2021

Teaching and Learning

Review

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

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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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Foreword by Vice-Chancellor and Principal

Professor Tawana Kupe

Professor Tawana Kupe

Curriculum transformation was a key focus in 2021. In its broadest sense, curriculum encompasses planning

- what we teach, in terms of the state of the art in each discipline or field as well as our local, regional and national contexts;
- how we teach it to facilitate student engagement and coherent learning, using various delivery modes;
- how we assess if students have achieved the outcomes, and
- how we review and revise curriculum processes rigorously as part of reflective practice.

In 2021, University relaunched the Curriculum Transformation Framework. Each faculty and the SRC reflected on the progress since 2017 and how to move the transformation initiative forward. The series of discussions culminated in the faculties submitting their 2022 plans for curriculum transformation.

Teaching delivery continued mostly online. While 2020 saw lecturers scrambling to master online environments and provide students with an equivalent experience to on-campus interaction, 2021 was marked by a sense of maturity and creativity in online spaces. Lecturers explored new platforms. They discovered that some of their new online practices would work well to engage students once they were back on campus. We thus look forward to an enriched hybrid approach as the campuses open up for student attendance at classes.

In discussions on the reimagined university, including at the Senate conference, certain trajectories were identified, influenced by the impact of technology and the fourth industrial revolution on education and on the workplace, which will in turn have an effect on what and how universities teach. We need to make this a virtuous circle with benefits to higher education, society and each student.

Professor T Kupe

April 2022

Foreword by Vice Principal: Academic

Professor Norman Duncan

Professor Norman Duncan

Firstly, allow me to express my gratitude to our faculties, faculty Teaching and Learning Committees, Deputy Deans: Teaching and Learning, and lecturers for the many ways in which they are giving expression to the University's commitment to excellence in teaching, as well as their contributions to the many teaching innovations reflected in this teaching review. I also commend them for their willingness to review and revise our teaching practices constantly.

Many will agree that it is imperative at this juncture to review our approaches to teaching and learning in higher education—not only because of our ongoing experiences with the impact of the COVID-19 pandemic but also because of the significant changes the world has undergone in the three-odd decades preceding the pandemic and the far-reaching technological advances (particularly in the domain of educational technologies) we have witnessed. As an aside, I believe that the predominant approaches to teaching and learning in the higher education sector in many parts of the world were becoming increasingly dated until the reality shock occasioned by the pandemic. In many respects, the pandemic hastened changes in the sector that could have taken place earlier.

I now wish to turn to an excerpt from a book by historian Yuval Noah Harari titled '21 Lessons for the 21st Century'.[1] In the main, the book, which was published in 2018, focuses on the here-and-now of the human condition and the possible futures of human societies. This last element intersects significantly with one of the preoccupations of many in the higher education sector over the past decade or two: How does one provide an education that will adequately equip graduates for the future?

In the first paragraph of Chapter 19 (or Lesson 19) of this book, Harari (2018) states: 'Humankind is facing unprecedented revolutions, all our old stories are crumbling and no new story has so far emerged to replace them' (p 259).

1 Harari, YN. (2018). 21 Lessons for the 21st Century. London: Jonathan Cape. Also see https://www.wired.co.uk/article/yuval-noah-harari-extract-21-lessons-for-the-21st-century.

One such story or narrative pertains to education and the future of work, as well as the assumed distinct sequential phases in the human lifespan, particularly in relation to education and working. For a very long time in human history, Harari (2018) argues, the human lifespan was generally seen to be divided into two discrete but complementary phases:

> A period of learning followed by a period of working. In the first part of life you accumulated information, developed skills, constructed a world view, and built a stable identity … In the second part of life you relied on your accumulated skills to navigate the world, earn a living, and contribute to society (pp 263–264).

This narrative, Harari argues, is rapidly 'coming apart at the seams' and will soon be obsolete—largely because of the exponentially accelerating technological advances the world is witnessing, as well as the ever-increasing length of the human lifespan, which will make life-long learning and skills acquisition increasingly vital.

