art works of the students from Pretoria and discussed the logistics of further collaboration on this project. Together with Dr Steyn, as instigators of the collaboration, and judging from the response we got from both sides (Pretoria and Thessaloniki), we believe that we have started a useful and meaningful dialogue, be it online for the time, owing to the extraordinary circumstances we are experiencing with the COVID-19 pandemic. Be that as it may, I would like to see a positive development already taking place now, or at least to explore the possibilities of such a development which in due time will lead to a regular exchange between our students.'

How Practising What You Preach Can Shift Student Success

The pandemic caused a reset in thinking about large-module hybrid teaching for coordinators and lecturers at the Faculty of Education. One such module was OPV 222, a second-year module with a cohort of 1 200 students. It is a faculty-wide module focusing on supportive learning environments.



OPV 222 Supportive learning environments: A multi-system intervention approach

Dr Michelle Finestone points out that the unprecedented challenges for OPV 222 were not only COVID-19-related. In addition to converting a mainly contact curriculum to a fully online one, lecturers were also presented with the challenge of improving on the module success rate of 88,7%, achieved in 2019. The sudden shift to fully online teaching in 2020, and the concomitant psychological and health impact of the pandemic, caused some unanticipated effects on planning the teaching and learning in a large module such as OPV 222. These challenges required a multi-system intervention approach to teaching in the OPV 222 curriculum. It was redesigned by planning online activities so that students could interact with one another online to build relationships while continuing to maintain social distance.

Curriculum transformation in the course involved the addition of more context-relevant case studies, discussions and a cell-film assignment. Assessment practices were adapted to ensure maximum participation and opportunities without compromising quality. Students were provided with the opportunity to promote (advance to the following year of study) without writing an examination if they achieved at least 60% in their continuous semester assessments, which included six assessment opportunities (two online tests, two discussion boards, an assignment and a case study). Students who received a semester mark of 40% or higher, but below 60%, or students who wanted to increase their final mark, could write a final examination. Although these increased assessment opportunities affected the workload of the lecturers and markers, they were necessary given the challenges experienced by the students. clickUP was used optimally to present classes online, provide narrated PowerPoints, and make recordings available to students who could only access the classes later.

Regular communication with students from the OPV 222 group of lecturers was instrumental in keeping students engaged. The training of the tutors, referrals to tutors and regular updates by tutors received particular attention.

Support provided to students was especially important because of the challenges they faced, such as limited Wi-Fi accessibility; family members sharing a computer; power outages, especially in rural areas; own and family illness; mental health issues; violence; and financial struggles. The most effective support strategies included regular meetings between the coordinator, lecturers and tutors to ensure students were academically on track. Students had personal contact with their coordinator, lecturers and tutors where specific challenges could be addressed and alternative arrangements made regarding, for example, submission dates of assessments. Students who indicated they were experiencing mental health issues were immediately referred to the Counselling Unit in the Department of Student Affairs.

All the while, staff and tutors were tracking students' academic performance. If a student did not submit an assessment on time, he or she received a personal email as reminder or a note to contact his or her lecturer. This process subsequently enhanced the students' participation and accountability.

Going fully online proved to be a very interactive way of engaging with OPV 222 students and bridging the isolation gap created by COVID-19. Online teaching created an environment where OPV 222 lecturers were willing to engage with and support the students to ensure that everything went well for them. Significant undergraduate student success was achieved by transforming the delivery of the curriculum and increasing lecturer support to students. The OPV 222 module success rate increased from 88,7% in 2019 to 96,7% in 2020. This achievement can be ascribed to a multi-system intervention approach that started with curriculum transformation. The openness of lecturers and students to the new approach was positive and the faculty has every intention of maintaining the effective elements of the approach into the future.

Faculty of Engineering, Built Environment and Information Technology

Enrolments
10 863

Undergraduate module pass percentage
83.2%

Graduates
2 451

Engineering 4.0 Launch

Professor Alta van der Merwe, Deputy Dean: Teaching and Learning

Dr Marié Hattingh, Department of Informatics

Facing Challenges through Innovative Thinking

Professor Alta van der Merwe, Deputy Dean: Teaching and Learning, asserts that the Faculty of Engineering, Built Environment and Information Technology is privileged to have staff members who think innovatively and experiment with new technologies and ways to incorporate better methods of teaching and learning. Its lecturers therefore rose to the challenges of the pandemic and lockdown by adopting innovative approaches of transferring knowledge and ensuring improved academic performance by developing novel teaching innovations.

Lecturers in the faculty responded to the lockdown by changing their method of transferring knowledge to a completely online system literally overnight. They were used to the hybrid approach to teaching and learning, characterised by different combinations of contact and online delivery. Modules had been redesigned over several years from an instructional design perspective to ensure integration and coherence between face-to-face and online teaching and learning.

The faculty's academics decided to embrace fully online teaching and assessment during the lockdown, with no physical student contact whatsoever. Most of the faculty's lecturers saw this disruption as an opportunity to introduce new ways of teaching and learning by following innovative approaches that will inform a future approach.

In a survey conducted among more than 10 000 students in the faculty, about 90% of the sample, who had participated in online activities during this period, indicated that they had been well prepared to use the online tools provided by the University during the lockdown. These data gave the faculty's management an indication that its students were coping in the online environment and had adapted successfully to the approach.

Some of the key challenges faced by students in rolling out the online learning programme included data availability and access to laptops. The University reacted to these issues by providing loan computers to students who did not have the financial means to buy their own and by providing data to students to enable them to connect to the online tools used by the faculty.

BA Bot for Continuous Learning

Dr Marié Hattingh, a senior lecturer in the Department of Informatics, spearheaded the development of a knowledge conversion platform in the form of a BA Bot in the second-year Informatics (INF 271) module to create an environment of continuous learning.

In the Information System Design (ISD) stream, in which she lectures second- and third-year students, she applied her teaching philosophy

of continuous learning to create an environment in which students not only acquired content knowledge, but also developed graduate attributes and a professional skills set. One of the initiatives she used to create a continuous learning environment was the BA Bot for ISD students to access content and feedback on ISD topics.

The idea of a knowledge conversion platform was born from Dr Hattingh's own need to note information that was not captured in any textbook, but was required to complete the third-year capstone project. This platform was initiated through the integration of a commercially available bot platform and Google Drive. It allowed her to improve the second-year curriculum by making authentic case studies available that not only suited the teaching strategy of the Department but were easily accessible and contextualised within the South African environment. The platform could also be continually updated as more relevant case studies became available.

The knowledge conversion model ensured that the BA Bot was populated with content to support scaffolded learning, starting at the data level, where key concepts and definitions were explained, working up to integrated examples. This platform enabled the teaching team to provide students with various learning activities that catered for the different types of learning required by the context so that students could learn at their own pace. It also had the functionality to provide feedback, which was essential for effective learning.

Assessment Management System

Undergraduate assessments in the field of engineering generally entail the systematic solution of problems of a mathematical nature. Such solutions often follow an algorithmic approach and are amenable to algorithmic evaluation. Over time, lecturers in the Department of Electrical, Electronic and Computer Engineering have been developing automated or semi-automated electronic grading systems. From 2017, these systems were consolidated into a comprehensive, web-based, mobile-friendly assessment management system, which could provide for several different assessment modalities. The assessment modalities can also be combined as required. By the end of 2019, this system had been used by over 4 500 students across several departments in the faculty.

A prime mover in this consolidation was Hans Grobler, a senior lecturer in the department, who developed an assessment management system that benefits students and lecturers alike.

The motivation for the development of this consolidated system was the ever-growing class sizes in the faculty's service modules, which have in excess of 300 students. For this reason, the first assessment modality, which was added in 2017, focused on the extraction and optical character recognition (OCR) of custom-designed forms. This allowed for the entirely automated assessment of tutorials, class tests, semester tests and examinations for large first- and second-year modules.

The implementation of this system has had a positive impact on both student learning and teaching practice by enabling lecturers to grade analytical, mathematics-based assessments in a far more in-depth manner than would have been possible if they had been graded by hand. The system also automates mark management at assessment and module level. The assessment results and details of the marking process are made available to students via a web interface, and a query mechanism enables lecturers to respond to students' queries and provide feedback.

Hans Grobler, Department of Electrical, Electronic and Computer Engineering

Concept Tests

Elizbé du Toit, a senior lecturer in the Department of Chemical Engineering, is passionate about teaching and strives to develop innovative methods to ensure that every student understands highly cognitive concepts.

Ms du Toit teaches Thermodynamics at second-year level and Reactor Design at fourth-year level. In these classes, she employs a polling software solution called TurningPoint to encourage student engagement. This app enables live polling, whereby students can respond to questions using their smart phones. Software such as this is designed to create engaging and interactive experiences between an audience and a presenter. Although polling is typically used to determine students' understanding of the subject matter after it has been taught, Ms du Toit uses this method to prepare her students for the coming material.

Her experience in teaching these subjects has afforded her the benefit of anticipating students' misconceptions and frequently made mistakes. It is this experience that has led her to understand that clever people do not appreciate being wrong and often try to hide the fact that they do not understand something. This attitude can hinder learning in a subject that deals with some of the core concepts upon which chemical engineering is built.

The classes start with a hypothesis presented to the students through the TurningPoint app. This is a well-planned, anonymous poll based on a frequently misunderstood concept in anticipation that most of the students will answer incorrectly. Although the poll results are anonymous, the students can see that it is normal to be wrong. This helps them relax about their own knowledge gaps and creates fertile ground for robust discussion.

This 'flipped' classroom approach, with concept tests, was initially used by Professor Eric Mazur, a physics professor at Harvard University. He is internationally recognised for the development of interactive teaching strategies. (See *Confessions of a Converted Teaching*, http://ericmazur.com/videos.php.) He worked directly with the University a few years ago, presenting an online workshop series to lecturers during the second semester of 2010 and visiting the University for a week in 2012. The approach also aligns well with the University's current teaching approaches that are based on establishing students' understanding prior to class to ensure that lecture time is spent in the most productive way possible.

Design Experiments

In an ever-changing world brought about by rapid developments in technology, static textbooks take far too long to be updated to incorporate the latest developments. In addition, the current cohort of students

Elizbé du Toit, Department of Chemical Engineering

comprises young people who think visually and learn through practical application. To promote active learning in this module, experiments become an essential teaching tool.

Professor Schalk Kok, Professor in the Department of Mechanical and Aeronautical Engineering, promotes the notion among his students that application far surpasses calculations in the real world of engineering. He teaches Structural Design to second-year students, which introduces them to the principles of design.

Professor Kok believes that the engineers of tomorrow need to be pushed further than ever before to come up with innovative solutions to industry problems. In practice, when a student is admitted to study engineering, it is assumed that he or she is already capable of performing complex calculations with the help of mathematical formulae. However, the important distinction relates to whether the student can use the answer to make decisions. In industry, graduate engineers will be required to think beyond the mathematics to design structures with integrity, which are fit for purpose.

Professor Schalk Kok, Department of Mechanical and Aeronautical Engineering

To prepare students for the challenges they will face in their careers, Professor Kok requires them to design and build their own experiments to master the textbook material, rather than giving them 'plug-and-play' activities. This gives students the space to make mistakes in an environment that is free from real-world consequences.

For their design experiments, students are given access to software within which the relevant formulae have already been programmed. This removes the focus from mathematical calculations and places it instead on the interpretation of results and implications for design. Such practice assesses students' knowledge, rather than their ability to substitute numerical values into formulae accurately.

Making Research Methodology Accessible to Undergraduates

Research Methodology is a compulsory subject to prepare students for their final-year research project. It approaches the contextualisation of a research problem, how to conduct a literature review, the theory behind research design and research methods, undertaking empirical research in line with an approved research proposal, collecting, analysing and interpreting data, and writing up research findings.

Kundani Makakavhule, a lecturer in the Department of Town and Regional Planning, has been acknowledged for her teaching approach that makes potentially difficult and unknown concepts more accessible to final-year undergraduate students taking this module.

As research methodology is something town and regional planning students have not yet encountered in their undergraduate curriculum, she found that she needed to make it more accessible to them. She therefore set out to 'simplify' the topic.

Kundani Makakavhule, Department of Town and Regional Planning

Her approach was to make students see research as an everyday task. She made them realise that they are involved in enquiry in everything they do and should regard data collection as the task of finding out more about things, rather than a step in the research process.

She asks her students to determine whether there are rules that can assist one in knowing something, or whether one can make one's own rules. Students' everyday lives are filled with knowledge, and she embraces an approach of co-learning and the co-production of knowledge between the students and the lecturer. She also focuses on local case studies in the context of the South African built environment to make the theory more tangible.

She encourages students to consider how they would go about finding information about (researching) an everyday topic. They often admit that they would follow a logical approach, based on their personal knowledge and experience. This opens the way for her to apply practical examples to the theory of research methodology.

Dr Wilna Bean, Department of Industrial and Systems Engineering

Presenting Operation Research to Solve Actual Problems

Dr Wilna Bean, a senior lecturer in the Department of Industrial and Systems Engineering, has received positive student feedback on her presentation of the third-year Operational Research and Industrial Logistics modules.

She approaches the presentation of Operational Research in the first semester from the perspective of developing advanced analytical models to solve actual problems. Through continuous assessment, students learn by doing. After she has explained a concept, students apply it by means of assignments and group projects. She attributes the students' success to placing a greater emphasis on practical exercises, determining why a problem is formulated in a particular manner, and how the information that has been obtained can be applied. Students are encouraged to identify an actual problem experienced by a company (preferably the company at which they are gaining their practical experience) and to work on the project and solve the problem during the semester.

In the case of Industrial Logistics in the second semester, the focus is on supply chain management. As this is a very dynamic subject, Dr Bean needs to stay abreast of the latest developments in the field. Her approach in this module is to look at the logistics involved in the entire supply chain from an engineering perspective. This makes the University's graduates who have completed the Industrial Logistics module in industrial engineering particularly attractive to prospective employers.

Over the years that Dr Bean has been presenting this module, she has made adaptations based on her observations of students' performance and experience. Through interactive exercises, case studies and group discussions, the theory becomes more easily embedded in students' minds.

Industry visits and guest lectures are important to give students an idea of what the work of an industrial engineer entails by bringing the industry to the classroom. Dr Bean also makes use of videos to explain how theory works in practice, as well as interactive quizzes to encourage friendly competition between students.

Emotional Well-being Impacts on Student Performance

Professor Marlene Holmner is an Associate Professor in the Department of Information Science. She lectures in the first-year Information Science module, which is compulsory for students from all three of the Department's degree programmes—Information Science, Publishing and Multimedia.

Professor Marlene Holmner, Department of Information Science

During her years of teaching this module, Professor Holmner has learnt that the emotional well-being of first-year students can have a significant impact on their academic performance.

To support first-year students in the process of adjusting to university life and the academic demands that come with it, Professor Holmner has spearheaded the establishment of departmental learning communities. These learning communities are facilitated using the group chat feature on WhatsApp. Some 30 to 35 students are placed on a group chat, along with a module tutor. The instant interactive platform has proven itself to be ideal for communicating with students in a more personal manner.

The purpose of these learning communities is multi-faceted, addressing both the students' academic and emotional needs. Students are, for example, reminded of due dates for assignments, while they also receive messages of encouragement from the module tutors. Features such as emojis streamline the process of determining students' emotional state, as each student can quickly indicate feelings such as anxiety or stress, or indicate that they are coping. The platform also opens lines of communication by encouraging question-and-answer exchanges.

To ensure no misuse of the platform, supervision becomes an essential component. In this regard, Professor Holmner oversees the group chats, which also allows her to anticipate any problem areas in the module. During exceptionally stressful times, the learning communities enable the department's support structures to intervene with relevant measures to promote the emotional welfare of the students. The learning communities have been embraced by both staff and students in the department.

Supporting First-year Studies by Distributing Workload

Dr Ruric Vogel, a senior lecturer in the Additional Chemistry modules for first- and second-year engineering students in the Engineering Augmented Degree Programme (ENGAGE), focuses on problem-solving by breaking difficult content into manageable chunks. With PhDs in both organic chemistry and psychology, he is perfectly suited to guide first-year students who need help coping with the academic demands of university study.

ENGAGE is a five-year undergraduate programme that provides a carefully structured curriculum to help students adjust to university life and cope with the challenges related to engineering studies. In this programme, the volume of work is gradually increased, while the support provided is correspondingly decreased over a period of three years. The students work in parallel with the mainstream students, but in smaller groups, with classes seldom exceeding 50 students. They attend a theory lecture once a week, followed by practice classes three times a week, with a greater emphasis on application, where the essence is isolated and problem areas identified.

This programme is mainly chosen by students who face challenges related to an inadequate background knowledge in mathematics and physical science, academic literacy and information technology, and who may not have effective study skills to cope with the mainstream four-year programme. The students who follow this programme benefit from Dr Vogel's unique approach to teaching and are able to join the mainstream programme from their second academic year of study.

Dr Ruric Vogel, Engineering Augmented Degree Programme

Central to his approach to supporting students to cope with the academic demands of tertiary study is his commitment to his students. He enjoys working with people and cares for his students. As such, he has a good rapport with them, which helps give them the confidence they need to approach him with problems they might experience with the subject content. He also believes that it is important to get to know the individual sitting in front of him in the classroom. Dr Vogel finds that students are better able to grasp the theoretical nature of chemistry if he presents it to them in the form of an analogue or a metaphor.

Finally, he emphasises the importance of recognising one's identity. As a lecturer, he is of the opinion that teaching must be part of one's essence: it must be who you are. In a similar vein, he encourages his students to determine whether they identify with being an engineer, which is an important element in ensuring their academic success.

Virtual reality enhances mining education

The Application of VR Technology in Mining Engineering

The Department of Mining Engineering's Virtual Reality Centre was established in 2015 with the financial assistance of Kumba Iron Ore. The purpose of this world-class addition to the University's facilities was to enhance education, training and research in operational risk across industries through an innovative approach to information optimisation and visualisation by incorporating immersive technology such as augmented reality (AR) and virtual reality (VR).

With the establishment of the AEL Intelligent Blasting Chair for Innovative Rock-breaking Technology in 2018, the Virtual Reality Centre could be used to simulate three-dimensional blasting techniques and to visualise new research. This achievement established the University as a centre of excellence for emerging rock-breaking technologies. The AEL Intelligent Blasting Chair is a joint initiative between the Department of Mining Engineering and the Department of Electrical, Electronic and Computer Engineering, which exploits the Department of Mining Engineering's AR and VR expertise and facilities to strengthen AEL's market and technology leadership position. In the process, it supports ground-breaking projects to resolve pressing issues in the mining industry.

Under the leadership of Professor William Spiteri, an extraordinary professor in the Department of Mining Engineering, three projects have been launched in the Chair, which have achieved significant milestones over the past two years.

The Development of a Flyrock Measurement Technique

The flyrock project in the Department of Mining Engineering entails the development of a quantitative measuring technique to capture physically and study the in-flight motion of flyrock to improve predictive models and to understand the causative factors better. It was originally initiated through a request from Glencore coal mine to assist with the evaluation of its mathematical model and its empirical standards for predicting the safety radii to protect equipment and personnel from flyrock.

The insight obtained from this project highlighted the dearth of work done in the past, internationally, to understand this phenomenon. The present study started with a more extensive literature review, which showed that, despite the numerous and theoretical predictive models developed over the past ten years, no definitive measuring technique exists to test these theories properly. The next step was to identify the most appropriate technology to measure the flight path of flyrock in the aftermath of a blast.

Photogrammetry was selected as the technique most likely to succeed. Normally, photogrammetry involves taking several photographs of a static object from different angles using a single camera. The photographic data are then manipulated to yield a 3D image of the object. In the case of flyrock monitoring, the process had to be reversed to a technique where several cameras were used to capture a moving object. The data could then be manipulated to depict the trajectory of the flyrock in 3D. This technique was developed and perfected by employing a clay pigeon sling in a controlled and demarcated space. Finally, the multiple camera system was deployed in a quarry where photographs of flyrock were successfully captured by all the cameras.

The study is currently concentrating on converting the quarry photographic data into a point cloud form from which the trajectory of the flyrock can be calculated. Subsequent work will focus on extracting positional and physical data of the flyrock fragments from the photographic data using existing photogrammetric and stereo mapping software. Once the positional data can be obtained within an acceptable margin of error (±1 cm), the research can shift towards the analysis and interpretation of the data based on ballistic principles.

The goal is to determine two coordinates for the flyrock: its final landing position and the point of origin. This output will enable mines to build historic databases of the operation's flyrock. It will also enable researchers to investigate quantitatively the effect of various blasting parameters on the risk of flyrock and will enable the visualisation of the data for training and educational purposes.

The Application of VR Technology to Enhance Learning

The VR training project in the Department of Mining Engineering identified the need to digitise the current training that is being conducted for the Intellishot® electronic detonator product, using a flipped classroom approach. This approach entailed the development of three elements. The first element comprised a theory component using six e-learning courses, which the trainees worked through in their own time and at their own pace, with additional support provided where necessary. These courses were followed by face-to-face training to fill knowledge gaps. The trainees were then introduced to the VR programme and worked through a facilitated perfect blast (with voice-overs, as well as facilitator explanations). This took the trainees into a trouble-shooting phase. Once the trainees had worked through the perfect blast, they went through a second round without facilitation, where two errors were randomly displayed. The trainees then applied what they had learnt about solving errors. Finally, they completed a VR assessment, in which they were required to conduct a live blast.

The Conversion of Visual Data into 3D Images

This conversion project in the Department of Electrical, Electronic and Computer Engineering is developing techniques to convert visual data, such as video footage obtained by a drone flying over an open-pit mine, into three-dimensional (3D) VR and AR images. The knowledge base for converting point cloud data into 3D VR and AR images had not been available within the Department of Electrical, Electronic and Computer Engineering prior to the commencement of this project.

The initial phase of the project has been completed and various demonstrations have been held to show the levels achieved progressively. To improve the quality of VR visualisation, an approach using mixed-medium and high-resolution meshes has been developed. The approach entails the use of a medium-resolution mesh for general navigation, switching to a high-resolution mesh when approaching objects or features in the environment.

The integration of large 3D models extracted from point clouds and other data into the Unity and Unreal engines must overcome the memory and object count limitations of the engines. Although the initial partitioning (segmentation) results were disappointing, an improved segmentation algorithm has been developed that is optimised for the generation of segments used for VR visualisation.

JCP Students Contribute to the Fight against COVID-19

Almost 2 000 students in the faculty annually participate in community engagement projects for credit towards their degrees, working in communities that need assistance in solving problems that fall within the scope of the knowledge and skills of the faculty's students. The vehicle is the Community-based Project (JCP) module. After lockdown, students enrolled in the module were enthusiastic in offering their time and effort in response to the pandemic.

Face Masks

JCP students contribute to production of PPE

Several groups of students in the faculty made face masks and delivered them to non-profit organisations and surrounding schools in their neighbourhoods. These students shared how grateful they were for the opportunity to participate in community service during the pandemic. Many of the students had to learn new skills but came to the realisation that this pandemic affects the poor and disadvantaged the most.

Computer Repairs

Electrical, electronic and computer engineering students continued to make a positive contribution to society during the pandemic by continuing with a normal community engagement activity: fixing computers for use in communities. Five students gave a helping hand to a non-profit organisation in Mabopane by fixing its computer laboratory so that it could be used by the community. Some of the computers were repaired, while upgraded software packages for educational purposes were installed to improve the skills of the community.

Engineering student applies his skills to help solve a community's problem

Online Teaching and Learning

Students collaborated with local schools to find innovative ways to ensure that teaching and learning continued online while the country was in lockdown to contain the spread of COVID-19. The projects in which the students were involved required new and unique levels of interaction with the community. Support included developing PowerPoint presentations, updating mark sheets, making online forms available and creating databases. Students also assisted in finding solutions for teachers to allow learners to upload assignments.

A Solution for Homeless Shelters

Two students in the Department of Electrical, Electronic and Computer Engineering developed a mobile app for members of the Tshwane Homelessness Forum to access assistance during the pandemic. This app enables shelters to communicate more quickly with warehouses about their needs. The students reflected that this was their way of taking their existing skill set and giving back to the community.

Career Mentorship Ensures that Graduates Are Ready for Work

The value of a degree from the University of Pretoria was demonstrated in 2019 when a survey revealed that 93% of its alumni were employed within six months of graduation. It is necessary to train students not only to find employment after they graduate, but also to excel at those careers and become leaders in their industries.

Career mentorship was identified as an important element of developing work-ready graduates. In light of this, the University launched a Career Mentorship pilot programme in 2019 as part of its Ready for Work initiative. This programme aimed to involve alumni in the mentoring of final-year students in the School of Engineering. Its goal was to develop work-related skills and confidence relevant to the engineering profession and to build effective career networks.

The students in the School of Engineering who were selected to participate in the Career Mentorship pilot programme, conducted from April to July 2019, had to indicate why they would like to be part of the programme. The names of potential mentors were provided by the University's Alumni Office, as well as the engineering consultancy, Aurecon. Eventually, 33 students and 24 mentors participated in the programme. The mentors, who varied from early-career engineers to senior professionals, had the option of choosing the mentees they thought they would be able to mentor.

The mentorship process included two meetings, either online or face-to-face, and one job-shadowing session. The mentors and mentees could decide on the topics they wished to discuss. The following themes were typically addressed:

- How to cope with the new work environment
- The process of becoming a registered engineer
- The work experience of the mentor
- How to develop management skills
- How to apply for a job

As both mentors and mentees had demanding schedules, which often made it logistically challenging to meet, they communicated via email or telephone calls. The main reflection of the mentors on the programmes was that they enjoyed watching someone grow personally. It gave them satisfaction and the opportunity to give back to the University.

Following the success of the pilot programme, it was extended to the remainder of the Faculty of Engineering, Built Environment and Information Technology, as well as the Faculty of Theology, in 2020. There were 90 students and 78 mentors involved in the programme.

In a survey upon completion of the programme, the mentees reflected positively on the programme and felt that the mentors had made a difference in their lives. The students indicated that they especially enjoyed the job-shadowing day.

'It is by standing on the shoulders of giants that we are able to see further. It is critical to the development of the key skills required for our country's development. The only way to empower people is by empowering them to empower themselves, and that can be done by learning from those that have gone before us.' Paul Ssali

'I could easily see that my mentor was an expert in her field and knew what she was talking about. The one thing that she told me that stood out was that you, as a person, are solely responsible for your happiness in the workplace (that is under normal circumstances, excluding situations such as terrible bosses or ridiculous working environments). If you are unhappy, you have the power to change that.' Altus Bisschoff

Career mentorship: Altus Bisschoff

Career mentorship: Paul SSali

Faculty of Health Sciences

Enrolments
7 732

Undergraduate module pass percentage
97.4%

Graduates
1 580

The Faculty of Health Sciences remained active in all teaching and learning fields in 2020 despite the impact of the pandemic. Teaching development and recognition remained a focus, as did student development and success. Technology innovation took place against the background of the University's teaching model, but digital transformation also happened in the organisational space such as participation in the virtual #Choose UP Day for provisionally accepted students. Finally, partnerships enabled progress in student learning as well as in other ways.

Enhancing Academics as University Teachers

The Department of Higher Education and Training's A National Framework for Enhancing Academics as University Teachers focuses on a number of activities, including enabling continuous professional development (CPD) for university teachers. The Faculty of Health Sciences stresses the improvement of teaching in the field through providing opportunities for faculty-based learning through brown bag lunches, webinars, online courses, conference attendance, participation in research into teaching and learning, and membership of associations focused on health sciences education. Despite the extraordinary year, the faculty maintained its support for these activities.

Faculty Workshops: From Brown Bag Lunches to Online Webinars and Beyond

During 2020, the faculty workshops were initially facilitated in a face-to-face environment but had to transition rapidly to an online environment. Topics covered aspects such as single best answers, assessment, alternative teaching, facilitation and assessment approaches, facilitation and meeting platforms. Podcasting was another theme as well as the priority course on teaching portfolios. Nine faculty-based workshops were facilitated (face-to-face or online), excluding the priority courses available to all lecturers and managed by the Department for Education Innovation. The education consultant created a condensed version of third-party apps and platforms that could be used by lecturers.

To support lecturers in their transition to fully online teaching and content creation, an interactive 30-minute, self-paced e-learning resource was created by the education consultant to guide lecturers through the process of creating micro-learning and converting it to videos.

The brown bag lunch series was converted to eight online webinars where lecturers shared their success and frustrations related to their rapid transition to emergency remote facilitation, teaching and assessment. They created a community of practice where

colleagues shared and learnt from one another. Webinars were recorded and made available as on-demand viewings. Topics such as student engagement, teaching approaches (memes and podcasting), interactive assessment, online content development, and the highs and lows of online teaching and assessment were covered.

The education consultant and the Deputy Dean: Teaching and Learning negotiated an institutional Coursera license for use by all lecturers, professional or support staff, and students. This initiative allowed self-paced learning and upskilling.

As academic dishonesty and plagiarism were a huge concern, the education consultant worked closely with Professor Steenkamp (the Deputy-Dean: Teaching and Learning), Professor Adam (School of Medicine) and the library to create content for a plagiarism awareness campaign in the faculty. Professor Adam created an information video that was shared among the various departments and with other faculties. The library created a presentation that was linked to a small game to reinforce the concepts alluded to in the presentation and content.

Professor Adam created content for student support, two animated videos: 'Being a 21st-century student' (for all students in the faculty) and 'Steps for 21st-century facilitators of learning' (for lecturers in the School of Medicine).

Promoting Knowledge Production and Sharing about University Teaching

Another element of A National Framework for Enhancing Academics as University Teachers is promoting knowledge production and knowledge sharing about university teaching and learning. Many of the activities linked to this goal are supported by funding from the University Capacity Development Grant.

Scholarship of Teaching and Learning

The Department for Education Innovation invited proposals for funding for research into teaching and learning based on set criteria and rigorous evaluation. Such research leads to conference papers and publications. Faculty members/teams were successful in receiving funding for four projects to enable lecturers to produce research that relates to their teaching and assessment practices.

Conference Attendance

Every year, the Department for Education Innovation hosts the Flexible Future Conference. Academic staff have the opportunity to showcase their teaching and assessment-related initiatives, combined with a research output. Not only did the faculty members showcase the diversity in their teaching approaches in ten podium presentations and participation in two panel discussions, but they also highlighted the creativity and initiatives implemented to ensure that students received optimal support during these unprecedented times.

Members of the faculty also presented at the *CHE 2020 Quality Promotion Conference* in Pretoria in February:

Lubbe, JC, Wolfaart, L, & Turner, A. The student voice in quality improvement: A cacophony or symphony of experiences?

Teaching and Learning Awards

A National Framework for Enhancing Academics as University Teachers includes: 'Ensure that academics are recognised and rewarded for the work that they do as university teachers'. For many years, the faculty has issued teaching awards and uses the promotion system to recognise and reward teaching excellence.

Criteria were determined for 2020 and a call sent for nominations. The winners were:

- Emerging Category – Professor Melantha Coetzee
- Established (Basic Sciences) Category – Professor Werner Cordier
- Established (Clinical) Category – Professor Sandra Spijkerman
- Exceptional Category – Professor Sumaiya Adam
- Community Engagement – Professor Jannie Hugo

Health Professions Educationalists Contribute to Successful Sub-Saharan Africa-FAIMER Regional Institute Fellowship Programme

The Sub-Saharan Africa-FAIMER Regional Institute (SAFRI) Fellowship Programme is a two-year programme for educationalists who have the potential to improve health professions

SAFRI faculty and fellows from the University of Pretoria: From top left to top right: Professor Dianne Manning (faculty), Dr Mia-Michaela Beetge (2019 fellow), Dr Liz Wolvaardt (faculty), Professor Corné Postma (faculty), Dr Karien Mostert (faculty), Ms Eileen du Plooy (2019 fellow). From bottom left to bottom right: Professor Rhena Delport (faculty), Dr Werner Cordier (faculty), Dr Marietjie van Rooyen (faculty), Ms Clarisa van der Merwe (2020 fellow).

Dr Nkhensani Mogale makes the Mail & Guardian's 200 Young South Africans list

Celebrating Mail & Guardian's 200 Young South Africans

education at their institutions. The fellowship equips candidates with educational, scholarship and leadership skills and fosters an active professional network among educators. The SAFRI fellowship takes place over two years and consists of three on-site sessions as well as distance learning. During the programme, each fellow develops an education intervention project that they present at their second on-site session as well as at the annual conference of the South African Association for Health Educationalists (SAAHE). In the photo, SAFRI faculty and fellows from the University of Pretoria are pictured at the recent on-site session in Cape Town after the project presentations of 2019 fellows Dr Mia-Michaela Beetga (Dentistry) and Ms Eileen Du Plooy (Occupational Therapy). Of the 54 fellows and faculty from across sub-Saharan Africa who participated, ten were from the University of Pretoria, a clear indication of the faculty's commitment to development and capacity building in health education.

Mail & Guardian's 200 Young South Africans List

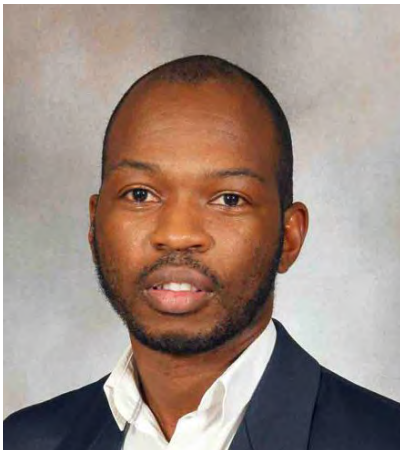
Anatomy lecturer and researcher, Dr Nkhensani Mogale, was included in the Education category of the *Mail & Guardian*'s 200 Young South Africans list. Dr Mogale joined the University of Pretoria in 2017 when she was appointed as a lecturer in the Clinical Anatomy section of the Department of Anatomy. She was the first black women to be appointed in that role. Dr Mogale is proud of the achievement and recognition. She also feels a great sense of responsibility in terms of her work ethic. She stated: 'Individuals that have previously made it to the list have gone on to do amazing things, which inspires me to be my own idea of amazing'. Dr Mogale was inspired to specialise in the field of anatomy in the second year of studying her undergraduate degree. For the first time, she saw and experienced the complexities and intricacies of the human body. Her passion was ignited from that moment, and it is a flame that has kept on burning. She notes: 'The human body is complex and, when we feel that we have figured it out, we realise that there is still so much more to explore.'

Driven by her passion for anatomy, Dr Mogale wanted to be one of the best in the field and make a positive impact in the lives of students and young professionals. Her advice to young students who have an interest in anatomy is to approach this field of science with a willingness to be taught and corrected continually. She adds: 'Anatomy is a humbling subject; we are all constantly learning and reinforcing our knowledge'.

One of her career highlights was completing her PhD within the three-year set time while juggling motherhood. Her second daughter was born while she was completing her manuscript and helping her elder daughter with her homework.

In addition to her recent achievements, Dr Mogale is the honorary secretary of the Anatomical Society of Southern Africa, where she was again the first black woman to occupy the position. She has also been accepted to Michigan State University for a postdoctoral fellowship under the African Alliance Partnership (AAP) and hopes to start in January 2021.

Priyanka Dhanraj



Tusani Tembe

Virtual Merit Awards Ceremony

On 27 October, the faculty hosted its first combined virtual Merit Awards ceremony to celebrate the achievements of undergraduate students in the academic year. Merit awards were given to students who received an academic average of 75% and higher. The faculty honoured students from three of its four schools: Medicine, Health Care Sciences and Dentistry. Over 50 students received special prizes for their outstanding academic achievements, and the school chairs acknowledged 240 students who had an average of 80% and higher.

The Dean of the faculty, Professor Tiaan de Jager, reminded viewers that the COVID-19 pandemic had affected the academic format but in retrospect had fast-tracked much-needed change and transformation. 'The fact that the average module pass rate in the faculty increased from about 94% to 97% during these challenging times serves as proof to me that students will also be able to lead us into the "new normal" future and take health care in SA to the next level', he stated during his welcoming address.

The declaration ceremonies for the School of Medicine, School of Dentistry and School of Health Care Sciences were also held online.

Students Recognised in the ABSA Gradstar 2020 Top 100

GradStar recognises the Top 100 students across the country, based on leadership qualities and readiness for the workplace. Mr Tusani Tembe and Ms Priyanka Dhanraj were recognised for making it to the top 100 Absa-Gradstar 2020 for academic excellence and leadership. They made it among 8,000 entries of top student from across the country. They are among the 19 UP students who made it to the list from the Faculty of Health Sciences (Medicine), representing undergraduate and postgraduate students, respectively.

CPR Competition Brings Teaching and Learning to Life

The Undergraduate and Surgical Skills Centre hosted the 2020 CPR Competition, sponsored by ZOLL Medical Corporation, on 26 February 2020. Undergraduate students from different disciplines entered teams. The Deputy Dean: Teaching and Learning, Professor Vanessa Steenkamp, pointed out: 'This is an exciting example of how technology can transform teaching and learning practice. It provides us with a tool to entrench the skills required for the place of work. Additionally, this allows for students from different disciplines to engage, resembling a real-life scenario'.

The competition, which was coordinated by the Head of Undergraduate and Surgical Skills Laboratories, Professor Ronel Herselman, provided students with an opportunity to practise assimilation-based cases with a stronger emphasis on reality. They gained real-life experience of something that they would

Deputy Dean: Teaching and Learning, Professor Vanessa Steenkamp (third from right), Head of Undergraduate and Surgical Skills Laboratories Professor Ronel Herselman (far right) and ZOLL Medical Corporation representatives

Teams participating in the competition

Radiography students interacting in an escape room experience

traditionally watch on video or practise in a laboratory. Students had to deal with additional pressures, such as time management. After each scenario, student teams received feedback and were given another opportunity to apply what they had learnt in the scenario.

Students embraced the opportunity to put what they had learnt in the lecture rooms into practice. Third-year MBChB student Nicole Nesser stated: 'It was a great experience for me. I was doing CPR but didn't know that I could improve my skill. The instructor, real-life scenario and machines helped me realise what I can improve to become a better doctor in future'.

Radiography Students Learn the Code of Conduct in the Escape Room

The Department of Radiography hosted an interactive workshop at the Health Sciences Skills Laboratory to enhance students' understanding and implementation of the code of conduct for radiography, using the escape room concept. Groups comprised ten students each and had a combination of first-, second- and third-year students. Acting Head of Department Dr Mable Kekana noted that the escape room had been identified by Ms Malherbe as a way to encourage students to practise teamwork, time management and problem-solving, as well as the ability to focus under pressure. Dr Kekana added: 'The interactive workshop on the code of conduct using the escape room method was used enhance inter-professional and intrapersonal relations among radiography students in the different year groups, as well as their relations with staff in the academic and clinical training facilities. Looking at the word clouds that were generated after the workshop, I can say that the objectives have been met'.

School of Dentistry Collaborates with Central University of Technology (CUT)

In 2020, the School of Dentistry faced a conundrum because of the pandemic. The requirement of social distancing resulted in a situation where the group sizes in the skills laboratory had to be reduced. This severely affected access to the laboratory, and it required innovation to overcome the challenge. One of the most innovative solutions came from the Department of Prosthodontics, which collaborated with the Central University of Technology (CUT) to 3D-print novel phantom heads and typodonts that could be mounted on regular dental chairs in the clinical environment. The phantom heads have a flexible design, allowing them to be used with many different typodonts. The main role-players in this innovation were Dr Alwyn Fortuin from the School of Dentistry, University of Pretoria, and Professor Cules van den Heever, who has strong ties with CUT.

To solve the problem of reduced contact time and the ability to provide practical demonstrations to relatively large groups, Dr Fortuin, with the help of Creative Studios in Education Innovation, created a set of videos and other teaching materials for students to prepare before they arrived for pre-clinical training. These videos were available chairside on a computer screen or on a mobile device to support students' learning while they worked, showing them how to prepare a tooth for different types of crowns or bridges.

The focus of these methods is to foster student-centred, self-regulated learning in an 'authentic' context, requiring the application of theoretical knowledge. Relevant task-level feedback was also provided using the workplace-based assessment system, housed on the chairside GoodX Dental Studio software deployed in the school. This competency-based approach allowed for grading the students' ability to work independently, with the aim of ensuring that students are ready and able to work safely on real patients.

Acquisition of LOOP Curriculum Mapping Software

Curriculum renewal is always necessary to keep up with evolutions in medical knowledge, innovations in medical education, and recommendations of the Health Professions Council of South Africa (HPCSA). While the curriculum was originally based on a community-orientated, problem-orientated, student-centred, integrated philosophy 20 years ago, this ethos had been partially lost over the years as student numbers increased without the concomitant increase in teaching staff, and Block Chairs (module co-ordinators) changed.

A first step in curriculum transformation is an analysis of the current curriculum. It was decided that curriculum mapping software could assist in this process, in this instance the LOOP product. It had several advantages, including being able to:

- document outcomes at programme and module level and compare them with the guidelines of the HPCSA or other health sciences statutory bodies or Bloom's taxonomy;
- upload lesson plans;
- identify the 'hidden curriculum', gaps and duplication;
- ensure constructive alignment between outcomes, activities and assessment;
- analyse assessment according to Miller's pyramid to ensure student competency; and
- ensure 21st-century graduate attributes.

It also has administrative functions to allocate and manage groups, venues and timetables. The completed document is downloadable in PDF or Excel formats. The software could be a valuable tool for accreditation visits, as well as general accessibility and continuity. Thus, with the acquisition of the LOOP software in 2020, curriculum mapping took place and a living draft of the MBChB curriculum was produced.

Elective Hosted Virtually

Traditionally, there has always been a one-month elective opportunity for third-year medical students at this medical school. In pre-pandemic years, students used this elective to explore a future area of specialisation and/or gain practical experience at a nearby health facility. The completion mark for the elective was based on the submission of a student-generated report about their experience. This practice was, however, severely challenged in the pandemic with movement restrictions and concerns about transmission. Therefore, a decision was made to explore the possibility of a virtual, self-paced online elective for approximately 300 medical students. Of note here is that not only were these students adjusting to online classes, but they had never been exposed to online learning in the form of massive open online courses (MOOCs) as part of their formal qualification.

An online bouquet of free MOOCs and other sponsored courses centred around the 'neglected roles' of the competency framework of the HPCSA was proposed. The roles of 'leader and manager', 'health advocate' and 'professional' were identified.

The virtual elective consisted of one compulsory course related to leadership and management, two courses related to any of the identified roles, any two medical or non-medical courses of the student's choice from the LinkedIn Learning platform and, finally, the assessment. Courses were selected from reputable online global health sites as well as a private higher education institution, the Foundation for Professional Development, which allowed students to access their sponsored courses for a limited period. The University also granted the students access to the licensed LinkedIn Learning package, usually reserved for staff members. Weekly reports were provided at the online School of Medicine meeting.

Communication was key and explicit instructions were placed on clickUP. Frequent announcements were sent, and the class representative was used as a go-between for two-way communication, distributing information and reporting on challenges experienced by the students. In addition, one online MOOC service provider and a dedicated staff member were available to assist with login and other technical issues. A description

Occupational therapy students on community engagement

Health Sciences' students on community engagement

of the available courses and instructions on how to access them were provided on clickUP. The content of courses ranged from digital and financial literacy to gender-based violence and COVID-19 management.

For reporting and assessment purposes, an interactive Microsoft Excel template was created for the students to download. It consisted of a sunburst graphic that, when populated with details of the courses completed, would update in real time and provide a colourful illustration of the HPCSA roles and competencies that the students addressed in the elective, as well as alerting them to gaps that they would need to fill in the remaining years of their medical studies. A second tab required them to complete a three-column KLA sheet for each of the courses: 'I KNEW this already', 'This was new to me—I LEARNT something useful from the course' and 'This was useful—this is how I am going to APPLY it to my life/medical journey'. To pass the elective, students had to upload a zip folder of the certificates of completion that they obtained for the chosen courses and the Excel template.

The course incorporated gamification: prizes of vouchers from an online medical shop, as well as virtual or face-to-face opportunities with medical doctors fulfilling the roles of a leader and manager, health advocate and professional, were awarded to randomly selected students.

The School of Medicine's Education Office coordinated the online student feedback on the elective. Questions about the attainment of competencies, course selection and the likelihood of a virtual elective for future student cohorts were added. Students' feedback was mostly positive and appreciative in nature.

There were lessons learnt and practices initiated that could be continued in future. First, the access of undergraduate students to the LinkedIn Learning platform was piloted in this elective. The continued use of the platform, with the possibilities of directing students to specific topic pathways and being able to have data analytics about their course completion and other topic selections, for example, is worth exploring further. Second, the sunburst Excel template could be the mechanism for all health sciences' students to reflect while also graphically seeing their progress in the HPCSA roles and associated competencies that they are expected to attain upon graduation. Third, the collaborative practices that were formed will be strengthened to use in the learning experience of students.

The undergraduate students thoroughly enjoyed the elective and there is a definite benefit to including an online component in future electives. The activity not only underscored the importance of these often-forgotten HPCSA roles, but also ensured well-rounded, qualified health professionals.

Community Engagement

Community engagement remains a key priority for the faculty as evidenced by the variety of initiatives in 2020, both before and after the pandemic struck.

CrazySocks4Docs Day 2020

Students and staff at the faculty wore funky mismatched socks on 29 May 2020 to show that they cared for doctors on the frontline. The annual CrazySocks4Docs Day (CS4D) aimed to raise awareness about mental health among health care workers who have been at the forefront of fighting the pandemic. Medical professionals are stretched under normal circumstances, and now they have to focus their time, energy and expertise on overcoming COVID-19. Statistics show that medical professionals suffer the most when it comes to mental health issues, and the pandemic

Health Sciences' students masking up for community engagement

Health Sciences' students on community engagement

has taken a severe toll. This is why society was encouraged to show that they #Care4OurCarers on this year's CS4D Day.

The Ithemba Foundation organises CS4D. Ithemba means 'hope' in isiXhosa—the message being that if depression is the illness of despair, we need to hang on to hope. In the words of Ithemba Director Dr Marita van Schalkwyk: 'As health care workers, we must undertake to serve the sick and needy, but we must also look out for one another, help one another, inspire one another and seek help when we cannot keep up the demanding pace. There is always hope (ithemba)'.

Occupational Therapy Students Raise Handwashing Awareness in Mamelodi

In March, ten fourth-year occupational therapy students presented a health awareness workshop at Matimba, Mamelodi, a centre for orphaned and vulnerable children. The health awareness workshop aimed to educate the children about preventing the spread of common diseases such as colds and flu by teaching them the importance of washing their hands. This served as a timely prevention programme in the community as the world would soon focus on limiting the spread of the COVID-19 virus through hand washing, among other things.

The workshop started by splitting the group into two, one group with glitter on their hands. The glitter symbolised germs. The children were then encouraged to run around and play a game of touchers and give each other high fives. After this, they noticed how the glitter had spread to the entire group. The intention was to demonstrate how quickly and easily germs spread. The children were then taught how to wash their hands properly. First, it was demonstrated to them that just washing their hands with water is not enough to remove the 'glitter germs' and thus they always have to use soap. Secondly, it was demonstrated that you need to wash your hands on top, below, and between your fingers. All the children were then given the opportunity to wash their hands using the demonstrated method.

The workshop was concluded by teaching the children a handwashing song. They were able to sing and dance along, bringing in fun and enjoyment.

Handwashing awareness in Mamelodi

UP Initiative Helps Create Food Security for Vulnerable Communities

The pandemic has left many without a source of income, which has had devastating effects on household food security. This reality prompted the Community Oriented Primary Care (COPC) Research Unit to start an initiative to raise funds in September to source nutritional food sustainably and educate informal settlement residents on supporting their families through gardening.

The COPC Research Unit launched the Imvelo Urban Food Systems at Living Word Pretoria East Congregation. Partners included the University departments of Family Medicine, Public Health, Dietetics, Architecture, Engineering, Veterinary Science and Agriculture as well as the African Research Universities Alliance (ARUA) Centre of Excellence in Food Security at UP's Faculty of Natural and Agricultural Sciences, the Agricultural Research Council (ARC), Tebelo NPO, Living Word, and SA Cares. Imvelo Urban Farms aim to serve as safe havens and a source of food security for vulnerable communities. The lifestyle these farms support is inclusive, provides training, promotes holistic living, and empowers people while creating a sustainable food production and retail model that can be replicated all over South Africa. The ARC has developed a farming plan to be implemented for food production for revenue, and training on how residents can grow their own food.