Various other narratives related to education are increasingly also being shown to be devoid of merit. The following examples of such narratives come to mind: it is only when students are taught in contact mode that learning truly takes place; if an exceptional lecturer presents an exceptional lecture, all the students attending the lecture will benefit from it and will benefit in similar or identical ways.

Harari (2018, p 259) continues:

> How can we prepare ourselves and [the next generation] for a world of such unprecedented transformations and radical uncertainties? A baby born today will be thirty-something in [the 2050s]. If all goes well, that baby will still be around in 2100, and might even be an active citizen of the twenty-second century. What should we teach that baby that will help him or her survive and flourish in the world of 2050 or of the 22nd century? What kind of skills will he or she need in order to get a job, understand what is happening around them and navigate the maze of life?

While I am generally fascinated by attempts to predict what is likely to happen in the future, and while I do believe that we can use the probabilities identified in research-informed projections about aspects of the future to make decisions about what and how we teach, I nonetheless wish to underscore the caution articulated by Harari (2018, p 259) in response to the questions contained in the excerpt above. He observes:

> Unfortunately, since nobody knows how the world will look in 2050 … we don't know the answer to these questions. Of course, humans have never been able to predict the future with accuracy. [And] today it is more difficult than ever before because, once technology enables us to engineer bodies, brains and minds, we can no longer be certain about anything—including things that previously seemed fixed and eternal.

Nonetheless, as Laura Bridgestock (2021, np)[2] notes:

> While it's impossible to predict what the teaching and learning experience at universities will look like 50 years from now, the current landscape certainly seems to suggest that change will be a constant factor, and that educators will be challenged to think beyond traditional models if they want to keep pace.

She argues that models of instruction that are best suited to our times, as well as the future, are those that prioritise student-centred and enquiry-based teaching, favour hybrid and flexible engagement, and, moreover, allow for increasing levels of AI-inspired, personalised teaching and learning. Of course, greater levels of personalised teaching and learning will enable lecturers to facilitate improved levels of student success more effectively. Furthermore, greater levels of personalised teaching and learning can also ensure that students are better able to control their own learning experiences and pathways, something that is correctly prioritised by our FLY@UP initiative.

It should be noted, as Brown (2019)[3] reminds us, that the notion of personalised teaching and learning has been around since the 19th century. However, it is only now that it can really take off because, currently, there are many AI-enabled technologies that make it so much easier to structure or calibrate teaching and learning in line with the specific needs and competency levels of individual students or groups of students with similar experiences.

There can be no doubt that new technologies have significant potential to increase levels of personalised education or education shaped to the needs of individual students or specific groups of students, which can significantly enrich the learning experiences of students and enhance student success. Importantly, too, these new technologies can significantly broaden access to learning opportunities.

2 Bridgestock, L. (2021). Thoughts on the future of teaching and learning in higher education. TopUniversities.com. https://www.topuniversities.com/student-info/university-news/thoughts-future-teaching-learning-higher-education.

3 Brown, C. (2019). The history of personalized learning. https://www.classcraft.com/blog/the-history-of-personalized-learning/.

Over the past two years, we have seen the value of the expanded use of e-technologies. One can only imagine what would have happened in the higher education space if the COVID-19 pandemic had struck the world, say, in 1990. Then, university education would, in all probability, have come to a grinding halt in a lockdown situation. Fortunately, over the past two-odd years, most students could continue with their studies—arguably, not in the fashion that many would have preferred, but at least they could continue. So, certainly, education technologies have significant value and should, I believe, feature (and feature prominently) in a reimagined teaching and learning framework.

However, while cognisant of the merits of educational technology, here, once again, I wish to flag a caution sounded by Harari. He argues:

> Technology isn't bad. If you know what you want ... technology can help you get it. But if you don't know what you want ... it will be all too easy for technology to shape your aims for you and take control of your life. Especially as technology gets better at understanding humans, you might increasingly find yourself serving it, instead of it serving you (p 267).