The incubator project at Cemetery View informal settlement in Woodland is based at the Living Word Church, where the food system has been implemented on the church grounds next to the village. SA Cares will sponsor a borehole and will implement a programme called Power of the Father, as well as a cluster-care worker programme to develop and support the residents of Cemetery View. Each household at Cemetery View received a home-garden starter kit that contained a net pot, compost, and fertiliser with seedlings and seeds. Residents from the community also received training on how to plant and take care of their crops.

Dr Ellenore Meyer, Primary Research Investigator and Project Lead at the COPC Research Unit, commented: 'The Imvelo Urban Food System at Cemetery View is an exciting interdisciplinary initiative which aims to bring academic, business and community stakeholders together'.

'The involvement of ARUA Centre of Excellence will help alleviate food insecurity by assisting in the implementation of urban agriculture towards a sustainable food system. The community will be trained on the benefits of consuming a diverse diet and encouraged to participate in establishing community and home food gardens', said Professor Hettie Schönfeldt, Co-Director at ARUA Centre of Excellence and Co-Research Investigator.

A resident of Cemetery View, Litsoanelo Lephaso, said she was very thankful to the Living Word Church pastors and all the partners involved in putting this initiative together. 'We are now empowered through education to create a better life for ourselves, and we have also received resources to create our gardens', she said.

In collaboration with LIFT, a community development non-profit organisation, the Department of Family Medicine opened a clinic four years ago on the Moreleta Church grounds for residents of both Cemetery View and Woodlane Village. Now, a training centre and kitchen built on the grounds to ensure the food system, with its training centre and kitchen linked to the agricultural developments, will address the last two components of the University's triad focus on health, supporting education and nutrition in informal settlements.

Residents at Cemetery View received training on how to plant and take care of their crops

Students prepare for training at Cemetery View

Community engagement site for BNur III students

BNur III students doing community engagement

Nursing Community Engagement

Nursing students were very active in various communities in 2020. They learn invaluable health care skills through such engagement and benefit the communities in which they work.

BNur III

BNur III students conducted community assessment projects in September for five days. They had to choose a community within five kilometres of the University. Students had to identify and prioritise the health needs of the community, identify available community health resources, describe determinants of health in the community, and give recommendations to relevant stakeholders.

On the first day, students were able to familiarise themselves with the community using their five senses and interviews with the community members to confirm what they observed, using a designed questionnaire. They took pictures with the permission of community stakeholders. Data collected included demographic information, environmental attributes, physical environment, psychological environment, social environment, socio-economic environment, health system and nutrition. Students also identified community strengths (available resources) and weaknesses (identified problems). On the second day, groups analysed the data and wrote a report. The report was presented to the lecturer using Blackboard Collaborate. Reports were then revised using the feedback. The last activity was for the students to report to the community stakeholders with a presentation. It is always important to give feedback to communities. Key stakeholders received a summary of the report. The students will finalise the implementation part of the project in their fourth year of study.

BNur IV

BNur IV (Nursing) students were involved in a breast awareness campaign, which was carried out at Daspoort Clinic on 26 and 27 August, in collaboration with other departments in the School of Health Care Sciences. Students prepared an educational pamphlet that provided information on breastfeeding and management of minor breast conditions. Students from the Department of Dietetics prepared a pamphlet informing mothers on how to express breast milk and the proper storage thereof so that their babies can receive breast milk after they return to work. Speech therapy students covered the topic of stimulating communication when the mother is breastfeeding her child. Physiotherapy students designed a pamphlet and created a video on how to position newborns safely and effectively while breastfeeding. Occupational therapy

students covered advantages of breastfeeding, well-being of mother and baby in relation to their occupation, and babies with problems versus those without problems.

BNur IV students carried out six further projects. They had visited the communities the previous year. The students applied the policies and regulations relevant to the problems identified during planning and implementation. The target groups varied: the University's own undergraduate students and the problems they face; school children and the elderly in Queenswood, Waverley, Villieria and Danville; and Pretoria School for Cerebral Palsied Learners. Problems and solutions related to psychosocial issues, developmental issues, practical needs, healthy living, safety, health, nutrition and well-being.

Community Engagement IHL 120

The IHL 120 students of the School of Healthcare Sciences and the Department of Speech Pathology and Audiology are usually taken to four communities where they are introduced to community healthcare and collaboration in inter-professional teamwork. Because of the pandemic, the students had a virtual tour through informal settlements instead. Video clips were made available on clickUP, which they were expected to watch. They focused on their observations during the virtual tour rather than listening to the narrations. They then submitted an individual, reflective report and a group assignment. Although the experience was not the same as that of the actual tours, the reflections and group assignments indicated that the students were still able to achieve the learning outcomes.

Donations/Sponsors

The faculty was determined to complete the academic year to ensure that South Africa received a cohort of new doctors, dentists and allied healthcare workers to help maintain the health of society. Furthermore, the faculty was involved in over 30 projects to help curb the pandemic despite staff and students in the faculty being at risk. Some of the projects included clinical trials and testing, community health, counselling, capacity support and volunteering. 'This pandemic has opened up collaborative opportunities between the University and various organisations', said Professor Tiaan de Jager, Dean the faculty.

Life Changers Fund

The faculty established the Life Changers Fund to help support students who were in need to pay for accommodation, tuition and food and to procure PPE.

Life Changers Fund

Aspen Pharmacare Donates Laptops to Health Sciences Students

Chairperson of the School of Medicine Professor Robin Green reached out to Aspen Pharmacare after the University launched its Solidarity Fund, with the intention of acquiring Internet-enabled devices for students in dire need. To qualify for the tablets, they had to be registered students who attended classes regularly and were unable to purchase the devices for themselves. The faculty received a donation of 600 tablet devices valued at R2,4 million from Aspen Pharmacare. The donation ensured that designated students had access to their course material, enabling them to complete the 2020 academic year. Professor Green asserted: 'The COVID-19 crisis has created a world of hurt and sadness, but it has also allowed the kindness and generosity of the world to shine. We appreciate the generous donation that Aspen has made to the faculty to assist students with distance learning and to enable them to continue with the 2020 academic year'.

OUTsurance Donates 20 000 Items of COVID-19 Personal Protective Equipment

The faculty received a donation of personal protective equipment from OUTsurance, as part of their Staff Helping SA OUT initiative, to help keep healthcare workers safe during the pandemic: 20 000 surgical masks, 20 000 FFP2 masks and sanitisers. The poor availability of PPE was a challenge for the academic and medical staff at the Department of Infectious Diseases. The PPE donation was used to support the Faculty of Health Sciences, Tshwane District Hospital, and Steve Biko Academic Hospital. Professor Anton Stoltz, Head of the Department of Infectious Diseases, said: 'This donation is important because without PPE our doctors cannot work. It is at the heart of everything, and without personal protective equipment doctors can't be on the frontline, therefore, meaning that we can't save lives'. Mr Suren Naidoo, Chief People Officer at OUTsurance, stated: 'As OUTsurance, we wanted to partner with an institution in our area, given the challenges of poor availability of personal protective equipment'.

Aspen donation of tablets to students for online learning

Outsurance Donation

Physiotherapy students encouraged to make a difference

Sanlam Encourages Physiotherapy Students to Make a Difference

The Department of Physiotherapy received a donation of masks and sanitisers from Sanlam on 18 September to ensure that students stay safe while pursuing their studies, as they have to conduct their practical sessions in an authentic clinical setting to develop their clinical competence. Third-year physiotherapy student Nthabiseng Mashilo noted: 'As students at the University of Pretoria we are very grateful for Sanlam's generosity. The donation which will help us complete our academic year, considering that 2020 has been a tough year'.

Sanlam donation to Physiotherapy

Faculty of Humanities

Enrolments
5 719

Undergraduate module pass percentage
90.6%

Graduates
1 661

Voices of Students and Lecturers

Ms Lulu Sadiki and Professor Francois Steyn, respectively lecturer and associated professor in criminology, participated in an international study on the well-being of students amid the pandemic. They extended the research to gather information from five colleagues and 322 students who were registered for undergraduate criminology modules on teaching and learning during a pandemic. The students completed the online survey during level 3 of the national lockdown in June 2020.

The criminology lecturers shared the following views:

- The limited time to prepare for online teaching and learning was stressful. Fortunately, delays in announcing when the academic calendar would continue afforded them more time to get ready.
- Thinking outside the box yielded results. Online assessment provides opportunities. The training that the University offered resulted in their realising that multiple-choice questions do not need to be elementary, but can assess higher-order thinking skills.
- No student should be left behind. The lecturers kept contact with students, followed up on problematic issues such as connectivity during tests and examinations, and checked on students who did not regularly access clickUP. In addition, they used social media to communicate with students, WhatsApp being the most frequently used application.
- Online access does not necessarily mean learning. A few students did not actively embrace online learning. Some failed to attend non-credit-bearing online activities and not all engaged meaningfully with learning instructions, which resulted in an additional administrative burden for lecturers.
- The lecturers re-imagined and re-thought student capabilities and appear to have shifted from assessing memory to assessing application. They noted that students had more time to work on assignments, whether individual or group assignments, and resolved that this assessment strategy would be used in future.
- Educational inequalities became apparent. Marginalised students experienced challenges with data, equipment and

Internet connectivity, while load shedding further hampered effective online teaching and learning. Online teaching and learning could create barriers between lecturers and students from poor backgrounds.

- Mental health was an issue. In the absence of contact classes, some lecturers had difficulty in gauging whether students understood the work and what was expected of them. Lecturers and students experienced feelings of isolation and struggled to adapt to working from home. Lecturers referred students to relevant support services.
- Despite challenges, the lecturers emphasised the importance of institutional support, from acquiring knowledge and skills with online teaching and learning, to the availability of expert guidance during online lecturing and assessment. Lecturers easily accessed training material, and support was available even outside normal working hours.

The survey among students showed a drastic shift in living arrangements with 78% of students living with their parents during lockdown compared to 28% before the pandemic ($p<0,001$). Students were also significantly more worried ($p<0,001$) about financial resources during lockdown (78%) than before the pandemic (52%). The survey results showed that students were stressed by the change in mode, overwhelmed by the increased workload and worried about completing the academic year. However, they felt communication was good, measures were taken to protect students, and the quality of teaching and learning did not decline (only 20% of respondents thought quality had declined).

Although some of the staff and student voices expressed concern, it should be borne in mind that the pandemic demanded an unprecedented, rapid response to prevent the spread of the virus on campus. It was indeed a time of changed pedagogy, but much was achieved during 2020 to continue the academic project effectively and successfully. In fact, the pass rates for undergraduate criminology modules did not decrease as was initially feared. It is evident that lecturers went the extra mile to assist students with the sudden transition to fully online teaching and learning. They took the notion of 'no student will be left behind' to heart by constantly reaching out to those who could easily have fallen through the cracks. Although online learning has further unveiled educational inequalities, it has also provided an opportunity for integrated hybrid teaching methods. Although the 2020 academic year conjures up words such as 'challenging' and 'difficult', the experiences of lecturers and feedback from students suggest lessons of hope, perseverance and resilience, and the importance of having all hands-on deck.

Ms Lulu Sadiki and Professor Francois Steyn

On the Importance of Tea Breaks—Fostering an Online Community among Postgraduate Students

Engaging in postgraduate studies is daunting for most people. Dr Kerstin Tonsing points out that students enrolled in the master's programme in augmentative and alternative communication (MA AAC) are busy professionals, juggling family and work responsibilities. They often return to studies after a period of educational or clinical practice in the field of severe disability. While they bring rich work and life experiences and insights to the learning task, they often express uncertainties about their ability to cope with the time commitments and the academic demands

Dr Kerstin Tonsing

of a postgraduate degree after being 'away' from studies for a while. Meeting other students and being able to share their concerns, hopes and aspirations helps to allay fears and confirms that they are not alone in their situation. Under normal circumstances, much of the course is conducted online, but four week-long, on-site visits to the University throughout the programme (with lectures, discussion groups, workshops and, of course, tea breaks) have always played a significant role in establishing and maintaining a sense of community.

With COVID-19, all face-to-face methods were suspended. As programme co-ordinator, Dr Tonsing had to find a way to help students gain and maintain a sense of community in a completely online environment. In previous years, the department's seminar room had been the place where students would meet during most of the contact week, having their tea breaks, sharing lunch, working on their studies or chatting. Dr Tonsing therefore decided to replace this room with a virtual one—the Blackboard course room. She wanted students to come to think of their virtual course room as a social space, not just an academic one. She started the virtual contact week by facilitating social interaction among students, encouraging them to share their personal journeys through the lockdown. Students were asked to share their videos and invite the class into their study space, an exercise that helped all of them visualise each other's individual circumstances and appreciate how innovative students had to be at times to make sure they had good reception and no disturbances, with some sitting outdoors or in their cars.

Time was also scheduled in the course room for synchronous verbal discussions, student presentations and practical workshops. Breakaway sessions were created during which students paired up to engage in an activity. As if walking around in the classroom from pair to pair, the lecturer entered these breakaway rooms to see how students were progressing. A colleague with a severe disability who uses AAC gave a guest presentation online using her AAC device, and students were able to engage with her live. Since this colleague uses spelling to compose her messages, the chat tool came in very handy. Everyone shared tea breaks in the virtual room too, engaging in small talk and chat.

A very successful strategy for second-year master's students was a series of scheduled virtual writing meetings, patterned after the Shut Up & Write method invented by Rennie Saunders.[11] Three to four hours every day of the contact week were dedicated to this activity. Students all entered the virtual course room, and one student was assigned as timekeeper. Students spent 50 minutes working on parts of their dissertation, took a ten-minute break during which they could engage in social chat with the other students, followed by another 50-minute writing session. Many students commented on the usefulness of the strategy to progress in their writing and felt more connected and more accountable in the process.

Although students still commented that they missed the 'real' tea breaks, they were generally positively surprised about what was possible online, especially when synchronous engagement via audio and video was included. Dr Tonsing reports that she personally realised again how important it is to recognise people as integrated, whole beings and to connect with them in ways that communicate 'I see you'—even if this has to happen during a virtual tea break.

Tele-Intervention Framework for Early Communication Intervention Service Delivery

Dr Maria du Toit

Dr Renata Eccles

Dr Renata Eccles and Dr Maria du Toit of the Department of Speech-Language Pathology and Audiology were familiar with remote service provision before the start of the lockdown. Globally, tele-practice has become a successful platform to offer healthcare, including speech-language therapy services.[12] Tele-intervention specifically refers to treating communication- and swallowing-related conditions via a tele-practice approach.[13,14] Speech-language

11 Shut Up & Write is owned and operated by Writing Partners, a 501(c)(3) non-profit organisation. https://shutupwrite.com.

12 Krikheli, L, Carey, LB, McDonald, CE, & Malik, N. 2017. Telehealth use in speech-language pathology: An exploratory scoping review (prepared for Cabrini Health, Victoria). Melbourne: La Trobe University, participatory Field Placement Report, pp 1–52. http://hdl.handle.net/1959.9/563260

13 American Speech-Language-Hearing Association. 2020. COVID-19: Tracking of state laws and regulations for telepractice and licensure policy. https://www.asha.org/uploadedFiles/State-Telepractice-Policy-COVID-Tracking.pd

14 Cason, J, Behl, D, & Ringwalt, S. 2012. Overview of states' use of telehealth for the delivery of early intervention (IDEA part C) services. International Journal of Telerehabilitation, 4(2): 39–46. https://doi.org/10.5195/IJT.2012.6105.

therapists (SLTs) are obligated by their professional code of conduct to provide remote services that are equivalent to the quality of services provided face-to-face.[15,16] According to the scope of practice, SLTs are expected to use tele-practice to provide services when direct therapy is not accessible. In South Africa, guidelines were issued early in 2020 by the HPCSA and the South African Speech-Language and Hearing Association (SASLHA) on delivering services under a state of disaster such as the COVID-19 pandemic,[17] but guidelines specific to tele-practice are still limited.

Tele-intervention has been used for over three decades but, owing to advancing technology and a higher demand for SLT services, its implementation has increased in the last ten years.[18] Even though tele-intervention has been available for a long time, delivering services via tele-practice was not introduced during undergraduate training. SLTs reported that, upon exiting their study programme, final-year students' knowledge regarding tele-health was limited.[19] Tertiary institutions are among the key constituents that should be involved in tele-health education, training and development.

It was not until the COVID-19 pandemic that tele-intervention became the paramount means of undergraduate training for service delivery. Owing to restrictions resulting from COVID-19, and the suspension of face-to-face academic training, the American Speech-Language-Hearing Association (ASHA) released guidelines on the provision of tele-intervention by undergraduate students, and the supervision thereof. Tele-intervention is one of the few opportunities available to SLTs for continued service delivery during pandemics.

The Department of Speech-Language Pathology and Audiology (SLPA) has various clinics offering SLT and audiology services to members of the public. The SLPA programmes are considered professional programmes, as students are required to deliver services to the public as part of their training. As set out by the HPCSA, students need to accumulate a minimum of 400 hands-on clinical hours during the course of their undergraduate studies, in order to be deemed competent SLTs or audiologists.

SLPA lecturers faced the dual ethical responsibilities of providing continuous, high-quality services to vulnerable populations and ensuring students met the necessary requirements to obtain their degrees. Therefore, a framework was developed to deliver early communication intervention (ECI) services at a distance when face-to-face services were not possible.

All students received orientation sessions prior to the commencement of tele-intervention via narrated PowerPoints, video demonstrations and trial tele-sessions. Clients then received tele-intervention information letters that included a technology survey and were required to complete a consent form.

ECI tele-intervention sessions were conducted with caregivers, and the child was not typically involved. Each week students evaluated the functional application to daily life of the concepts covered in the previous session using reflection questions. This provided students with an opportunity to revise the previous strategy if implementation was unsuccessful. Otherwise, a new strategy was introduced and its relevance to the families' identified goals outlined. Descriptions of the strategy were provided, and the family was able to discuss the information with the students and lecturers. The caregiver also practised the strategy in the session to refine its use and maximise the potential for success. Students, together with the caregiver, then jointly planned how to apply the strategy meaningfully in the family's specific daily routines. This allowed the students to troubleshoot potential challenges with the family. The lecturer was able to provide guidance throughout the session when required, but formal feedback and marks were received.

In the next step, families were encouraged to send feedback regarding the implementation of the strategy prior to the next session. This was done via formal reports from home, emails, WhatsApp messages or voice notes, shared Google documents or videos of the implementation. In the third step, students used this information to plan accordingly. Finally, the day before the next session, students sent the family a brief outline and possible demonstration of the concepts to be covered. The cycle then started again.

The students and caregivers involved in the intervention were asked to reflect on the tele-framework. Their expectations prior to the intervention and the challenges experienced were similar for both students and caregivers. These included difficulty tracking the child's progress and managing demanding schedules, and issues with connectivity. Nonetheless, tele-ECI was a positive experience for everyone involved. It encouraged caregivers and students to apply comprehensively a parent-led approach, which is recognised as an evidence-based approach for early language facilitation. All caregivers reported improvement in their children's communication abilities. Through this framework, the lecturers reached their goal of equipping students with the skills to provide continuous, high-quality ECI services under challenging circumstances.

15 American Speech-Language-Hearing Association. 2016. Scope of practice in speech-language pathology [Scope of Practice]. Available from www.asha.org/policy/. doi:10.1044/policy.SP2016-00343

16 Health Professions Council of South Africa. 2020. Speech, language and hearing professional board guidance on the application of regulations, rules and guidelines during COVID-19 pandemic.

17 South African Speech-Language and Hearing Association. 2020. Memorandum: What to do in level 4 under the state of disaster May 2020 (version 2). https://docs.mymembership.co.za/docmanager/editor/34/UserFiles/guideline_document.pdf

18 Hill, AJ, & Miller, LE. 2012. A survey of the clinical use of telehealth in speech-language pathology across Australia. Journal of Clinical Practice in Speech-Language Pathology, 14(3): 110–117.

19 Govender, SM, & Mars, M. 2018. The perspectives of South African academics within the disciplines of health sciences regarding telehealth and its potential inclusion in student training. African Journal of Health Professions Education, 10(1): 38–43. https://doi.org/10.7196/AJHPE.2018.v10i1.957

Who Moved My Cheese?

Dr Nontembeko Bila, a senior lecturer in social work, was stunned by the abrupt shift to remote learning. It caused anxiety and fear of the unknown. Dr Bila says: 'Over the past ten years, I have been confident and found my footing in the traditional face-to-face teaching modality. Now, my teaching philosophy was challenged, as I believe in interactive and collaborative teaching. I believe in human interaction. I was wondering how I was going to impact the lives of students if I did not have that human interaction and connection with them physically. This reminded me of a book that I had read by Spencer Johnson, titled Who Moved My Cheese?: "The quicker you let go of old cheese, the sooner you find new cheese." Oh, my word, these were my thoughts in the new normal, as it is being termed'.

Dr Bila remained informed through the constant flow of communication from the University management and the head of department. When 20 April 2020 came, lecturers were expected to present online classes. Dr Bila was glad that the modules for which she was responsible for were offered in the second semester as she had time to plan for the online classes. She says: 'I had to think out of the box'.

As to the form of preparation, what came to mind was student-centredness. She felt that she could not just switch to remote learning without getting the voices of students. Working from home was a hurdle: how was she to get the voices of students? She thought quickly that the class representative could be the bridge in this situation, and she was correct. The class representative eased her anxiety and frustration by providing the necessary information to make the switch seamless. Firstly, Dr Bila wanted information about students such as: What do their lives look like now, and how can learning complement rather than complicate their new reality? Secondly, whatever she did, she had to listen to them in order to design around their capacities. She knew beforehand that there were students who would be unable to join in the session owing to lack of data; moreover, for the collaborative projects, students preferred Zoom or Google Hangouts as these platforms consumed less data. Therefore, her planning was designed around the needs of the students. She developed the study guide based on what was going to be feasible for them. She designed module plans and assessment opportunities that were forwarded to the students a month before the lectures commenced. The class representative was instrumental in sharing the information to the students.

As Dr Bila was busy with her preparation, the document '2020 Teaching Online: The UP Way (COVID-19)', from the Department for Education Innovation, provided information that she could implement to switch to online teaching. She adopted a flipped learning methodology: students had to come to class prepared by completing pre-class activities, and then engage in the virtual classroom. She adopted a stance of engaging with difficult concepts in the online class, while students could seek clarity on all those difficult tasks that they could not comprehend while they were preparing for the online class.

clickUP became a lifesaver and she used Blackboard Collaborate for virtual classes. She also used clickUP to inform students about what would be discussed in the virtual class. Dr Bila notes: 'To my surprise, the "new cheese" was working well. My comprehensive planning made the process enjoyable. The class rep was always in constant communication to give feedback on what could be done to make the learning process profitable. The librarian was also helpful in this process as she assisted by creating an online reader that was user-friendly as it had links that the students can just click and access the readings'.

By the end of the second semester, Dr Bila felt better prepared for 2021: 'My 2020 story is my pedestal. I am now fully equipped for both online and face-to-face teaching. I have embraced and found the "new cheese"'.

Music Technology: Remote Music Performance

Making music completely online was not a new venture at the University. Dr Miles Warrington, lecturer in Music Technology, says: 'It was back in May 2019 that I plucked up the courage to initiate a long-term dream of mine and establish a university-based laptop ensemble. Out of this was born UPLOrc (University of Pretoria Laptop Orchestra).'

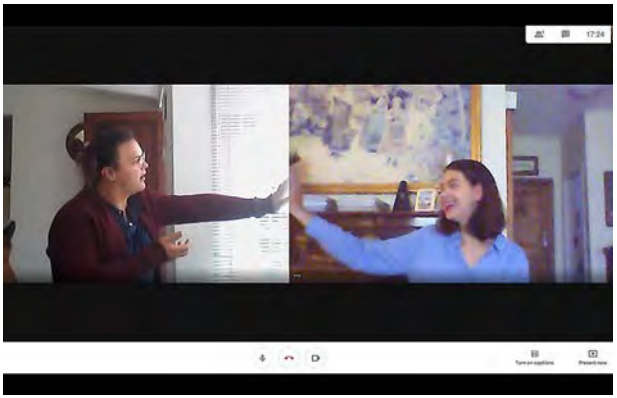
University of Pretoria Laptop Orchestra

Dr Warrington initiated alternative music-making practices within the School of the Arts, but also as an important research mechanism. Master's student Ms Melandri Laubscher acted as the ensemble's manager while pursuing a degree on the subject of laptop orchestras. The role-players worked hard to get the small ensemble off the ground—and just in time for the lockdown at the start of 2020.

Dr Warrington believes that most people fall into the trap of thinking that technology should solve all our problems. The pandemic meant that, generally, music technology subjects were at risk of the somewhat ironic problem of getting things to work and fit with the technology-related course material. The reason is that not everyone had the same computer or recording and monitoring equipment. Equally, an issue was that not everything taught used the same environments, and certainly, much of the equipment on campus was completely unattainable for most people at home. Nevertheless, ways were found to get around this by keeping things simple and teaching the basics using freeware programs and loaned equipment. The music technology students were also given the opportunity to participate in UPLOrc and most of them did. It was here that some inspiration was found.

Live music making was certainly one of the

UPLOrc debut performance, 2019 UP Music Festival (School of Arts)



Stage Technique class in your living room (Classical Voice and Opera Studies)

art-based activities that suffered during the lockdown. Any opportunities to participate in such activities were highly sought after, but rare. Why rare? Re-visiting irony, it is again technology, or rather differing levels of it, that means it becomes almost impossible to do a live-broadcast jam with a live acoustic ensemble over the Internet. Latency makes this a troublesome beast. But, through browser-based network platforms that do not stream audio but rather trigger local engine-based beeps and blips, they were suddenly able to jam (live code) with anyone around the world over standard Internet with almost zero latency. Thus, on 3 December 2020, UPLOrc participated in an online international event featuring laptop orchestras from all around the world. UPLOrc were second on the programme captured here: https://www.youtube.com/watch?v=fd83R6gTgxY&feature=youtu.be.

Classical Voice and Opera Studies

Aside from Vocal Methodology, all other modules and related activities in the Classical Voice and Opera Studies programme are of a practical nature and require in-person teaching, either one-on-one or in small groups. Thus, the challenges that they faced when they had to move to online teaching was how to diagnose physiological and vocal aspects that needed to be addressed successfully and finding effective ways of demonstrating corrections and improvements within a constrained audio and visual environment. Critical details were inevitably lost on both sides owing to inferior sound quality.

The teaching mode for Classical Voice had to change from synchronous to asynchronous, mainly owing to Internet latency, which meant that the lecturer could not play along on the piano while the student sang, as they would not sound together. Students had to send recordings of themselves to the lecturer, who would evaluate the recording, write detailed comments and discuss these during online class, when the student could try to implement suggestions to improve elements ranging from technical to language issues. This mode of teaching resulted in twice the amount of time invested in each class by the lecturers, and the full-time lecturer had an even greater appreciation for the commitment of the part-time lecturers who assisted in the programme.

An integral aspect of preparing voice students for the workplace is Stage Technique classes, which form part of their First Instrument module (MEI). These classes culminate in an annual opera production that is staged in the Aula theatre. The lecturer who teaches these classes and also directs, designs and produces the productions, Mr Tinus Spies, found creative ways of teaching these classes online, while students could still learn from one another and have a sense of community during the classes. It was also a steep learning curve for him, as he started to research technologies and ways of creating a virtual opera, which resulted in a proposal for his doctoral studies.

The department certainly saw a measure of success through the implementation of these altered teaching modes, but this can never fully replace in-person teaching in the programme.

BA (Information Design)

The undergraduate information design degree deals primarily with practical training in communication design and imaging outcomes for screen and print-based media. Being forced to shift to teaching fully online during 2020 therefore presented a unique opportunity to engage in creative problem-solving. This was appropriate given that the degree itself deals so extensively with this attribute. In the end, despite obviously imperfect conditions, lecturers were able to say that the year was a success. Students were able to excel under challenging circumstances.

Right from the start of the COVID-19 lockdown in March of 2020, lecturers contacted students to find out more about their home circumstances, and especially about what tools and technologies they had. In this way, they were better able to understand if there were students with no access to tools that would be essential for furthering their design education. This allowed lecturers to figure out ways to address students' specific needs. Moreover, given the unique focus of the information design degree, the many full-time and part-time lecturers were profoundly inventive in terms of developing ways to consult with students online, and thus guide them in mastering their design skills during the year.

Many brilliant design professionals, usually not available to teach because they live too far away, became accessible because of the necessity of online teaching. For instance, international lecturers Marguerite Dibble and Shannon Mitchell, CEO and COO respectively of the USA-based company Game Theory, gave a presentation to fourth-year design students for the play project lead by Dr Fatima Cassim and Mrs Marguerite van der Merwe. Of course, lecturers soon realised the many aspects of practical training that teaching fully online cannot accommodate, but the shift online also helped them to understand better the possibilities and value of hybrid learning.

During 2020, many past and present students submitted their work to the Loerie Awards—the so-called 'Oscars' of design and advertising in South Africa. The BA (Information Design) degree was voted the overall winner for best design degree in the country, with Mr Kyle Rath placed first in the category of best design lecturer in the country. Moreover, Professor Duncan Reyburn, who also teaches students in information design, won the 2020 Humanities Teaching Excellence Award for Successful and Innovative Teaching under Exceptional Circumstances. Information design lecturer Ms Denél Chetty completed her MA degree in digital culture and media.

Teaching Conservation Science Online to Students without a Science Background

Students in the tangible heritage conservation (THC) master's programme have almost no science background post Grade 9, which has to be addressed for effective learning. As undergraduate programmes in conservation science are non-existent in sub-Saharan Africa, the feeder community is mostly archaeology, historical and heritage studies, visual culture studies, fine arts and heritage, museum and preservation studies.

Lecturers start from atoms and electrons and, within a month, work up to balancing redox reactions. If you want to do a passivation treatment using electrolysis on a shipwreck artefact, balancing these reactions is what you need to understand. In the first year, it became clear what worked and what did not work. Lecturers revised their approach for implementation in 2020, then the COVID-19 pandemic changed the rules of the game. Concepts that were challenging in face-to-face sessions with intensive hands-on demonstrations suddenly had to be taught via an unresponsive flat screen. The pandemic forced the THC programme to redesign its methodology, find different resources and re-invent cross-continental collaborative sessions.

It became clear almost immediately that teaching had to adapt because speaking to a flat screen gave no indication of the student's level of understanding. Daily mini-assignments and quizzes that students had to complete on their own were the only way to evaluate whether they were following. The students became their own tutors, and YouTube and Khan Academy were soon their best friends.

Lecturers were amazed at the range of resources available: a good example is the ACCESS (Academic Conservation Education Sharing Site) where fellow conservators from across the globe were sharing their adaptations to online teaching. Once lecturers overcame

A student receiving her discovery kit (Teaching Conservation Science Online)

Documentation:

1x flashlight 1x UV flashlight 1x UV examination glasses 1x seamstress' measuring tape 3x pairs purple nitrile gloves 1x magnet	

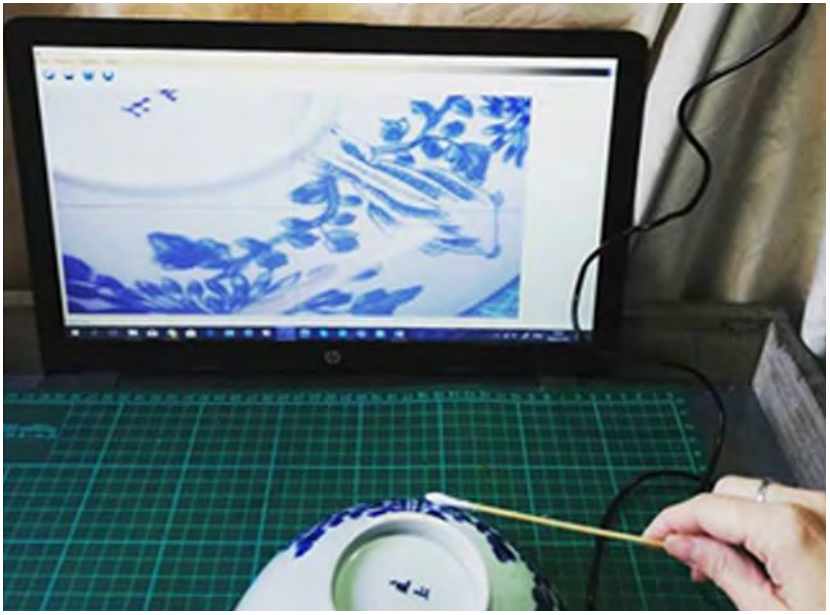
Tools:

1x HB pencil 1x black archival pen 1x bamboo stick with 1 sharp and 1 flat end 2x kebab sticks 1x Sable hair 1x Golden taklon size 3 1x flat golden taklon 1x Stencil brush 1x Hake brush 1x Mop brush 1x synthetic makeup brush	
1x fine point tweezers 1x self-locking fine point tweezers 1x curved point tweezers 1x flat tweezers 1x size 3 scalpel handle 2x packets of 11 scalpel blades for size 3 handle	

Paint & numbers:

1x watercolour set 1x gouache tube 1x oil tube 1x acrylic tube

The contents of the discovery kit (Teaching Conservation Science Online)



Online demonstrations with a USB microscope and a webcam (Teaching Conservation Science Online)

the virtual classroom fear, they realised that international travel was unnecessary to have the experts in the classroom, and colleagues from Yale and Mumbai all participated and offered specialist lectures.

Practical work remained an issue, and here Isabelle McGinn came to the rescue with the development of a discovery kit for each student, consisting of basic tools and examples of all the main materials they teach as well as the reagents etc for some basic treatments. The students' reaction to the kits was amazing, and an unexpected consequence was the extent to which they used social media interaction on WhatsApp and Instagram to share their observations and experiences. Conversation threads stretched over hours and even days and turned out to be an amazing teaching tool.

The assessments were not tests—they were learning experiences. Lecturers had to re-design the assessment strategy and create multiple grading opportunities consisting of class assignments, quizzes, scavenger hunts where students had to find objects somewhere in their house (under lockdown), presenting lectures on topics they had to research themselves and one of the most successful exercises—making paper in their own kitchens.

In the end, students received a much broader background to the study of conservation than would normally be possible and affordable. Lecturers hope to use some of the methods developed in future to ensure students are able to contextualise the theory and put it into practice in the specialty conservation modules, and perhaps other courses as well.

Taking a 'Mock' Model United Nations Debate Online

A central component of the second-year undergraduate International Relations module (IPL 220), which focuses on foreign policy analysis and diplomacy, has been the annual 'mock' Model United Nations (MUN) debate. This constitutes an important group assessment for the module, and it traditionally takes place in the fourth quarter of the academic year. The MUN debate is part of the fabric of the department, and it is highly anticipated by students and teaching staff alike, since it gives students the opportunity to role-play actual countries at the level of the UN General Assembly, debating their country positions in respect of an important international issue. The MUN brings to bear all of the conceptual and theoretical dimensions to which students have been exposed in the module and allows them to apply these 'in practice' while also learning about the formal rules and procedures that govern UN General Assembly deliberations. Traditionally, the MUN debate takes place over a full day on campus. There is much fanfare: students go as far as dressing up to reflect their country's culture, country flags are flown, delegates get to interact with each other, members of the diplomatic community are invited as guests, and real-life diplomats are appointed to adjudicate the debate. Prizes are awarded for best speaker and best country position paper. A group mark per country is then aggregated as part of the assessment for the IPL 220 module.

Remote emergency online teaching and learning initially prompted discussions about cancelling the MUN for 2020. Dr Anthony Bizos, lecturer for the module, initially considered it impossible to translate the logistics surrounding the MUN into an online offering. However, the digital ability, commitment and confidence of Ms Saphia Essop (Dr Bizos' assistant lecturer for this part of the module) meant that they were able to achieve the following:

1. They successfully introduced the first virtual MUN conducted by the Department of Political Sciences under the theme, 'International cooperation in the peaceful uses of outer space'.

2. At no financial expense to the department, Ms Essop was able to source a free online platform for virtual debates from the UN itself, which was compatible with UP's Blackboard Collaborate online platform and capable of accommodating simultaneous sessions for over 250 students.

3. In 2020, rather than having one single all-day session, the MUN was split over three virtual weeks (on Blackboard Collaborate), covering one topic of debate and deliberation. The first week was an introductory session, where countries presented their overall position on the theme of 'International cooperation in the peaceful uses of outer space'. The second week covered the militarisation of space. The third week allowed countries to present on the privatisation of space, followed by resolutions and concluding remarks. Although this was all virtual, it in no way detracted from the experience. The UN's online platform allowed for live and real-time simulation in respect of opening statements, time allocation per speaker and countdown, motions for caucus, voting and voting recordal, together with all other rules of procedure.

4. In the build-up to each of these virtual sessions, Blackboard Collaborate was set up to allow groups to meet privately to discuss their progress, as well as their negotiation tactics and strategies, with teaching staff and dedicated third-year international relations students who volunteered to serve as mentors. In preparation for each virtual MUN session, groups were required to submit written work via Turnitin. The work reflected their understanding of their country's real position in respect of the issue, based on a comprehensive engagement with primary and secondary sources.

In summary, they were able to show that a virtual MUN is both possible and sustainable—and that it does not compromise the lived experience that students have with this opportunity and type of assessment. In many ways, the decision to stagger the virtual sessions over three weeks meant that students were more consistently learning through reading, negotiating and doing.

Faculty of Law

Enrolments
2 487

Undergraduate module pass percentage
93.1%

Graduates
653

Aligning Institutional and Faculty Student Support in Going Fully Online

On 18 November 2020, the Faculty of Law hosted a Teaching and Research Forum for its academic and professional staff members with the Vice-Principal: Academic Professor Norman Duncan as the featured speaker. By the end of the session, the faculty was relatively satisfied that it had done a great deal to ensure that all students had the technology and support that they needed to complete the year successfully, in line with University initiatives.

Professor Duncan addresses UP Law Forum

Professor Duncan started his presentation by referring to his 'ear worm' since the onset of the COVID-19 lockdown, words written by Charles Dickens in his novel, *A Tale of Two Cities*:

'It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of light, it was the season of darkness, it was the spring of hope, it was the winter of despair.'

Professor Duncan used this passage to describe the situation that South African citizens and the University found themselves in at the start of and during the lockdown. He elucidated on the disparity between those living in South Africa who were able to cope and survive financially and those who found themselves in a state of utter poverty and starvation. In his reflection of the past academic year, the Vice-Principal continued: 'The lockdown also had a direct impact on UP's academic programmes as UP immediately had to implement emergency remote teaching (ERT) to maintain continuous quality lectures during the COVID-19 lockdown'.

He alluded to the 2016 #FeesMustFall disruptions of classes, which caused the University to develop contingency plans for fully online teaching, which could be adapted for ERT responses in 2020. He added: 'A while before this crisis period, UP proactively started planning and developing hybrid teaching and learning methods that were not overly-reliant on in-person class attendance'. Professor Duncan elaborated: 'The key hybrid teaching and learning resources that were in place at UP prior to lockdown, such as clickUP, Blackboard Collaborate, the Blackboard app, open educational resources, UP study guides, etc' stood the University in good stead.

Professor Duncan shared data from the learning management system, clickUP, which showed that, on average, 34 098 of 35 943 undergraduate students actively used the LMS daily during lockdown. The statistics further revealed that, on average, 21 314 students attended the 2 470 live Blackboard Collaborate virtual classes on a daily basis. Institutional data reflected that engagement between students and lecturers remained similar to that recorded prior to lockdown.

Faculty data showed a sharp increase in student activity on clickUP, predominantly to access content, but also to complete assessments and use various learning tools. Analytics data showed that, at the end of the second quarter, student accesses of clickUP stood at 413 975, or 38,3 accesses per student. While online, students typically performed a variety of functions, so there were 2 140 524 course interactions, or 198,3 per student, during the second quarter. Mostly, the access was to content (34,2% of the activity).

The University remained student-centred and took evidence-based steps to determine which students might lack devices, data or connectivity, using clickUP activity data as an initial proxy. Professor Duncan noted: 'Obviously, remote teaching requires connectivity and Internet-enabled devices, and in this regard, UP made tablets and laptops available to students in need of these devices'. He pointed out: 'UP's challenge was to ensure that all students had the same level of technological access and competency, as innovation was key'.

Data from the learning management system enabled the Faculty of Law to track the activity of its own students per module and to identify inactive students and contact them. Not all students in the faculty were well equipped at first to go fully online. In May, faculty student advisor Ms Farhana Hassan was provided with a list of 17 law students who had not been active online. Of the ten students whom the advisor was able to reach, six indicated a need for either telephonic tutoring or hard copies of study

material. Telephonic tutoring was subsequently provided to two students, covering two modules they had in common and an additional four for one of them. Both students gained examination admission. In terms of study material, lecturers uploaded it on Google Drive, from where it was distributed by Education Innovation. Students had to complete application forms for laptops and data. The advisor provided students with the details regarding the application process. Information Technology Services reported that 109 students eventually received loan laptops. The faculty was also aware of students' need for data. In the course of the year, Information Technology Services offered data bundles five times, and hundreds of law students took advantage each time.

Professor Duncan stressed that 'UP's most important resource was its lecturers', and he expressed 'great appreciation towards academic staff whose commitment, resourcefulness and innovation resulted in a successful academic year, albeit in extraordinary circumstances'. Much of what the Vice-Principal said resonated with members of the forum. Their experience of additional workload on clickUP in the second quarter was supported by data from the clickUP analytics system, which showed lecturers to be very active online.

Professor Duncan concluded his session by thanking lecturers and students for their positive approach towards ERT and the sacrifices they had made during the past academic year.

Technology as an Antidote to COVID-19 Learning Fatigue

Until recently, the undergraduate LLB module Public Law 320 (PBL 320), presented by the Faculty of Law (UP Law), was considered a high impact module (HIM). In order to shift the module's precarious status, the PBL 320 lecturing team in the Department of Public Law sought alternative delivery methods in line with the University's Teaching and Learning Policy, while making it more accessible, chunky and digestible so students could grasp difficult concepts and acquire the required legal knowledge and skills. This approach demanded clear delineation of the module into the 'prepare', 'engage', and 'consolidate' phases.

In 2020, for the sake of sustainability and long-term application, a computer game was developed and implemented that could be used to consolidate a task or as a comprehensive lecture, thus also aligning with the 'engage' part of hybrid learning. Although this project commenced before the pandemic, it took on a new meaning for the module after the move to emergency remote teaching.

Scenes from Saving Callisto

The game, Saving Callisto: Two Presidents and a Grudge, follows the story of an international legal advisor called to provide legal advice to a female president in a war-room situation. The student takes on the role of the advisor and has to guide the president, whose state is faced with a potential biochemical attack from an opposing state with which they have a strained history. The game was conceptualised, written and designed by Dr Martha Bradley, Professor Annelize Nienaber and Ms Jessie Phyffer in the Department of Public Law, in collaboration with the faculty's education consultant, Ms Faith Mathibedi. The game was developed by Mr Dennis Kriel, a senior instructional designer and educational technologist in the Department for Education Innovation.

The game is designed to be engaging, relatable and educational, while simultaneously taking advantage of Generation Z living and breathing the digital world. The objective is to have the student virtually and creatively occupy the real-world position and witness that the outcome of their legal advice could reverberate in potential real life.

The PBL 320 team realised that using trendy technology would not only meet students on their level, but it was also vital in preparing students for their future workplaces in the Fourth Industrial Revolution. Universities can no longer ignore that the workplace is changing. Court hearings are held virtually in response to the pandemic. Court documents are lodged online. Consultations are virtual. It is imperative that academics address the changing nature of the workspace and prepare students for the traditional and future workplace. Gaming and virtual reality equip us to do so.

In addition to the game, the PBL 320 team expanded on its digital offering in two ways.

Firstly, in order to infuse technology into the 'prepare' phase of learning efficiently, the team created Powtoons, which are short animated videos that take complex international law concepts and break them down into digestible pieces of information. The team aimed to familiarise students with the concepts before their 'engage' session to ensure that they got the most out of their lectures. The Powtoons were written by Dr Martha Bradley and Professor Annelize Nienaber, the two primary lecturers for PBL 320, and designed and created by Ms Jessie Phyffer, the academic associate for International Law.

The second way in which the PBL 320 team expanded on its digital offering was through the creation of a fully 2D/3D animated video on international air law.

Creating of a fully 2D/3D animated video on international air law

International law is a very complex field to which students in their third year have had limited exposure. Thus, the team sought to alleviate learning barriers by offering students a gripping visual experience. The 25-minute video covers the basics of air law, as well as the right to fly over a state's sovereign airspace. The lecture content was written and narrated by Dr Martha Bradley and Education Innovation's senior video director, Mr Andre du Plessis, who designed, animated and produced the video.

The PBL 320 team's contribution to creative ways of teaching during ERT have been recognised by the University of Pretoria. Dr Martha Bradley not only appeared in the November 2020 issue of the Junior Tukkie Magazine, but was also nominated by the Faculty of Law for the 2020 Teaching Excellence Laureate Prize. Furthermore, Dr Bradley, along with Ms Faith Mathibedi and Mr Andre du Plessis, submitted a short video titled 'Embracing technology – Teaching public international law' to the Association of Law Teachers' Annual Conference hosted by Aston University, Birmingham, England. The video was accepted and included in the 2021 conference programme.

A smaller, less technology-intensive way in which lecturers approached ERT was to distribute weekly newsletters to students informing them of what was expected of them regarding the lecturers for a specific week. They offered lectures in a variety of formats including narrated PowerPoints, podcasts, the animated video and interview-style lectures with Professor Dire Tladi and Mr Marno Swart, an assistant lecturer. In terms of assessment, they conducted brief weekly clickUP tests for the 'consolidate' phase in which students tested whether they understood and had properly engaged with the work.

These achievements could only have been realised through teamwork and collaboration. The lecturers acknowledge all staff members who played a role in their revitalisation of stagnant and stale teaching and learning methods, and appreciate the continuous support from the faculty, in particular Dean Professor Elsabe Schoeman and Deputy Dean: Teaching and Learning Professor Charles Maimela.

Because of the efforts of the lecturers and their supporters, PBL 320 is no longer a doom-and-gloom HIM for students. To ensure they keep it this way, two additional levels of the game are already under production and they are working on more short animated videos and Powtoons for other international law courses offered by the faculty. They aim to expand on their digital offerings, even in post-pandemic times.

Students were afforded the opportunity to give feedback on the innovations, and they were very appreciative. The following comment sums up much of the feedback:

'I appreciated the weekly letters prepared for the week ahead so I knew what we would be doing at the beginning of every week. The Powtoon short videos were also a great way to introduce new topics of International law. I also feel that the PBL 320 team invested greatly in tutors and other assistants to make the module as relatable as possible. Ms Phyffer was particularly outstanding, in my opinion. She always came prepared and did not take students for granted. It is really hard to fault the PBL 320 team on any front as doing so would really be scraping the barrel for mistakes. The lectures were made available in a variety of formats (narrated PowerPoint, PDFs, mp4s) so students could access the learning materials in a number of ways. International law is a tough module to grasp under normal circumstances (on-campus lectures, face-to-face consultations), and in the abnormal situation of a pandemic-interrupted academic year, it becomes even more difficult. But kudos to the PBL 320 team for making it so much easier.'

Learning from Government Blunders in Response to COVID-19

Dr Melanie Murcott in the Department of Public Law reimagined the third-year core LLB Administrative Law module (PBL 310) as legal developments in response to COVID-19 unfolded in the courts during lockdown. Many legal challenges in the courts regarding government's approach to COVID-19 provided excellent examples of the ways in which Administrative Law can be used as a tool to challenge unlawful, unfair and unreasonable government conduct in pursuit of accountability.

Dr Murcott engaged students virtually in a number of ways. Among other innovative learning tools, she created interview-style video lectures with guest lecturer Mr Tim Fish Hodgson to offer students a unique learning experience on Administrative Law in the context of COVID-19. She had introduced a module Gmail account before lockdown, and during lockdown this account was an invaluable tool for Dr Murcott, her academic associate and tutors to engage with, encourage and guide students. The lecturer and her tutors also created short Instagram story-style announcements on important course matters to reach students at their level.

Another innovation was using memes as a teaching tool, including a meme competition. Students were invited to create their own

PAJA distracted boyfriend meme

original memes responding to the course materials and current social issues in an amusing way. Students voted in a clickUP survey to choose their favourite memes, and the students who submitted the most popular memes won cash prizes.

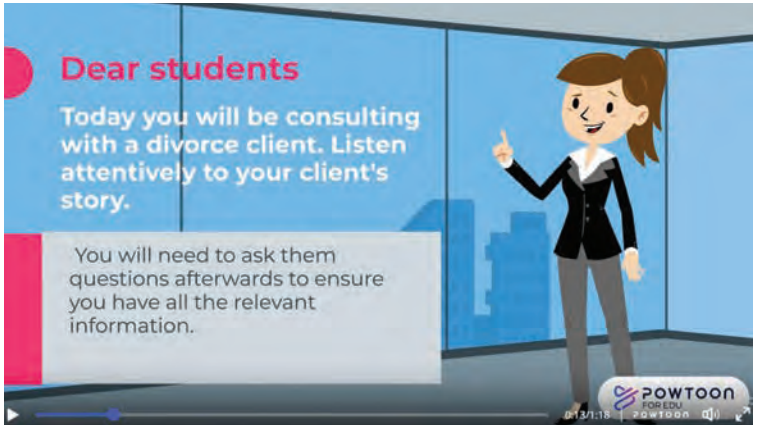
Administrative Law was assessed through innovative clickUP tests. Instead of expecting students to rote learn, she asked students to apply skills and engage with materials to find answers.

Students provided great feedback at the conclusion of the module, which proved that the applied teaching and learning methods were successful. Students appreciated the lecturer's passion and creativity. Her methods allayed some of their anxiety and were entertaining. Students did very well in the module. The following comment captures many of the sentiments:

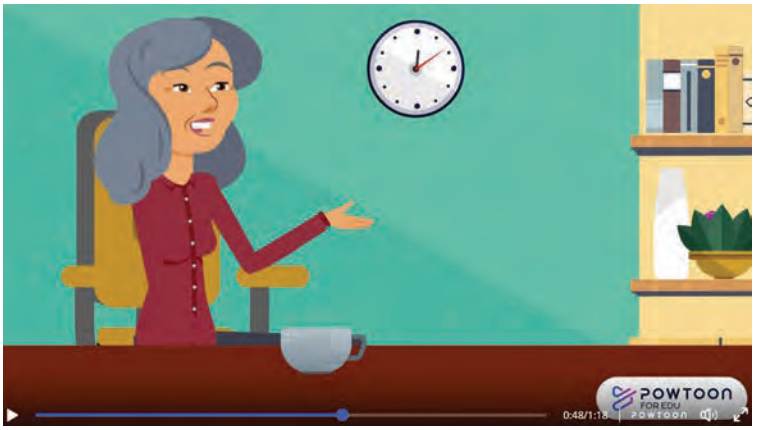
'I have benefited and learned a lot from you as a lecturer for this course. Your stern approach to teaching and passion have well prepared me for the corporate world. I took your advice this year and actually read. I read case law and articles in full this time around with eagerness to learn and polish my skills. I am proud to say that I no longer find them to be tedious. I am no longer reliant on other people in the course to share their summaries. Thank you for not taking a short cut to teaching Administrative Law, and thank you for always being a reminder of why we chose to study law in the first place. It all makes sense, somehow. Today, I am a better student than I've been in a long time because of you, and that makes me happy as you simply are the best in what you do. Continue inspiring others like me to reach for the stars, to tap into their inner selves with the aim of making the best of their time at varsity, keep restoring hope where none is left, and most importantly, continue making law cool again.'

Taking the Simulated Learning Environment Online

Dr Chazanne Grobler in the Department of Procedural Law is responsible for teaching Legal Practice 220 (RPK 220), which focuses on skills development to equip students with the required knowledge and skills to engage practically with the discipline of law. In RPK 220, skills such as consultation and basic litigation are taught using simulated learning. Before the pandemic, students' consultation skills were assessed by facilitating role-play activities in the classroom. Students had the opportunity to consult with a 'client' and observe how other students applied their newly acquired skills. Similar to the consultations, mock



Powtoon consultation assessment 1



Powtoon consultation assessment 2

trials were used to simulate hearings, but these were also curtailed by the pandemic.

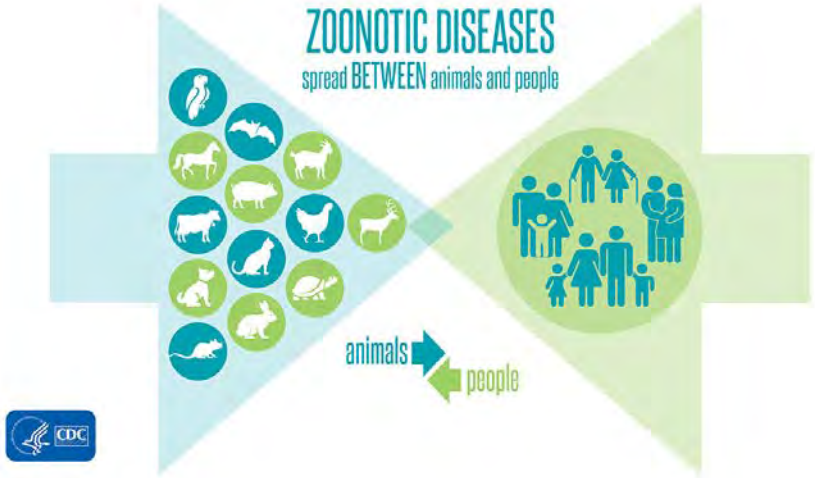
As a result, Dr Grobler had to develop and implement innovative and effective online instructional and assessment strategies to ensure that students obtained the required key competencies. Using Powtoon (video-making software that allows educators to create engaging animated clips), a client consultation was simulated. The 'client' in the animated clip provided her narrative, after which students had to formulate five types of questions to obtain further information for purposes of drafting particulars of claims, enabling them to learn through a simulated environment. In turn, this activity provided the lecturer with a virtual platform to assess students' listening, probing and fact-finding questioning skills and techniques to determine if they were grasping the crux of issues and disputes at hand.

Further, Dr Grobler had to reimagine the use of mock trials as virtual, strategic, and active engagement learning-by-doing exercises. Although moot courts and hearings are held successfully online, it was not a feasible option in this module as many students experienced problems with Internet connectivity and electricity outages. To mitigate the situation, the lecturer provided students with a set of facts and pleadings and, based thereon, students had to compile a screenplay for a mock trial that included stage directions and court etiquette. Students had to apply basic litigation skills and demonstrate a thorough understanding of the basic trajectory of a trial and court etiquette.

Students approached the assignment with much enthusiasm and creativity, with the final product showing the students' ability to make the material come alive.

A Real-World Learning Experience in Environmental Law

Dr Melanie Murcott in the Department of Public Law invited students to learn about Environmental Law (OMR 410) by looking at the world around them, under lockdown, and capturing photographs of the environmental issues they could see in their immediate surroundings. The photographs formed part of the students' assessment, as they had to be included in the four-part portfolio, along with students' reactions to the provocative prescribed readings. The students' photographs were incredibly creative and served as a platform for Dr Murcott and the students to get to know each other in a time of remote learning by making students feel less isolated from Dr Murcott and each other.



Zoonotic diseases[20]

During the module, students received extensive feedback on their portfolio submissions, and then revised and consolidated their submissions for their examinations. The examination submissions showed immense improvement in the students' understanding of the materials and issues raised by the module.

In OMR 410, Dr Murcott reimagined the classroom by giving students the opportunity to engage in strenuous debate and vibrant discussion in weekly online Zoom question-and-answer sessions, as well as on a clickUP discussion board. Students were rewarded for their participation, as 20% of their semester mark was based on an assessment of their efforts to participate in discussion and debate in the Zoom sessions and the clickUP discussion board threads.

Dr Murcott recognised in her teaching that COVID-19 is a zoonotic disease (involving the transfer of pathogens from non-human animals to humans), and that such diseases arise from, among other causes, the destruction of biodiversity and the mistreatment of animals in a way that exposes humans to pathogens from animals. Consequently, she introduced the study of aspects of the emerging field of animal law and engaged with the socio-ecological realities of zoonotic disease, as well as the need for the law to respond more effectively.

This is another way in which Dr Murcott's students were given the opportunity to engage with the current social context in a way that brought the module to life and illustrated to students the module's importance and relevance in the real world.

20 https://www.cdc.gov/onehealth/images/zoonotic-diseases-spread-between-animals-and-people.jpg

UP Law Hosts Inaugural Staff Development and Career Planning Retreat

From 13 to 14 November 2020, the Faculty of Law held its first staff retreat for lecturers and senior lecturers focused on academic career planning and development. The main purpose of the retreat was to provide early-career academics in the faculty with the tools, resources and support needed to shape the direction of their work as scholars, teachers and academic citizens.

Staff were engaged in a comprehensive programme covering themes such as 'The scholarly journey – signposting your career from lecturer to professor', 'The scholar as researcher: defining your area of scholarship' and 'The scholar as teacher: curriculum matters and hybrid learning'. The Dean, Professor Elsabe Schoeman, also addressed colleagues on their role in advancing the vision and strategy of the faculty based on the principles of inclusivity, interdisciplinarity and excellence.

The keynote presentation was delivered by theologian and public intellectual Professor Tinyiko Maluleke, currently based in the Centre for the Advancement of Scholarship. Entitled 'The idea of the university and the vocation of scholarship in Africa', Professor Maluleke's presentation drew on many insights in higher education scholarship to underscore the need for multiple ideas of the university to exist side by side and in contestation with one another. He also challenged colleagues to reflect on what it means to do research in light of our situatedness on the African continent and its history—including the interconnections between colonial power and knowledge.

The retreat also provided colleagues with an opportunity to get to know one other and cross departmental boundaries in the spirit of building an inclusive and intellectually rich space for teaching and research. The faculty plans to make the retreat an annual fixture on UP Law's calendar.

Professor Tinyiko Maluleke

Faculty of Natural and Agricultural Sciences

Enrolments
6 490

Undergraduate module pass percentage
80.9%

Graduates
1 316

Honours students' trip to the Barberton Greenstone Belt

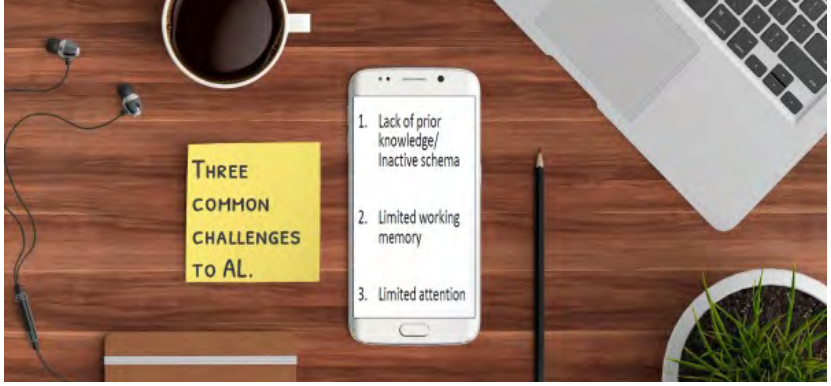
A National Framework for Enhancing Academics as University Teachers

Developing Academics as Teachers

Continuous professional development of staff members remained one of the teaching and learning priorities during 2020, building on the foundation of the preceding two years, especially where these activities became integrated into the annual performance planning process. Dr Ina Louw (the Education Innovation consultant allocated to the faculty) presented 22 CPD sessions and facilitated one on-campus and three online FLY@NAS events throughout the year. The contact session in February highlighted the services rendered by the major professional units, and in June, Gradescope, an online marking system piloted by Statistics, was demonstrated. The August session was called 'Winner's circle', and Dr Rory Biggs shared his passion for teaching as the 2019/2020 Laureate winner. In September, lecturers shared their learning during COVID-19 and online teaching, and in October the faculty hosted the virtual farewell function for Professor Marietjie Potgieter, the outgoing Deputy Dean: Teaching and Learning. The sessions concluded with a highlight by Professor Gordon Uno: 'The 10 Rs of science education'.

Professor Gordon Uno addresses FLY@NAS

In terms of going online, Dr Louw and Ms Mpho Thukane, instructional designer, guided staff through the online teaching and learning framework developed by Education Innovation and hosted Collaborate sessions. Discussion forums were held on online teaching, especially assessment. Weekly announcements were sent via the FLY@NAS clickUP page and useful titbits (>100) shared to support colleagues with the rapid transition to online teaching and learning. In addition to the FLY@NAS clickUP resources, a shared NAS teaching and learning drive was created where resources were shared with more than 300 colleagues. Dr Louw and Dr Rory Biggs produced another two successful editions of the Bulletin. The fifth edition of the bulletin was a particular highlight since it included 16 contributions by colleagues from four faculties and Education Innovation.



UPstarters' session on active learning

Launch of the UPstarters

A National Framework for Enhancing Academics as University Teachers categorises academics into five career stages, ie, emerging scholars, new and early career academics, established academics, teaching leaders and university management. The idea is that continuous professional development should be tailored to address the different needs of the different groups. As a first step towards integrating the framework in the CPD of the faculty, a community of practice for emerging scholars and new and very early career academics was launched in August 2020. The group named themselves the UPstarters. During the monthly meetings, a needs analysis was conducted, a session on active learning held and a cultural intelligence workshop offered. The group asked to have a session on 'carving your career path in academia'. Professor Paulette Bloomer, the Deputy Dean: Teaching and Learning, facilitated that topic early in 2021. From the end of 2020, the group was also joined by mentor Dr Pamela de Waal, who will be working with the UPstarters as part of her TAU Fellowship project.

Cluster Awards for Teaching and Learning

Funding made available via the University Capacity Development Grant was again used to give recognition to the colleagues nominated by the student faculty house, NATHouse, and to make cluster awards. Small committees in each of the clusters worked with Dr Louw, and the criteria were streamlined across the clusters. An additional category was launched to recognise exceptional innovation during 2020.

The NATHouse best first-year lecturer for 2020 was Mr Gideon Brits, who provided an important foundation in mathematics to the extended curriculum programme students. The best lecturer of senior courses was Professor Vida van Staden, who teaches two core genetics modules in first and second year. The cluster winners were Professor Vida van Staden (Biological Sciences), Dr Rene Ehlers and Dr Eder Kikianty (Mathematical Sciences) and Ms Anita Botha (Physical Sciences). Two colleagues were recognised for exceptional innovation: Dr Victoria Rautenbach and Professor Adrian Shrader.

Dr Eder Kikianty

Ms Anita Botha

Dr Victoria Rautenbach

Professor Vida van Staden

Dr Rene Ehlers

Professor Adrian Shrader

Step-by-step remote practical demonstration

Maize field work

Take-Home Practical Classes and the Use of Video Demonstrations

Various departments were very innovative in their solutions to remote practical classes, from physics to biological, agricultural, and consumer and food sciences.

Physics experiments were designed that used equipment that would be easy to find. Experiments included simulations (eg, mirrors and lens applet on the computer) and real experiments (Hooke's law with a bottle of water suspended from rubber bands and friction involving a book wrapped in paper sliding off a paper-wrapped incline plane). Students also did a projectile motion practical class where free motion analysis software was used to track the path of a projectile. Although most students opted to use the data supplied, some did the experiment themselves. In these experiments, several variations illustrated the details or limits of applicability of the physical law investigated; eg, with Hooke's law, the deviation from ideal behaviour of the rubber bands was observed, and with friction, the relative independence of friction on a macroscopic contact area was investigated. The feedback received from the students indicated that they enjoyed doing these practicals, realising that one does not need purpose-made equipment to do real physics experiments. They also enjoyed the autonomy they had in designing the experiments.

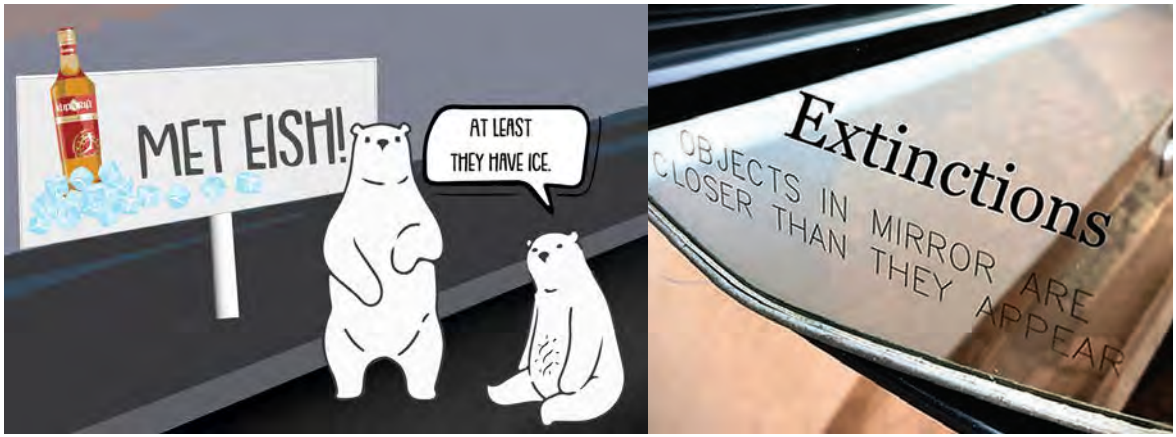
Three modules presented by the Department of Plant and Soil Sciences, Introductory Soil Sciences (GKD 250), Principles of Plant Pathology (PLG 262) and Soil Fertility, Soil Microbiology and Plant Nutrition (GKD 420 / GDK 783) introduced 'take-home' practicals. Students had the opportunity to fetch prepared practical kits from campus (or the department couriered them to those who did not live in or around Pretoria), and students conducted the practical experiments/projects at home. Students had to take photos of their progress on a weekly basis, upload them on Google Drive, collect data and then write a practical report based on what they had and the results they obtained. In this way, students had to take ownership of their experiments/projects, execute and monitor a research investigation, and gather, manage and interpret data.

In Sustainable Crop Production and Agroclimatology (PPK 251), Professor Michael van der Laan introduced a community engagement initiative as part of the practical component: namely, 'Grow your own crop and make a "how to" video'. In one of the best projects, the student actually made a profit. Comments received from students about this activity included: 'The practical project was very fun and eye-opening' and 'Having a project to do outside helped my mental health during quarantine'. They also had a number of students growing their own crops on the University's community engagement site, Moja Gabedi in Hatfield, which worked very well, and substantial knowledge transfer took place.

Traditionally, clothing construction modules presented by the Department of Consumer and Food Sciences relied on small groups of students watching demonstrations and then repeating the steps. Social distancing prevented this mode of demonstration. The solution was to make video recordings of each step for each practical class. This was achieved using a GoPro camera with a chest harness to do the initial recordings. Afterwards, these were edited into short video clips, integrated with the theory slides and sections from the prescribed textbook. The video clips were then played in class. Advantages of this included overall class discipline, saving time and allowing repeat viewing. Importantly, the overall standard of the practical work improved. It took many hours to film these demonstrations, and even more to edit them into video clips, but these are now valuable teaching resources.

The foods practical classes (VDS modules) also had to be adjusted because of a reliance on perishable foods. In terms of consumer sensory research, past practice relied on getting a sample of diners into a restaurant setting and collecting data about their sensory experiences. As the restaurant industry was one of those most adversely affected by COVID-19, lecturers had to rethink data collection and chose to implement a variant of the popular food-delivery idea. Instead of participants sitting in a restaurant setting and sharing their sensory experiences, they had food delivered to their homes, from where they could safely participate in the research. Similarly, in the past, students acquired hospitality management skills by organising an event. Since the EAT@UP restaurant was closed under the COVID-19 regulations, the department was forced to adapt and actually improved their ability to offer students world-class, hands-on training. Students were each assigned the task of planning and managing the production, packaging and delivery of a meal to their customers' homes.

Innovative food practical assignment



Memes designed by students: Stefan Mostert and James Short respectively

Social Media Assignments for Science Communication

Getting information out to the general public in a form that they understand and engage with is vital. As such, one of the key learning outcomes of Conservation Ecology (ZEN 364) is science communication. To achieve this outcome, Professor Shrader had his third-year students do two social media assignments. The first was a project where the students generated a blog, podcast, or video of a conservation topic about which they were passionate. Professor Shrader provided guidance throughout the process and, once it was completed, had the students peer-mark 20 of their classmates' projects. This achieved three outcomes: (i) the students critically assessed content; (ii) it exposed them to topics not covered in class; and (iii) they could compare their achievements with those of their peers. Moreover, the project exposed the students to 21st-century skills (eg, critical thinking, creativity, ICT skills) that they would be likely to use in their future careers. Based on the success of the project, Professor Shrader and Dr Ina Louw submitted a manuscript about the social media project that is now in press in the Journal of Biological Education.

The second social media assignment that the ZEN 364 students did was a practical where they generated memes (text overlaid on a picture) to convey conservation messages. If you think about it, memes are a very powerful way in which bite-sized chunks of information can be spread to a vast number of people. However, distilling an idea or concept down to a bite-sized chunk is not so easy. Professor Shrader generated this practical assignment to replace one that could not be run in 2020 as it required the students to be on campus. In addition to generating the meme, the students wrote a 300-word abstract about their topic. This forced the students to engage with the conservation topic and provided a way to judge the effectiveness of the meme. Ultimately, the use of blended learning techniques and free online textbooks in ZEN 364 helped Professor Shrader to achieve the same learning outcomes, provide the same assignments, and use the same mark distribution as in previous years. This resulted in both the examination and final marks for 2020 (online) being very similar to those from previous years (face-to-face).

Chemistry – A Practical Science

Teaching and learning chemistry presents a conceptual challenge under any circumstances, because chemistry concepts are abstract in nature. Molecules cannot be seen, at least not by students in class, and students must make sense of content that is presented by means of technical terminology, representations, equations and symbols. Yet chemistry is also a practical science, and much of the sense-making happens in the laboratory while students do practical work. However, teaching chemistry

virtually presents significant additional conceptual and practical challenges. Students miss learning with peers in class and in the laboratory. The electronic tools available for virtual demonstrations are data-intensive, and special software is required for staff and students to draw three-dimensional structures of molecules.

The virtual environment was not an equaliser. Most first-year students underestimated the demands of their course content, especially if they passively watched well-prepared lectures. Academically strong students could correct their misjudgment but students who lacked self-discipline and consistency in learning were more vulnerable without the regular prompting that happens during contact teaching. Poor Internet connectivity and data constraints further complicated matters.

During 2020, chemistry lecturers addressed this challenge in innovative ways. They pre-recorded lectures, made videos of models and practical demonstrations, and converted practical work to assignments. The CMY 127 lecturing team adopted a flipped classroom approach that proved particularly beneficial to students: 20-minute lectures were pre-recorded to focus on the content, and exercises were given for students to test their understanding before a 30-minute live session. These were supported by short tutorial sessions and online homework, all balanced to avoid overload. Student feedback testifies to the value of this approach:

'The setup of the tutorials with the live … sessions that were not too long to allow us time to also complete the online McGraw Hill Connect tutorials within the tutorial session worked for me, making sure I completed everything on time. I also benefited greatly from the structure of the lectures. Completing the theory pre-recorded video and class exercises before the live Collaborate sessions allowed me to actively take in the content a second time during the session and make sure I understood it with the worked-through practice exercises.'

Lecturers realised that effective communication with students, pacing and encouragement were critical for student success. Students appreciated clear communication, the sense of lecturer presence and the encouragement given.

The sudden switch to fully online teaching and learning during lockdown placed a heavy burden on lecturing staff. As one lecturer said:

'The volume of work just seemed to quadruple. For one, setting enough questions for an authentic assessment became a marathon task. Our mailboxes were flooded after tests and exams, and it literally took days to work through all the mails to establish if there were any valid cases.'

Under such circumstances, teamwork and comradery were key:

'Teamwork is always important, but when we went online it was critical. Working with a committed team was a life-saver … We supported each other, trained each other and kept a positive spirit going.'

Applying Geoinformatics in the Real World

The focus of GIS 311, a module in geoinformatics, is to teach students new technical skills and how to apply their existing knowledge, rather than theory with some practical work. During the 2020 lockdown, students had to cover topics such as project management and data analysis with Python. Thus, in order to keep the standard and spirit of the module, they used online collaboration tools, specifically, Miro and Replit.

Miro it is an online collaborative whiteboard platform with numerous useful templates. Miro worked well to involve students. Dr Rautenbach was also able to see what they were working on in real-time. One example of how they used Miro was to design a dashboard to monitor COVID-19 cases in South Africa. The students were given a scenario and then used sticky notes to indicate data or functionality that would be required. Thereafter, they could organise their ideas and, lastly, draw wireframes for the design. The students enjoyed this activity and even requested that they continue to use Miro when they were able to return to campus.

Replit is an online development environment that allows multiple users to collaborate on the same code, similar to Google Docs. For class, a task was divided into various functions and the students worked in pairs (pair programming) to complete their function. Dr Rautenbach, the lecturer for the module, was also able assist and show the students her process for debugging when they encountered an error. This gave the students a more collaborative experience when they were working on a challenging topic, similar to what they would experience on campus in practical classes, rather than being isolated.

Reimagining Teaching and Learning in Natural and Agricultural Sciences

The past year was characterised by challenges but also innovation and resilience. The efforts by staff and students resulted in good pass rates in most modules and a deeper understanding of how learning works.

Dr Andi Wilson of ZEN 362 shared the following: 'It is perhaps an understatement to say that 2020 and the pandemic greatly influenced the way we, as educators, handled the academic year. It changed the way we taught, the way we interacted with each other and our students, and the way we assessed progress and learning. Our students faced similar challenges, with the pandemic changing how, when and where they learnt, how they interacted with their classmates and how they measured their success'.

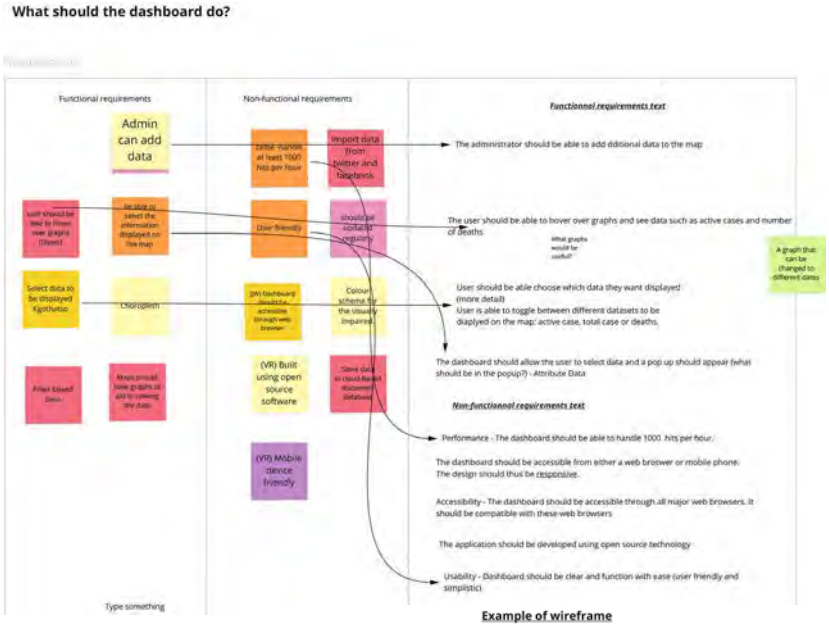
Continuous assessment also seemed to be a major positive in the 2020 academic year, an innovation that benefited the students and lecturers alike. From the lecturers' points of view, continuous assessment meant that they could catch problem areas early on and change their instruction styles to communicate the material and suit the students' needs better. Similarly, the students also benefited from continuous assessment as they were strongly encouraged to keep up to date with the work being covered in class, instead of cramming for semester tests and examinations.

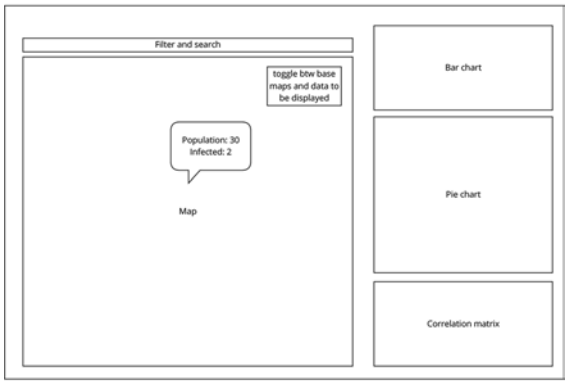
According to Professor Andriette Bekker, of Statistics, the challenges in 2020 also brought about some good. She states: 'We were all

forced to stretch our imaginations and step out of our comfort zones in order to devise innovations that would allow us to overcome the circumstances'. Two such innovations were the introduction of Numbas and Gradescope. These tools proved to be invaluable to those who used them. They not only helped the lecturers conduct assessments more effectively, but they especially helped ease the burden for lecturers of large groups.

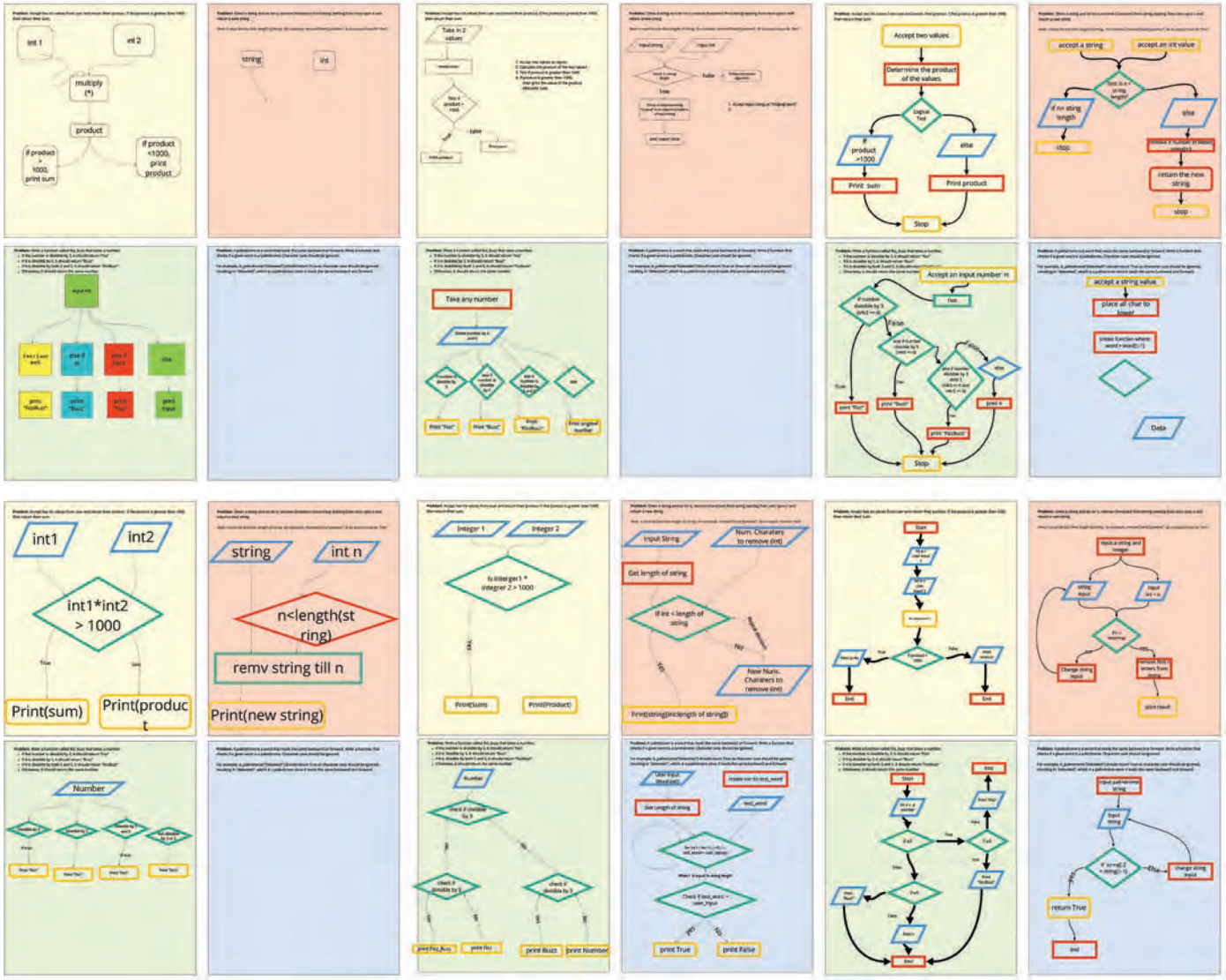
Now the exciting step of reimagining the future of teaching and learning in the faculty needs to proceed at a rapid pace. Some programmes can easily be adapted to fully online offerings and expanded to cater for retraining of existing professionals. The faculty needs to consider critically the future skills needed, what we teach and how we teach it. For each discipline, we need to strike an optimal balance between face-to-face and online teaching and learning.

Many academics accept that as they slowly start transitioning from the 'emergency responses' of 2020 to the 'new different' of 2021 and onwards, it is not likely that they will teach and assess in the same way again. Embracing the technology that assisted them through the pandemic, while ensuring accessibility to all students, will continue to enhance teaching and learning.





Students collected and classified requirements for a COVID-19 dashboard during an interactive session with Miro



Review of basic algorithms in Miro using flow charts

Faculty of Theology and Religion

Enrolments
733

Undergraduate module pass percentage
83.1%

Graduates
171

After an auspicious start to the year, the COVID-19 pandemic posed challenges to the teaching and learning activities of all students and lecturers. To ensure student success, the faculty assisted students to migrate to an online learning mode by providing data, devices, training and emotional support. Lecturers were provided with necessary training opportunities to adjust to the new modality of teaching, which included pre-class preparation, in-class consultation and post-class consolidation of knowledge. Coping with a new teaching and learning environment required a collective effort, reciprocal patience between students and lecturers, and hard work. By constantly monitoring student participation levels, lecturers could identify and assist struggling students to try and ensure that no-one was left behind.

Lecturers' Perspectives

Whether they were just starting out at the University or had years of experience, lecturers faced challenges in adapting to emergency remote teaching. Sheer hard work, dedication to student success and high levels of creativity resulted in extraordinary teaching to meet exceptional circumstances.

Settling in at the Faculty of Theology and Religion

Dr Buhle Mpofu was appointed at the University on 1 April 2020. He had the dual task of transitioning to the University and immediately having to change the mode of delivery. Dr Mpofu says: 'I had to contend not just with COVID-19 disruptions, but also with load shedding, which affected Internet connections while I settled and learned new teaching systems during isolation. It was unfortunate that COVID-19 delayed the orientation, and that meant I had to work from home at a time when I needed to comprehend the University systems. But I was relieved to realise that the University has up-to-date online resources which include virtual tours, and I found these very helpful. Since there was no pressure exerted on me, I took advantage of self-paced learning and quickly practised navigating online resources while prioritising research and publishing, which were not directly dependant on teaching or faculty management structures.'

Dr Mpofu found that navigating Blackboard Collaborate before training on clickUP was not easy. This posed a challenge as he also experienced technical glitches at a time when he was learning by discovering. However, his situation improved when the lockdown moved to level 3 and inter-provincial travel was permitted. After moving to Gauteng, he was able to go to campus. He managed to visit

Information Technology Services to collect a laptop and fix technical issues with his staff account. These developments improved his situation and he managed to register for clickUP self-paced courses, which prepared him for teaching the modules assigned to him.

Guided by the principles of maintaining high academic standards in teaching and learning, he says he quickly learned that student success is a priority and embraced a hybrid teaching and learning approach, now extended to be fully online. Dr Mpofu states: 'I embraced the disruptions as transformational, and I was spared the agony of holding on to anything that was collapsing—mine was a new world and everything was evolving with great potential for new practices to emerge out of what seemed to be a chaotic situation. Systems were falling apart, and I had no system to hold on to. Offices were shut and I had not yet been allocated one. So I saw in that chaos a great opportunity for institutional transformation, something which I later described in one publication as "an opportunity for a paradigm shift, for us to go sharply into reverse [and] rehabilitate ourselves" out of "traditional self-serving practices" that had been disrupted by COVID-19. Our traditional structures both at church and at institutions of higher learning had long been self-serving and COVID-19 presented an opportunity for overdue transformation'.

When staff were finally allowed to work on campus on a rotational basis, he had an opportunity to occupy his new office at a time when people had to maintain social distancing and wear masks at all times. He felt he was spared the agony of responding to those questions directed to new staff on their first day at work: Who are you? Where do you come from? Where do you live? He reflects: 'I was me, I had come out of COVID-19 isolation, and I lived in a world that was still reeling under the devastating impact of the pandemic. I have learned that sometimes it's okay to be alone, to figure some things out by ourselves. COVID-19 has taught me that sometimes we are safer, better and stronger when we are not together'. However, he did look forward to a time when they could have more face-to-face contact so that they could connect and collaborate in new ways that would enrich their work and lives. Dr Mpofu is optimistic that we shall emerge from these challenges better and stronger.

Teaching in a New Environment

Professor Sias Meyer had a before and after experience in 2020. At the beginning of 2020, no-one had any idea what was coming. Luckily for him, when the University had to close, going online was not strange.

Professor Sias Meyer

Professor Meyer maintains: 'My experience of attempting to teach online on at least two occasions during a semester before COVID-19 was mostly positive. I had the impression that some students thrived in an online teaching setup. It had already become clear that online would be part of the future, even if only used to supplement more conventional in-person teaching. "Variety is the spice of life," a friend of mine would always say, which is just a more poetic way of referring to "hybrid teaching"'. Then came the pandemic, and technology-enhanced teaching was the only option available.

Class attendance in the Faculty of Theology and Religion is usually good. One clear difference between 2020 and earlier attempts at online teaching was that far fewer students attended the classes synchronously, probably because of device, data and connectivity constraints. This was a negative change, but a more positive surprise was a pass rate only slightly lower than before and higher than expected under the circumstances.

Professor Meyer believes that such an outcome bears witness to students' resilience: they exhibited the ability to persevere and bounce back under very unfavourable conditions. He thinks lecturers should acknowledge this resilience and do everything in their power to maintain and strengthen it. He is of the opinion that 'We also need to instil the same attitude among students who struggle to persevere, and we need to instil and maintain that same attitude in ourselves'.

In line with the University's teaching approach, based on the flipped classroom, he stresses that lecturers should do everything in their power to help students to come to every class prepared. He had used Turning Point in class in the past to check comprehension, but clickUP offers possibilities such as quizzes for students to do beforehand. Whereas a flipped classroom was an option before the pandemic, Professor Meyer acknowledges that it was indispensable for remote online teaching. He also sees value in continuous assessment as it is more realistic for students to keep up when assessment consists of a consistent stream of smaller tasks rather than only a few big assessment opportunities. This practice also makes it easier for students to keep the proverbial foot on the pedal and to practise that resilience that they will need in 2021.

Student Perspectives

All first-year students in Theology and Religion do the Academic Information Management module, where they improve their digital literacy and learn about clickUP, among other things. They are also exposed to clickUP to complement face-to-face teaching in their modules. They were thus somewhat prepared to work online after lockdown but many experienced varying degrees of frustration owing to lack of devices, data and connectivity as well as living in circumstances not conducive to study.

Studying in a New Environment

Ninnaku Oberholzer had been a student at the University since 2015 and she perceived 2020 to be one of the most difficult academic years since her studies had begun. She believes, however, that overall the University tried its best to keep students safe while also giving them the best education possible in these circumstances.

She was already a student at the University during the last closure because of the #FeesMustFall protests of 2016. She thinks that the experience helped the University to explore online teaching options and tested their response to unimagined events. Comparing 2020 to the University's response to lockdown and online teaching in 2016, she reflects: 'I have experienced a faster response and decision-making process by those in charge. The clear decision-making and communication with students helped the student body to understand the University's stance on the pandemic and the steps that will be taken going forward'.

Ms Oberholzer was appreciative of the University's efforts to provide laptops to students in need as it made a great difference, but she points out that the data access and free service networks fell short in practice. She asserts: 'It was often not possible for students to log into clickUP because of the weak signal, let alone complete online tests or stay online for the duration of a two-hour class'. She fears that this led to students deciding to drop out or being forced to abandon their studies. She acknowledges that this was not completely in the hands of the University but says it is something to consider as we move forward into a new pandemic year.

Ms Oberholzer concludes her reflections as follows: 'While the University of Pretoria gives the impression of functioning on a professional and business level, it is important to note that its responsibility is to the students as well as its staff. The shortening of semesters, technical issues, and over-policing of staff and student workers has, in fact, made this time more difficult. While it seems that no change is imminent in the near future, a new way of normal needs to be established that helps the University, its staff and its students'.

Reflections on Teaching and Tutoring

Tutors are a mainstay of the teaching and student development model at the University. Charel du Toit is one of those more senior students who had to cope with the changes to his own studies after the lockdown as well as learning how to tutor in a different mode and help more junior students to manage in the changed environment. Mr Du Toit says: 'I cannot think of a more important task than teaching and learning. Surely, it constitutes the foundation of academic life throughout one's University journey. As a tutor, one gets to know and love the faces that stare at you in excitement and nervous anticipation on the first day, and then see them grow to competent academics and students. It is a reward in itself'. His words typify the type of student who becomes a tutor at the University.

As early as 2017, lecturers at the Faculty of Theology and Religion started instructing tutors about online classes and giving them chances to practise these skills once or twice a semester. They could not have foreseen the current pandemic, nor could they have predicted its impact on academic life. However, tutors were somewhat prepared.

Mr Du Toit gives a comprehensive survey of what happened in the faculty: 'I do not think theology students felt the move to online as unnatural or sudden. It was inconvenient and challenging but we have been preparing for a hybrid way of learning for years now. The first years were probably the most affected group. In this regard, our faculty doubled down on training and workshops. All students, but especially first-year students, had constant classes, PowerPoints, PDF documents, YouTube tutorials, WhatsApp groups, and so much more that helped them through their academic year. Senior students took leadership roles and reached out, presenting academic writing and referencing classes. Others created support groups and emotional support was given'.

The Blackboard Collaborate Ultra platform proved invaluable in reaching students and keeping in touch. Lectures were recorded and made available after class for those who could not tune in to live sessions. Further, most lecturers also uploaded their PowerPoint slides and created narrated PowerPoints for those who struggled with Internet connectivity or data. Assessment also changed. There was a stronger shift towards written assignments and online tests, with some lecturers finding creative ways to engage with students through assessment and mini reflections that had to be submitted.

Mr Du Toit concludes: 'I was grateful for this shift, as a focus on assignments and writing made me better prepared for postgraduate studies. The consequence was not only that our students felt seen and engaged with, but also that relationships were formed and students felt a sense of belonging'. He adds, though: 'That is not to say that we don't all wish we could return to normal'.

Both Near and Far: The Evolving Issue of Proximity for Students during the Pandemic

Faculty student advisors have played an increasingly valuable role in the University since about 2012. Students meet them at first-year orientation and FLY@UP events; they consult them individually; they attend arranged workshops on topics like study, time management and test-taking skills; and they often approach them when they do not know where to turn academically or for financial, residential or psychological problems.

The nearer the novel coronavirus got to South Africa and people's everyday lives, the farther students were forced away from places like classrooms and libraries, from people like their lecturers, their peers and support staff like the advisor, each one a key resource, under normal circumstances, in the teaching and learning process. Distance led to isolation and isolation to anxiety among these young men and women. However, it also led to new opportunities as they began to fight back against the prospect of their educational and vocational dreams being derailed.

Long-standing strategies like the hybrid teaching and learning model, and firmly-rooted

Awards ceremony

Awards ceremony

programmes like FLY@UP—in which advisors play a key role—made it possible for students with electricity, a smart device, an Internet connection and sufficient data to continue doing their academic work, while at the same time providing them with the personal, social and technical support they needed to keep working.

However, there were many students without the blessing of a good study space at home, devices and connectivity. For them, University interventions provided a lifeline. Mr Mahan, the advisor for the Faculty of Theology and Religion, says: 'Just imagine, one day a loaned laptop gets delivered to a student in a village and the next, data is loaded on her phone. That same afternoon she joins a video call with her tutor and learns how to download some much-needed reading material. Step by step, this emerging scholar and thousands like her learned that staying far away has its advantages, protecting their health and that of others. They also learned that with enough hard work and good will, not to mention a little old-fashioned luck, people bound together by their membership in the University of Pretoria community can still find themselves in surprising proximity to their dreams, come what may'.

From the point of view of advising, in the opinion of Dana Mahan, 'the freedom to accept that life through lockdown would be hard, though not impossible, made all the difference in the world'. Advisors remained in contact with students through WhatsApp, email and other online platforms.

In Celebration of Excellence

In November of 2020, the Dean of Theology and Religion, Professor Jerry Pillay, hosted an awards ceremony for students in his faculty who had recently completed their degrees with the highest level of performance and distinction. The group of graduates and their families joined their former lecturers and other University staff members at Philadelphia Church, not far from Hatfield campus, for this carefully planned event, organised with strict observance to all necessary health protocols, but also filled with great joy and satisfaction.

Professor Jaco Beyers, head of the Department of Religion Studies and Chairperson of the Faculty Teaching and Learning Committee, served as the master of ceremonies, welcoming all the guests at the outset and offering a final farewell as the occasion drew to a close. Professor Pillay delivered the keynote address, and Ms Lethabo Molopyane, the merit award recipient with the best overall average, shared a testimonial from her days as a postgraduate student in the faculty. From the words of wisdom to the certificates handed over; from the gift baskets provided to the photos taken, it was a very special time indeed for all those blessed to attend.

During a separate event, the faculty award for teaching excellence was presented to Professor Sias Meyer for his innovative ways of presenting lectures to students, using a hybrid form of teaching, and reaching out to students in creative ways.

Throughout the year, a great deal of time, energy and money, all the resources an institution like the University of Pretoria can muster, are directed at identifying students who are struggling to reach the standard of performance expected of them, so that the obstacles they face can be removed and their march toward completing their degree programmes can continue unimpeded. From a leadership perspective, however, this effort to guide and assist such students is best accompanied by placing equal emphasis and recognition upon their peers who, in the fullness of time, surpass the educational expectations set before them.

Through the awarding of merit certificates to top-achievers and the faculty award for teaching excellence, Professor Pillay, Professor Beyers and others ensured that an important, careful balance of encouragement and support remained firmly in place, even amid the difficulties brought about by the COVID-19 pandemic over the course of 2020. If the show must go on, so must the hard work and the celebration of student and lecturer success.

Faculty of Veterinary Science

Enrolments
1 415

Undergraduate module pass percentage
98.6%

Graduates
209

A Century of Veterinary Education in South Africa

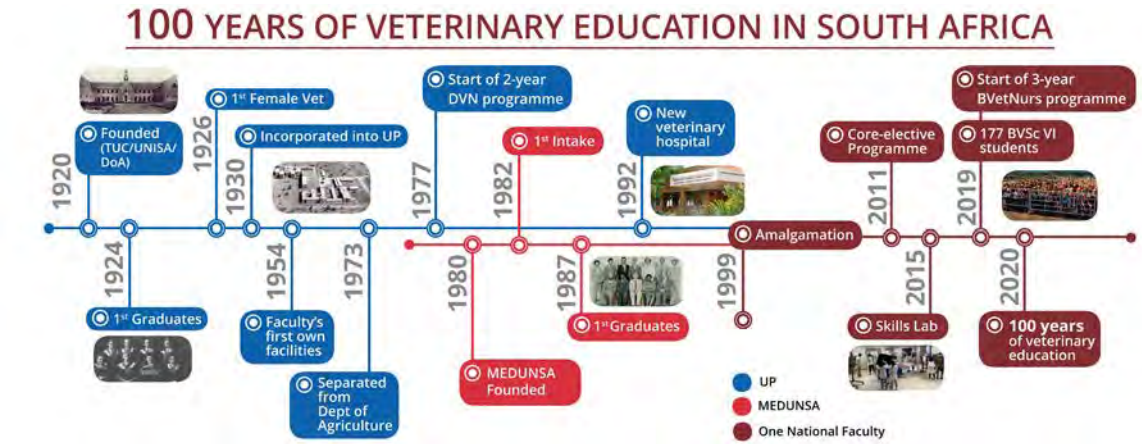
It all started about 130 years ago, with three major events: a good book, lost luggage and an unfortunate farm accident. These events led to the launch of the Faculty of Veterinary Science as they paved the way for Professor Sir Arnold Theiler's opening of the faculty and his becoming the first dean.

- A good book: As a teenager, Swiss veterinarian Arnold Theiler loved a book titled *Travels into the Interior Parts of Africa by Way of the Cape of Good Hope in the Years 1780–1785*. According to his biography, it made him want to travel to South Africa. Not surprisingly, when he was informed that there was a need for a veterinarian in the 'new Transvaal', he jumped at the opportunity and headed to Johannesburg.

- Lost luggage: On his trip here, his luggage and equipment were lost in Cape Town, leaving him practically destitute. As a result, he had to settle for a lower-paying job as a farm hand on the farm Irene in the interim.

- An unfortunate farm accident: A major change in his life came about when, within a few weeks of starting the new job, he lost his hand while operating farm equipment. The accident put an abrupt end to any future he may have had as a field veterinarian. As a result, he took a different path.

This different path was initiated when he asked to attend a local meeting on the smallpox outbreak in Swaziland in 1893. Here, the dire situation was discussed as the vaccine was not available and the disease threatened the survival of the young city of Johannesburg. At this point, Theiler made it known that he knew how to make the smallpox vaccine, which he had learnt as a veterinary student. This gave rise to the Daspoort Laboratory, Theiler's first vaccine factory. In later years, when more space was needed, it gave rise to the Bacteriology Laboratory on the farm Onderstepoort, where the faculty is situated today.



Timeline of the Faculty of Veterinary Science

According to Theiler's first report (which later became the first issue of the Onderstepoort Journal of Veterinary Research), the area had a railway station, was on a major route, was next to the Apies River and was an area rife with African horse sickness, tick-borne diseases of cattle and numerous poisonous plants. While Theiler's initial work at Onderstepoort was to find innovative treatments in the form of vaccines, facilities were already built for student training by 1908. The Transvaal University College (TUC, later to become the University of Pretoria) was chosen as the hosting institution because of its location near Onderstepoort. When initial discussions had started towards the training for a degree in Veterinary Science, the programme was housed in the Faculty of Agriculture of TUC. In subsequent discussions, Theiler agreed to train veterinary students on condition that he was made dean of the faculty and director of the bacteriology laboratory. In 1920, he took office and admitted the first eight veterinary students into the BVSc course, which became the second medical-related degree offered in South Africa, two years after the University of Cape Town admitted the first MBChB student.

The following were listed as the aims of the faculty in Theiler's first official speech as dean:

1. To allow for veterinary training to be adapted to the needs of the stock-raising community and to manage important diseases unique to South Africa
2. To ensure that South Africans had the opportunity to study to be veterinarians without having to travel outside of the country
3. To ensure that a knowledge of South African conditions, both social and economic, would underpin training
4. To allow scientific research in the field to develop more freely as this would be linked to a South African Veterinary College that was equipped with adequate facilities to support education and research
5. To ensure that the school would investigate diseases peculiar to the country and thereby contribute to scientific solutions to tropical diseases in general.
6. To train veterinarians who could fit into any country, be it in Africa, Egypt, India or the West Indies.

The Arnold Theiler building on the Veterinary Science Campus at Onderstepoort

Theiler went on to end his speech with the following interest statement: 'I wish to utter a grave word of warning to those who consider the study of veterinary science to be a lucrative investment. I appeal to the young South African as the future veterinarian who above everything else must have the welfare of the country at heart. While our science does not lend itself to the accumulation of wealth, it offers all prospects for distinction not only for our own country but in the scientific world at large'.

The Faculty of Veterinary Science has lived up to the expectations of its founder by becoming a leading veterinary school and research centre in veterinary science in Africa and globally. Within its first century, the faculty graduated 5 004 veterinarians and became officially internationally accredited in 1948. Furthermore, the faculty was one of the pioneering institutions in the training of veterinary nurses, with 1 170 veterinary nurses qualifying between 1978 and 2019. Apart from this, the faculty initiated postgraduate programmes for veterinary specialists in the late 1950s, and had trained 304 veterinary specialists by the end of 2019. Many of the current 22 specialist fields are internationally accredited. In terms of research, the faculty played an enormous role in providing solutions for South African and African veterinary problems with over 7 300 scientific research articles published in peer-reviewed journals during the past century.

Quick facts

The Faculty of Veterinary Science is situated on a satellite campus of the University of Pretoria, located in Onderstepoort, 17 km north of the Hatfield campus.

The first class of eight veterinarians graduated in 1924. For 25 years, graduations stayed low, until 1948 when 21 veterinarians graduated. From 1966 until 1978, around 40 veterinarians graduated per year, and from 1980 to 2008, an average of 90 veterinarians graduated in the country annually. From 2009 until 2017, this increased to 125 and is due to stabilise around 175 in the immediate future, with a record number of 170 in 2019. The first female veterinarian graduated in 1927. The proportion of female veterinary graduates was 68% in 2020.

International accreditation was obtained for the BVSc in 1948. The faculty is currently accredited by five international accreditation authorities.

Qualification	First year offered	1920—2019	2015—2019
BVSc – Bachelor of Veterinary Science	1924	5 004	719
Doctoral degree (DVSc/ PhD)	1930	272	91
MMedVet – specialist degree	1964	304	34
DVN – Diploma in Veterinary Nursing	1978	1 170	207
Scientific peer-reviewed papers published		7 300+	1 035

In 1980, a second veterinary faculty was established at the Medical University of South Africa (Medunsa), but the two faculties amalgamated in 1999 to re-establish a national Faculty of Veterinary Science. After amalgamation, staff and student transformation to include African, coloured and Indian ethnicity was initially slow, with good progress recently.

The Vice-Chancellor and Principal, Professor Kupe, visiting the campus for the centenary celebrations

The Vice-Chancellor and Principal, Professor Kupe, visiting the campus for the centenary celebrations

Students show Professor Kupe around the facilities

The Dean of the Faculty of Veterinary Science, Professor Vinny Naidoo, speaking at the centenary celebrations

Dean of the Faculty of Veterinary Science Professor Naidoo being congratulated by Vice-Chancellor and Principal Professor Kupe at the launch of the Wildlife Clinic

The new Wildlife Clinic, an expansion of the Onderstepoort Veterinary Academic Hospital at the Faculty of Veterinary Science

How the faculty sees the next 100 years:

- As in the founding aims, the faculty will continue to support and develop the local farming industry. Through organised agriculture, the faculty can become a driving force behind the South African economy. Through better food production, we shall not only have a healthier nation, but the faculty's contributions can help to build up foreign reserves through trade with international partners.
- As we move into the fourth industrial revolution, the faculty is ready to move forward and embrace technology and find innovative ways to incorporate technology into how we practise.
- The faculty has spearheaded the advancement of specialist care of animals in the country over the years. As we move forward, we have plans to advance the academic hospital, so that we move from tertiary to quaternary care.
- The faculty will ensure that all veterinary professions are supported by cutting-edge developments in science, be it through epidemiological studies, new vaccine development or big data science.
- Lastly, we want to be a school where undergraduates get the best possible clinical training that allows for outstanding patient care, be it at a local community clinic or a tertiary care facility.

As the dean, Professor Vinny Naidoo stated during his address at the faculty's centenary celebrations in February 2020: 'To our staff and students here today, I look forward to entering into the next century of veterinary education with you. Never before has our future looked so bright'.

Opening of the Onderstepoort Wildlife Clinic

The Onderstepoort Wildlife Clinic opened its doors in March 2020, becoming the first of its kind in South Africa. The clinic forms part of the faculty's recent establishment of the wildlife centre and represents the clinical component for high-level patient care, student learning and research. The clinic consists of two buildings: the Herbivore and Carnivore units. Seven-year-old tiger Sombra was the clinic's first patient in the Carnivore Unit. Several other animal species have since been treated in the facility, which officially forms the wildlife wing of the Onderstepoort Veterinary Academic Hospital (OVAH), now offering specialist services to our wildlife heritage, which includes some endangered species. The clinic is unique owing to its association with the OVAH, providing direct access to the high-end diagnostic and therapeutic services and equipment of the hospital's specialist units.

The 'War Room' in action during an online assessment in RUM 511: Mr Velly Nkosi (near left), the faculty's instructional designer; Dr Rebone Moerane, HoD: Production Animal Studies; Ms Sandra Wilkinson (at the back), departmental administrator; Dr Takula Tshuma (seated, right), module coordinator for RUM 511; and Dr Martin van der Leek (standing), senior lecturer

At the opening ceremony, Dr Paul van Dam, Director of the OVAH, stated that: 'Our undergraduate veterinary students are now exposed to a wider range of wild animals, not just with regard to diseases and treatment, but also in terms of feeding and overall management of the animals'. He noted the research opportunities into these animal species to promote improved support to the wildlife and conservation industries.

Professor Vinny Naidoo, the Dean of the Faculty, elaborated: 'This facility also represents a new way of training veterinarians. I foresee that, through the skills that we will be able to develop and master in this new facility, we will make wildlife hospital care a common standard of care for the South African wildlife patient. It may be a dream, but not too far back, equine hospitals in South Africa were considered a non-reality, with many operations being undertaken on the grass. Yet today, we have well established equine hospitals in the country'.

Vice-Chancellor and Principal Professor Tawane Kupe added the following at the opening of the clinic: 'The opening of this world-class facility that serves the wildlife sector and industry will be marked as a historic day for the Faculty of Veterinary Science of the University of Pretoria. The establishment of the new Wildlife Clinic also coincides with the faculty's 100th year of existence, which to me is quite symbolic of our progress. I am proud of the expertise of our wildlife vets who have built a reputation for excellence worldwide. Not only are they called on for their expertise in wide-ranging areas, but our vets also play an important role in the conservation of endangered wildlife species'.

Remote Support during Online Assessment in the 'War Room'

Staff and students raised concerns related to the implementation of online assessment during 2020. Students experienced increased anxiety caused in particular by connectivity issues. Lecturing staff were concerned about the reliability of online assessments compared to traditional invigilated assessments. As a result, the faculty created online assessment guidelines. The guidelines ensured the best possible assessment experience for students in clickUP, while maintaining the reliability of assessment under the somewhat different circumstances.

These guidelines included the need to synchronise online assessments to improve the faculty's ability to monitor student access and progress during the assessments. The faculty therefore presented all semester tests on Friday mornings and opened an assessment for a limited time to ensure that all students started with the assessment at the same time. When Eskom announced load shedding during lockdown, this resulted in even more uncertainty, owing to the dependency on an uninterrupted power supply for access to the Internet, particularly in rural areas where a significant proportion of the faculty's students were staying during lockdown. This required some assessments to start early in the morning when the electricity network and Internet were still relatively stable.

As part of the implementation of these guidelines, the faculty established a 'War Room' support structure on the Onderstepoort campus during the online assessments. The 'War Room' was attended by the faculty's instructional designer, Mr Velly Nkosi, and their computer-based assessment support officer, Mr Mark Sias (from the Department for Education Innovation), as well as the IT laboratory manager, Mr Dewald Maartens, and the Deputy Dean: Teaching and Learning, Professor Dietmar Holm. Heads of departments, module coordinators and administrative staff were given the option to attend the 'War Room' face-to-face or virtually. This strategy enabled staff to keep a close eye on student progress, and immediate support could be given to students even if this sometimes required a phone call to the student to resolve obstacles. The combined skills and proximity of the attending team were invaluable, especially during large assessments. The 'War Room' initiative proved to be a successful intervention to alleviate anxiety for students as well as lecturing staff. Everyone knew that there was a team of experts monitoring the assessment carefully and that they were able to make immediate decisions to ensure that the quality of assessment was maintained.

The Student Voice: Longitudinal Research into Student, Graduate and Employer Perceptions in Veterinary Sciences Education

The Faculty implemented a longitudinal survey in 2009 to measure student, graduate and later also employer perceptions of the BVSc and DVN (and later BVetNurs) professional programmes. Whereas this is a normal requirement for accreditation purposes, the faculty requested that the Department for Education Innovation further interrogate the data obtained over a decade (2009–2019) by looking at trends of perceptions within cohorts of students (following a cohort through the programme) and also investigating trends over a period of time at the same stage of the programme. The aim of the ongoing research is to inform decisions in the faculty regarding undergraduate programmes and curricula, and, as such, it has resulted in a significant impact over the years. Examples include the introduction of the BVetNurs three-year degree programme, replacing the previous two-year Diploma in Veterinary Nursing (DVN); the restructuring of the BVSc curriculum, including the significant reduction of credits; and the introduction of a more structured and gradual clinical skills training programme.

The specific goal of the study, since its inception in 2009, has remained to gauge information about:

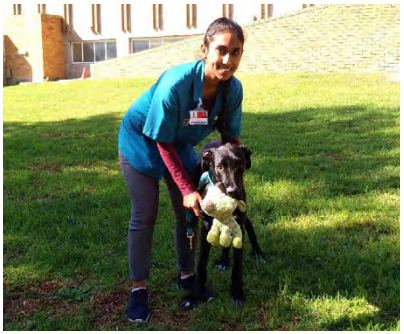
- the pre-knowledge of students regarding the BVSc degree and equivalent veterinary nursing programme;
- the learning experiences of students in different year groups;
- student expectations of the specific professional career;
- the needs for student support and guidance while studying;
- positive and negative factors of their learning experience;
- the value and applicability of the curriculum;
- future plans of final-year students, and
- sufficiency or insufficiency of training to practise the specific profession.

The methodology of the research includes a qualitative and quantitative approach through a questionnaire that is occasionally updated based on previous responses. Employers have been surveyed to determine their perceptions of the quality of the undergraduate programmes, to triangulate the responses by students and graduates. Overall, response rates have been very high, ranging between 70% and 97%. Average response rates have increased with increasing year level within the undergraduate programmes, possibly indicating students' increased interest in the quality of their education as they progress through the programmes.

Students, graduates and employers have all remained positive about their perception of the world-class standards of the undergraduate training programmes offered by the faculty, with a small deviation after the introduction of the current six-year BVSc programme (transitioning from the 3 + 4 year two-degree programme, which was terminated in 2015).

A need to look after the well-being and welfare of animals is significantly increasing as a reason for students to pursue a career in the veterinary sciences, whereas decreasing consideration is given to a combination of medicine, biology, animal science and agriculture as a reason for their career choice. Regarding students' expectation of their professional career, an increasing trend has been detected in students expecting hard work and long hours, but also an increasing reference to their social responsibility regarding community upliftment and education.

In response to the restructuring of the curriculum, a decreasing perception of excessive workload and a lack of practical experience has been cited by students responding to the survey over the past decade. More awareness of research by implementing a structured research project in the final year of the BVSc programme, and by implementing the BVetNurs degree programme, which opened postgraduate opportunities for students, resulted in a significant increase in students' future considerations for postgraduate studies.



A final-year veterinary student involved in clinical training in the Onderstepoort Veterinary Academic Hospital

Students at Hammanskraal

Mamelodi Campus

Mamelodi Campus accommodates the extended curriculum programmes (ECPs) for the Faculty of Natural and Agricultural Sciences and the Faculty of Economic and Management Sciences, among other community-based programmes and facilities. It was possible to offer half a semester of face-to-face learning before the lockdown began. The challenges brought about by the pandemic were daunting for all teaching staff at the University but demanded additional responses to meet the needs of students registered for ECPs. The uncertainty created by the COVID-19 lockdown in 2020 required rapid, innovative adaptation and execution of teaching and learning activities.

Student-Centred Stakeholder Engagement and Data-Based Decision-Making

Stakeholder meetings were held every fortnight to maximise student success in the unprecedented situation created by the pandemic. People involved were the Head of Academic Programmes (HoAP) and the module coordinators, the faculty student advisor team, the manager of campus operations and the Dean: Mamelodi Campus. All new developments and decisions taken by the Executive were efficiently communicated to all parties and implemented speedily. During these meetings, module coordinators reported on challenges and successes within each module. Advisors and data analysts shared their reports as captured from the Mamelodi referral system (M_RS), a data analytics system implemented in 2019 that enables flagging of at-risk students and provides easily accessible information on student performance. At each meeting, the HoAP gave updates on the weekly teaching and learning meetings called by the Vice-Principal: Academic, Professor Duncan, and attended by the Deputy Deans: Teaching and Learning and relevant directors, at which data on the undergraduate student online engagements were shared per faculty. ECPs' data were filtered from the reports of the Faculty of Economic and Management Sciences and the Faculty of Natural and Agriculture Sciences, whose students were part of the ECPs.

One hundred and forty-three (143) students were identified as at risk and monitored on the M_RS system until the end of semester one. These students applied for loan laptops offered by the University, and some later applied to return to residence as part of the 66% allowed to return towards the end of the first semester.

Some students were allowed on campus under lockdown regulations

The 19 students who could not return to residence, and who had connectivity issues, were helped via tele-tutoring, a drive managed by the Department for Education Innovation. Five students out of the 19 who were placed on tele-tutoring performed very well, passing all their registered modules, while 10 students failed between one and five modules.

A second list of 33 students, referred to as 'indigent students', was established. These students were affected by problems relating to issues such as connectivity, lack of appropriate technology, electricity, and home circumstances not conducive to studying online. It was not possible to assist these students despite all the interventions in place, so an alternative was found. The Mamelodi advising team was in contact with these students during 2020. In consultation with the module coordinators, Deputy Deans: Teaching and Learning of the faculties of Economic and Management Sciences and Natural and Agricultural Sciences, the HoAP and the Dean: Mamelodi Campus, it was decided to accommodate the students as follows:

- For students who had documented connectivity, device access and other challenges, a once-off UP Mamelodi Repeat Concession (MRC) would be granted with very strict conditions. This was an exception to the rule as ECP policy does not allow Mamelodi students to repeat the year.
- Students who failed fewer than five of their modules after the November examination were assisted to prepare adequately for special examinations. To this end, module coordinators reopened all first-semester modules online from November 2020 and kept the second-semester modules open until the last examination had been written in January and February 2021.

It was hoped that this proactive, once-off accommodation to enable students to write special examinations and to repeat failed modules and the academic year would go a long way towards demonstrating the University's understanding of the challenges faced by indigent students during the national lockdown. Of the 33 indigent students, only 12 accepted the offer to repeat failed modules on Mamelodi Campus as their conditions had improved. The special examinations ran smoothly but the percentage performance of most modules improved by less than 2%, except for Language, Life, and Study Skills (LST 133) (2,5%) and Basic Business Mathematics (BAM 133) (6,3%).

Teaching, Learning and Assessment

Staff Development Opportunities for Online Teaching and Learning

Comprehensive staff development was required to equip academics for the challenges of emergency remote learning. Most academics had already attended a number of e-learning courses offered by the Department for Education Innovation over the years as they prepared to complement their contact teaching with online elements in a hybrid approach. However, fully online learning was a different situation, and many academics felt the need for additional knowledge and skills. The list of online courses offered by Education Innovation was shared with all teaching staff and many signed up for them. In addition, the entire staff attended two courses as a team: 'clickUP Grade Centre' and 'Developing study guides'. Education Innovation has since developed a study guide template for Mamelodi Campus.

Mamelodi staff were also encouraged to attend when relevant events organised by either Economic and Management Sciences or Natural and Agricultural Sciences. Both faculties maintained a rich teaching development culture during lockdown, moving from brown bag lunches to webinars.

A webinar was organised in July with invited local and overseas guests to share their experiences and challenges, as all adjusted to the new normal of off-campus teaching and learning.

Pedagogy during Emergency Remote Teaching

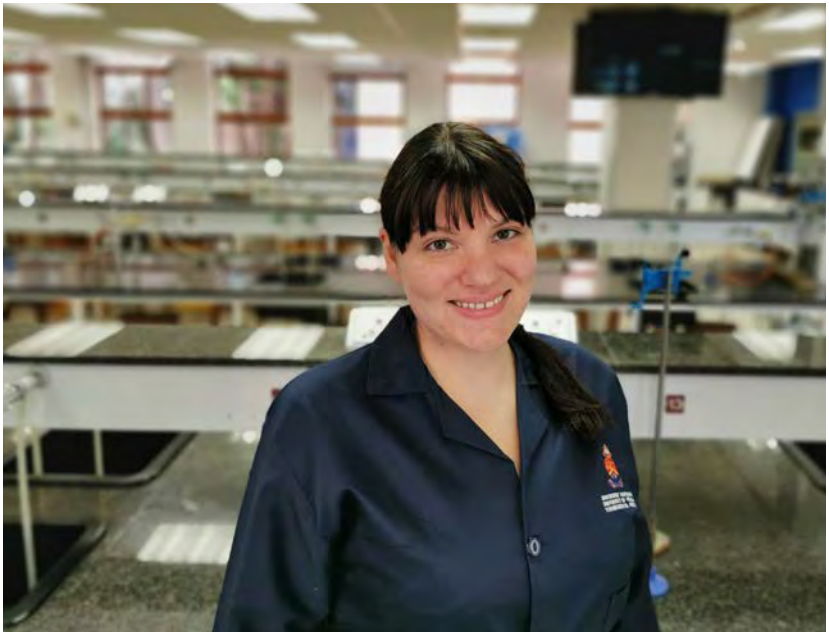
Mamelodi module coordinators and their teams made use of Blackboard Collaborate, Google Hangouts, narrated PowerPoint presentations, clickUP quizzes and weekly Q&A sessions to conduct classes for students during lockdown. In addition, all lecture sessions were recorded and made available to students on clickUP. Discussion boards were not used as it was found that students preferred communicating by email and WhatsApp group chats. Moreover, notes, solutions to recommended problems and memoranda of all tests/worksheets/assignments, worked examples with steps, YouTube videos for practicals, unit summary videos and preparation videos were loaded on clickUP for students' use.

Lecturers in modules with practical components (ie, Chemistry (CMY), Physics (PHY), both statistics modules (STK and WST) and Academic Information Management (AIM)) opted for online practicals on clickUP. In some instances, online practical sessions using the McGraw Hill platform were used (Molecular and Cell Biology (MLB)) or there were no practicals but students were given assignments based on the actual practical classes. Only one module (Business Management) had a community-based project component. In this case, a contingency project was put in place to minimise physical engagement with the community.

Despite the difficult circumstances of teaching and learning, two lecturers were nominated for best lecturer of the year by NAtHouse (the official student house of the Faculty of Natural and Agricultural Sciences). The winner was Christine Mundy. She speaks of her career and her inspirations:

'I have the privilege to teach first-year chemistry modules for the BSc Extended Curriculum Programme on the Mamelodi Campus, and each of my lectures begins with a picture or a story that will make chemistry more memorable in the minds of my students. I was appointed in the Department of Chemistry as a young lecturer. During my time as a student at the University of Pretoria, the periodic table stood as a large and appealing vista in the chemistry building—one of the reasons that I fell in love with chemistry. Over time, the periodic table changed and was removed when the building was renovated. At the start of 2020, a small team from the Department of Chemistry reapplied the new and improved periodic table to the large, glass-brick wall to inspire new cohorts of students. I was passionate about this project as I strongly believe in the role a story, facts, history and images can play in motivating students and facilitating the long-term growth of knowledge.'

Four LST staff received permanent appointments, improving their stability on the campus.



Christine Mundy, award winner

Lack of connectivity at home affected many students

Assessing Learning Reliably and Fairly

Students wrote two major semester tests and an examination in the second half of the year, except for the mathematics modules (BAM, WTW 133/143/144) and the two academic information modules that were run in continuous assessment mode. Students wrote three major tests, usually complemented by assignments.

There was a noticeable increase in performance for the pre-calculus module in semester one, which can be attributed to the introduction of the Basic Business Mathematics module, which effectively removed students targeting non-numeric BCom degrees. In the previous years, all students on Mamelodi Campus took the pre-calculus module. The decision to differentiate between the students was student-centred, giving each group of students the opportunity to study only what they needed to progress in their degrees. However, performance in the rest of the first-semester modules appeared to be equal to or better than performance in previous years. This trend seems to be echoed in the second-semester modules. However, it should be borne in mind that there might be indigent students who were not able to write examinations.

The main problems reported by students were Internet connectivity and technical issues. Many students missed their scheduled online activities and reported the following challenges: lack of data, computer access and load shedding. To mitigate load shedding, lecturers reset and extended assessment time once students had submitted adequate supporting documents that included a third-party confirmation. Students who failed to write examinations owing to load shedding could write supplementary examinations. Dishonesty during examinations was reported for a limited number of students.

By the time the second semester began, the academics were better prepared: some lecturers changed their style of setting questions, using higher cognitive level questions such as scenario-based questions or more integrated and longer questions. For modules that had a database of questions, each student received a different set of questions with randomised answers. The testing system did not allow students to backtrack during assessments.

Advising during Lockdown

Advising is usually a face-to-face activity, providing maximum support to students, as individuals or in group sessions. At a minimum, advisors help students with goal setting, time management, study skills, and test and examination skills. In reality, students approach advisors with a range of problems, some of which have to be referred.

During the lockdown, the advising team presented three series of online study method workshops for students. These were deemed important as lecturers found that students tended to submit assignments at the last minute. There were three live online workshops and one online video on examination preparation that could be watched by students at any time. The live online workshops were fairly well attended with 276 students attending the one on time management, 269 attending the one on study skills and 170 attending the one on stress management. The advising team made use of Skype, Google Meet, WhatsApp messages and calls, cell phone calls and emails for their sessions with students.

A Case Study of the Molecular and Cell Biology Module, MLB 133

An online survey was conducted to assess and obtain a better understanding of the level of access/connectivity of MLB 133 students to devices and the Internet. The data were needed to inform the contingency plans necessary for the successful continuation and completion of the academic year. Out of 335 active students, 65% responded to the survey. The survey showed that 96% of respondents had a smartphone and that most students (77%) always had access to a laptop or desktop computer, whereas 7% had no access. However, either a laptop or a desktop computer was necessary for the successful completion of online assignments, suggesting that 7% of students lacked the minimum requirements for successful participation in the module.

The abrupt transition from blended teaching and learning to fully online remote instruction was extremely challenging, especially for Mamelodi students. Under these circumstances, students were expected to be more independent and pursue self-paced learning. As a result, the modules were revised and structured to diversify the modes of content delivery. A flipped classroom model was adopted and presented as follows:

- Online learning materials: Annotated lecture notes with embedded questions, narrated PowerPoint lectures, chapters in PDF format and the McGraw Hill Learnsmart package served as the main modes of content delivery. As a result, about 90% of the students accessed the online learning materials during the reporting period. However, it was noted that most students accessed the learning materials only when an assessment was imminent.

- Online teaching: Blackboard Collaborate online sessions were conducted once a week, primarily to explain problematic concepts and to clarify misconceptions, rather than repeating lectures. Questions were also posed to learners during the online sessions, aimed at assessing comprehension of the subject matter. Regrettably, the attendance averaged about 50% and did not improve with time. Student reports indicated that synchronous sessions are costly because Blackboard Collaborate is not zero-rated. The poor attendance at live lecture sessions could also be attributed to the availability of recorded sessions, which could be watched at another time (self-paced and at no cost). Another possibility is that students were not prepared for the synchronous sessions. However, good participation by those in attendance was observed.

- Pre-class assignments: These were issued every two weeks and included McGraw Hill Learnsmart, McGraw Hill quizzes, and tutorial questions from the practical and tutorial guide. These assignments were gradable, and students were expected to complete them before lectures. However, many students failed to adhere to due dates, resulting in extension of submission dates in some cases.

- Tutorials: Tutorials were presented every two weeks during the scheduled tutorial slots as Blackboard Collaborate online sessions, where tutors explained some of the challenging concepts and discussed memos for tutorial questions from the practical and tutorial guide. Tutorial tests were issued as online clickUP tests.

- Practical sessions: Three virtual practicals were conducted during the reporting time. Videos were uploaded on clickUP and short tests were then given to students.

- Semester assignment: One semester assignment was issued and submitted via Turnitin.

- Semester test 1: One semester test was issued as an online clickUP test and included objective assessments (multiple-choice questions) as well as short answer questions.

The flipped classroom approach showed that students performed better when self-study was the only option. However, there are students who struggled to adapt to the new model. Students who completed pre-lecture assessments participated during lectures and performed better in formative assessments.

Teaching staff are seeking alternative approaches to assist struggling students in the future. In addition, there were students who failed to complete continuous formative assessments owing to poor connectivity and lack of data, leading to students' concern about the allotted times for online assignments. As a result, submission dates were extended in cases of valid concerns. Connectivity issues and cheating remain the main risks associated with online assessments in online teaching and learning.

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Case Study Methodology

Case studies form part of an engaging teaching approach. The case presents a scenario with a variety of elements a student would encounter in a real-life situation. Students are able to practise higher-order thinking skills such as analysis, synthesis, problem-solving and decision-making. Not only can an individual be actively involved, but a finely crafted case is ideal for group work. Studying the case simulates a decision-making process; it is not the mere replication of information from the course.

Case teaching is a core component of a business school's teaching methodology, as the quality of the students is measured by the quality of the decisions they make. A good case study is one that has a real-life basis and puts the student in the shoes of the general manager who needs to make a decision or choice. Cases are not simply good stories; they provide opportunities to apply theory to real-life problems or dilemmas. They provide practical application of underlying academic theory, and thus straddle the divide between academia and business. GIBS cases are of a high standard and often replace US-based cases with the broader African and South African contexts. As a result, GIBS's cases are used by business schools across the continent and by students in Europe and North America wanting to learn more about doing business in emerging markets in Africa and South Africa. The African context provides additional dilemmas that are rarely seen in Western cases.

In March 2020, the GIBS Case Study Hub contracted with Emerald Publishing to write a series of mini-cases specifically dealing with COVID-19 and the impact it was having on the economy. Emerald Publishing focuses on emerging markets and exploring real-world challenges. COVID-19 presented an opportunity for GIBS to showcase particular and unique challenges we were facing as a country and, more importantly, to provide a series of case studies highlighting not only the challenges, but identifying how agile organisations were able to respond.

GIBS responded immediately and was ahead of most international business schools, many of which were only able to produce their first COVID-19 cases in February 2021. GIBS provided novel and relevant content at a time when the unprecedented pandemic left many looking for

practical solutions.

Following the successful series of mini-cases published in 2020, GIBS has again contracted with Emerald Publishing to deliver a series of shorter case studies (mini-cases) focusing on recovery. The greatest challenge facing business schools is to teach relevant and appropriate content. While the development of new theory takes time, the school is able to produce shorter cases that can be taught in the short-to-medium term. The school provides material to the broader academic community that is both timely and of good quality.

The Learning Practitioner Primer Programme

COVID-19 presented an opportunity to pause and reflect, with GIBS devoting energies to further building capabilities needed in staff and faculty alike. The move towards digital and blended learning methods, in combination with an increasingly competitive business education marketplace, necessitated an upgrade in programme management and coordination skills to ensure that GIBS frontline staff continued to service our customers excellently with a greater depth of understanding of contemporary and blended learning methods.

Developed in-house, specifically for a GIBS context, the Learning Practitioner Primer Programme (LPPP) targeted programme managers and coordinators across the Social Education, Academic Education and Corporate Education divisions. Delivered using a blended learning approach, the course aimed to enhance delegates' working knowledge of learning and learning-solution design in order to influence customer relations positively.

Gordon Institute of Business Science auditorium

LPPP kicked off with 31 delegates in July 2020 and concluded with 24 delegates in November 2020. An overall completion rate of 77% was achieved (one delegate left; one delegate withdrew and five delegates deferred), coupled with an 88% competency rate. On average, participation rates were 82% per learning cycle.

Self-study, asynchronous (learning in the student's own time) sessions provided delegates with a degree of flexibility, with a view towards minimising challenges associated with insufficient time to study owing to workload pressures. Learning cycles were further supported by synchronous (learning together at the same time) sessions to help delegates make sense of the new knowledge and skills.

Delegates were also assigned mentors to further embed and support the process.

An experiential learning model underpinned the programme's design, with each session of learning requiring delegates to move through and complete activities associated with Kolb's learning cycle: namely, doing/having an experience; reviewing/reflecting on the experience; concluding/learning from the experience, and planning/trying out what one has learned.

Activities per cycle included set-up, thought leaders, share and discuss, and feedback and close sessions. Formative and summative assessments were conducted using quizzes, journals and group and individual assignments.

Follow-up modules are planned for design, based upon delegate and mentor feedback, coupled with the new strategic direction of GIBS and divisional needs and capabilities that underpin its implementation.

Enterprises University of Pretoria

'Never let a good crisis go to waste.' – Winston Churchill

Enterprises University of Pretoria (Enterprises UP) offers a range of products to support lifelong learning. Training has traditionally been in contact mode, but more online options have become available in recent years.

The adversities and sudden changes in how we teach and learn under COVID-19 presented Enterprises UP with an unprecedented opportunity to accelerate digital transformation rapidly, resulting in a significant expansion to the scope of online workplace skills development alternatives on offer. Although the products were developed in response to a short-term requirement, alternative modes of delivery will continue to provide more companies and individuals with access to the upskilling and reskilling opportunities offered by the University of Pretoria through Enterprises UP.

Alternative modes of delivery using a blend of synchronous and asynchronous elements were created for more than 180 training courses, which was quite an achievement. During a rapid conversion process, Enterprises UP enabled lecturers and delegates to transition relatively smoothly from traditional face-to-face interventions to online learning. Intensive training was offered to lecturers, combined with the continued back-end support offered by Enterprises UP staff. Training initiatives to ensure successful online delivery were

Tools for e-learning

top priority, and Enterprises UP presented 64 Blackboard Collaborate training sessions attended by 261 lecturers.

In collaboration with the University's Comprehensive Online Education Services (COES) unit, Enterprises UP launched an online course in instructional design tools for e-learning, aimed at empowering education practitioners on how to design learning material with the use of multimedia and technology.

Preparing Your Workforce to Succeed in the New World of Work

Changes in the world of work continue to accelerate because of technological advances, and they were amplified by global events such as the COVID-19 pandemic. For the individual, there is a growing need to maintain employability constantly, which enhances the role and importance of shorter, more flexible learning journeys. For companies, continuing education also presents opportunities to develop a more resilient and effective workforce that is committed to lifelong learning.

Despite pressure on revenues, several companies continued with training agendas and adopted virtual modes of delivery as the new approach to learning and development for staff. Client-specific training interventions (41) were offered online, using a flexible approach to the combination of synchronous and asynchronous elements and incorporating differentiation of the curriculum.

The following are some of the continuing professional learning courses offered in 2020 in collaboration with a variety of clients:

A Virtual Reality Mining Experience for Microsoft

Enterprises UP and UP conducted an Introduction to Mining short course for employees of Microsoft. The course delivered insight and fundamental knowledge on processes pivotal to the mining industry and provided an exclusive experience of virtual reality as a training enhancement tool at the Kumba Virtual Reality Centre for Mine Design situated in the Department of Mining Engineering.

Enterprises UP and CSIR Partner to Flatten the COVID-19 Curve

Enterprises UP and the Council for Scientific and Industrial Research (CSIR) collaborated to present the online course in architectural and engineering approaches to infection control.

This is a niche short course for architects, engineers and healthcare professionals who are actively involved in the planning, design, construction, management and operation of healthcare facilities, correctional facilities, dormitories or hostels in resource-constrained settings. The course provided delegates with excellent insight into epidemiological concerns and risk factors, mechanisms of transmission relevant to the built environment, methods of avoidance and mitigation of risk posed by pathogens such as the novel coronavirus and tuberculosis.

Empowering TVET Students in Hydrogen Fuel Cell Systems

In partnership with the University of Pretoria (UP), Bambili Energy, the Department of Higher Education, Science and Innovation, and the Energy and Water Sector Education Training Authority (EWSETA), Enterprises UP trained technical and vocational education and training (TVET) college graduates in hydrogen fuel cell systems. The training aimed to develop competent, capable and work-ready technicians for the deployment, installation and maintenance of hydrogen fuel cell systems in South Africa and beyond.

Unpacking Ways to Promote and Protect Investments in Africa

Through a collaboration with Cliffe Dekker Hofmeyr (CDH), Enterprises UP launched an online course in the promotion and protection of investment in Africa, presented by the Faculty of Law.

The course aimed to cultivate an understanding of contemporary legal and policy challenges for investments in Africa, including considerations of the investment climate in Africa post-COVID-19, and also examine the impact of the African Continental Free Trade Area (AfCFTA) investment protocol on intra-Africa investment. The online mode of delivery enabled valuable contributions from content experts from as far afield as the United States of America, Kenya and Columbia.

Comprehensive Online Education Services


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UPOnline: Reflecting on Teaching Fully Online in Public Management

UPOnline is a strategic initiative that aims to increase the footprint of the University of Pretoria and to accommodate working adults who want to further their education and opt to do so fully online. In June 2020, the first module of the fully online Postgraduate Diploma in Public Management went live as one of the first two UPOnline programmes.

In the five successful intakes since June 2020, approximately 25 new students joined the diploma every eight weeks. The programme currently has just over 130 fully online students enrolled. With the flexible and accessible nature of the programme, these mature students have performed extremely well, with an average of an 85% pass rate across the modules thus far. Despite the COVID-19 pandemic and the challenges that it brought to traditional teaching and learning, the online students managed to continue with their academic tasks timeously and effortlessly.

Six lecturers in the School of Public Management and Administration facilitated the modules in this fully online programme, together with teaching assistants who helped with the assessments and administration. The lecturers described their experiences as fruitful, rewarding, and a real learning curve. For many of them, facilitating online was a brand new experience. The experience proved to be useful, though, as they report that what they learned from the process of designing and developing their fully online modules assisted them with taking all their other face-to-face modules online during the pandemic. This added advantage allowed them to recognise the value and benefits of online teaching.

The programme coordinator and facilitator of one of the modules, Professor Gerda van Dijk, reflects on her experience:

'While the initial design of the content was challenging, the additional skills I have acquired have proven to be invaluable. I am more comfortable in dealing with unknown circumstances.

I have become a better communicator to my students, since I know my only presence in their learning is heard through what they read, listen to and collaborate on. I have learned to be more specific in my instructions and to challenge my students.

I would previously have prescribed to contact students the format of their assessments. Now I am rather able to specify what I would like to see as an outcome and leave the choice of how they present the information up to them. This has allowed creativity to flow and students to experiment with software/programs they would not have known about.

I find the experience of being a facilitator, rather than a lecturer, particularly liberating and see myself as an equal and active learner, together with my students. I allow for more co-creation of knowledge and appreciate the continuous participation of students.

I do, however, feel removed from my students and cannot put a face to a name. The lack of physical contact remains challenging and, while the students are doing well and the learning promotes self-direction and students pacing themselves (all good principles of adult learning), I do sometimes feel as though the personal relationship that can be cultivated in a traditional contact session set-up is sacrificed.

What I have learned in facilitating an online module:

1. Be available, but be specific and consistent in your availability.
2. Provide continuous feedback on activities and progress.
3. Reply to student concerns, specifically in the first few weeks of contact when the platform is not known to all.
4. Be flexible and accommodating without appearing inconsistent.
5. Keep students focused through weekly communication that they can rely on—give them guidance, but do not prescribe.
6. Have Collaborate sessions, although not necessarily every week, but a check-in is always appreciated and goes a long way to making sure students stay on track and motivated.'

Professor van Dijk and her colleagues were supported by Dr Kimera Moodley in Comprehensive Online Education Services.

'When the flower blooms, the bees come uninvited' (Ramakrishna)

The Postgraduate Diploma in Public Health was one of two fully online programmes offered at the University of Pretoria. The programme represented a collaboration between the School of Health Systems and Public Health, Comprehensive Online Education Services and Higher Ed Partners South Africa (HEPSA).

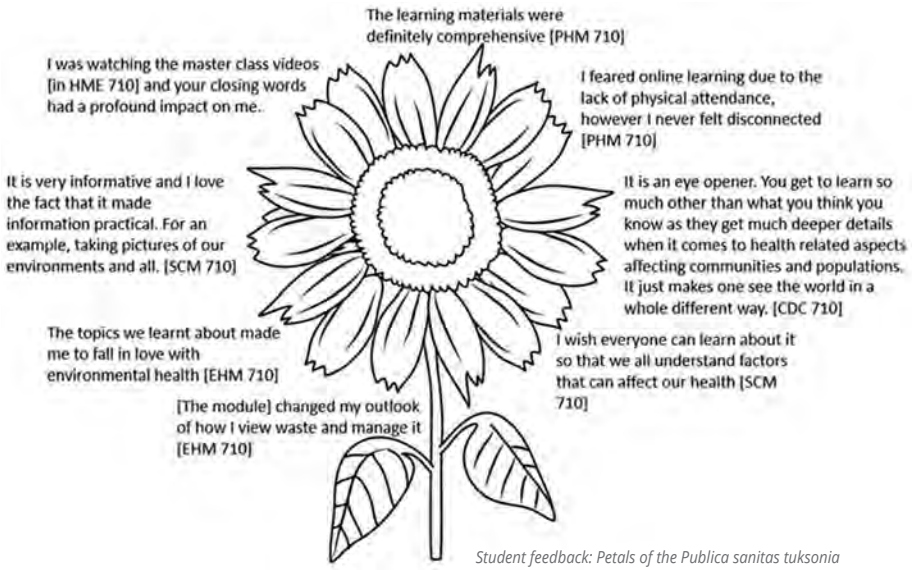
This partnership planted an educational 'demonstration arboretum' that, without all the elements working in harmony, would not have resulted in the nurturing of the approximately 700 students currently in the programme. The 'constant gardeners' for the programme were Professor Liz Wolvaardt (Public Health) and Dr Mari van Wyk of Comprehensive Online Education Services.

The demonstration arboretum had several key features.

- First, there was a dedicated team at UPOnline who—among other activities—managed the enquiries, supported the applicants, prepared the selection documents, communicated with students and managed all administrative queries. Without this backbreaking work, the ground (work) would never have been prepared.
- Second, the partnership with HEPSA provided, among other things, the constant hydroponic solution that contained the marketing and recruitment nutrients that were needed for germination.
- Third was a supportive climate for this budding endeavour.

The product of all this effort is the *'Publica sanitas tuksonia'*—a rare breed of perennial sunflower.

Please read some of the in vivo quotes about student growth in the petals of *Publica sanitas tuksonia* and click on or scan the QR code in the middle to take a peek.



Student feedback: Petals of the Publica sanitas tuksonia

Re-Imagining the University

We never imagined that a global pandemic would lead to the lockdown of society, including higher education institutions. For at least two decades, some educational practitioners and researchers, private providers, technology companies and publishers had been imagining and developing more technology-enhanced strategies to improve student learning. Traditional universities were generally slow to follow suit, although there were early adopters. The lockdown became a catalyst, pushing lecturers to find solutions to the problems created by pivoting from a predominantly contact environment for teaching, learning and assessment to one that was almost completely online. It was not an easy journey but now many cannot imagine going forward without including some of the technologies to enhance their future contact pedagogy. Emergency remote teaching has brought about a tipping point in the use of educational technologies.

In a survey conducted at the University, lecturers reflected on how technology improved both their teaching and assessment practices. For teaching, they became more proficient in using the tools already offered by the learning management system. However, they also became more knowledgeable about other technologies that helped them to interact with students or simulate practical work. Many noted greater student engagement around the subject matter by all students, not just the few who usually responded in class. The online environment also enabled tracking of students who were not engaging so they could contact them and resolve problems. In terms of assessment, most lecturers adopted the strategy of more continuous, shorter assessment opportunities, which proved to be good for keeping students on track. They also developed assessment that required application and higher-order thinking skills. Some faculties explored new marking tools, which they will


Photo by Leon on Unsplash

continue to use post-pandemic because they saved time.

Students liked the opportunity to have access to pre-recorded lectures, narrated PowerPoints and recordings of synchronous interactions as they could go back and review to improve their grasp of the subject. They also enjoyed some of the other technologies that lecturers introduced to simulate what would have been practical classes. Most of all, they felt reassured by the contact afforded by synchronous communication or even discussion boards as they were worried about their studies and isolated at home or in places not conducive to study.

Students, parents and lecturers alike value a traditional university experience. At its best, a university is a community of scholars to preserve, grow and disseminate knowledge, to the public good. However, being on campus provides students with opportunities for holistic rather than just intellectual development. In classrooms, practical spaces, tutorials and self-organised groups, they bounce ideas off one another and learn to articulate their questions and their thoughts quickly and clearly. In a supportive environment, they learn to debate, critique and create knowledge and be critiqued in turn. In cultural and sporting activities, they learn the value of teamwork and develop interests and networks. Many have opportunities to become student leaders. They have opportunities for work-integrated learning, community service, internships, employment on campus, attendance at career days and meetings with employers, and other activities that develop work readiness. They have access to Wi-Fi, study spaces and computer laboratories as well as other spaces to study or socialise. Health services are available on campuses. Some have access to residential facilities. Being 21st-century students, they want technology included in their learning experiences, but they also want access to lecturers, fellow students and facilities—what they would term 'student life'.

For academics, direct contact with students is part of the value proposition of being a lecturer and researcher. They enjoy getting to know the students and nurturing their intellectual and professional growth. They have colleagues who share their interests and stimulate their thoughts. Technology and access to the Internet and Wi-Fi matter to them as well. They have opportunities to attend events where they can continually hone their teaching and assessment skills as well as their disciplinary knowledge.

Campuses are not likely to re-open fully in 2021 but the University will continue to enhance its ability to teach and assess with technology and develop its students with access to technology, student support services like the library, advising and counselling, as well as learning opportunities. When classes can finally resume safely, we shall truly be able to say that we are using not just a hybrid approach, but technology-enhanced teaching and learning.

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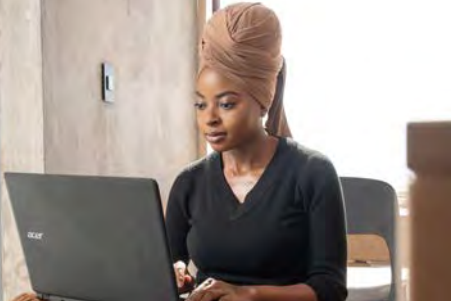
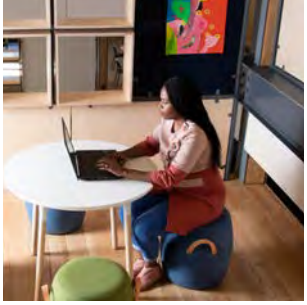


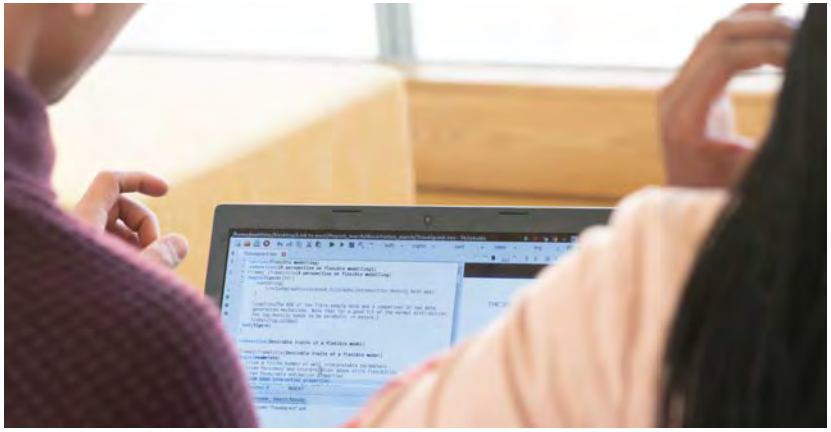


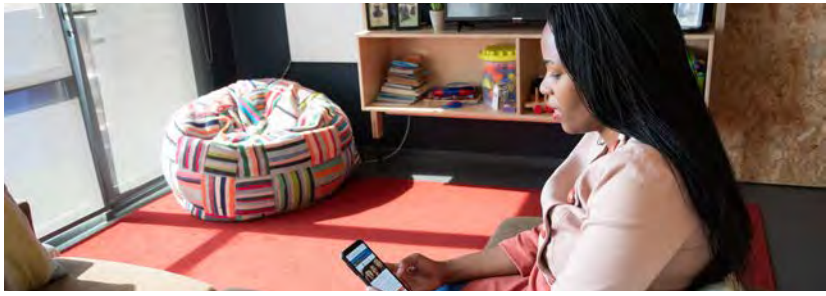

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