Thus, technology should be in the service of teaching and learning and not the reverse. Indeed, the moment a particular educational technology stops benefiting students through enhancing student success, its use should be reconsidered.

Furthermore, while the access to masses of data that we can obtain through the use of educational technology can assist us in identifying the obstacles to and facilitators of student success, caution should be exercised so that we do not become too enthralled and mesmerised by data and data algorithms, as though these are the panacea that will solve all our problems and magically lift student success rates to new heights.

Let me be clear, lest my position in respect of the use of educational technologies be misconstrued: I am not opposed to or fundamentally sceptical of technological advances. On the contrary, I believe that advances in technology can be used in powerful ways to improve the human condition, as well as the quality of the education we offer our students. Indeed, e-technologies have the potential to enable us to offer quality education to larger numbers of students than we currently do. However, as we use technology to improve the learning outcomes of our students, we should ensure that students—and not technology for its own sake—remain at the centre of our attention.

Thus, as we go about this necessary and exciting endeavour of reimagining teaching and learning at the University of Pretoria, it is important that we remember that students and student success—and significantly improved student success rates—remain our priority.

Once again, I commend all our faculties for the extraordinary efforts they are investing in the University's teaching agenda, as well as innovations in teaching and learning, as evidenced in this teaching review.

Professor NTF Duncan

April 2022

Student Data 2021

Institutional

Head count enrolments

56 950

Percentages for UG and PG enrolments

67,3% and 32,7%

Percentage with >6 distinctions who enrolled

9,11%

Female percentage

58,2%

Black percentage

65,6%

Graduates

12 881

UG Success rate (MMP)

86,2%

The SRC President at the virtual #chooseUP Day 2021

Teaching and Learning Priorities
2021

The University had a number of academic goals for 2021, four of which were particularly pertinent to teaching and learning:

- Striving to have the best faculties nationally and among the best internationally
- Taking student success to the next level
- Enhancing the quality and efficacy of teaching
- Relaunching the Curriculum Transformation Project

Striving to have the best faculties nationally and among the best internationally

The University intrinsically values quality in the service of student success, the advancement of knowledge and the development of society. External comparison and validation are performance indicators that affirm the direction that the University is taking.

- UP ranked second in South Africa and Africa on the *uniRank* global list in 2021 (based on 13 000 universities in 200 countries).
- In the *Times Higher Education (THE)* rankings for 2021 (based on 1 600 universities across 99 countries):
    - The Faculty of Law was ranked first in South Africa and Africa and 60th internationally owing to its excellence in teaching and learning as well as in research.

    - The Faculty of Veterinary Science ranked first in Africa for the fifth year running.
    - The Faculty of Theology and Religion was rated the best faculty of its kind in Africa.
    - UP was ranked second in South Africa in accounting and finance and biological sciences; joint first in South Africa (Impact Rankings) for United Nations Sustainable Development Goal (SDG) 9 (industry innovation and infrastructure); and joint first in South Africa for SDG 17 (partnerships for the goals).

- In the *Global Ranking of Academic Subjects (GRAS)* (based on 4 000 universities globally), UP was ranked in the top 500 universities globally and first in South Africa in computer science, engineering, veterinary science, and finance.
- The *Academic Ranking of World Universities (ARWU)* (based on more than 1 800 universities) placed UP in the top 50 in the world for the veterinary sciences subject group.
- *QS World University Rankings*: UP was the top-ranked South African university for mathematics (Natural and Agricultural Sciences) for 2021.
- The *Essential Science Indicators (ESI)* (Web of Science) rated UP among the top 1% globally in 13 of the 22 fields: Plant and Animal Science, Clinical Medicine, Environment/Ecology, Engineering, Molecular Biology and Genetics, Microbiology, Chemistry, Biology and Biochemistry, Social Sciences, Immunology, Economics and Business, Agricultural Sciences, and Pharmacology and Toxicology.

Taking student success to the next level

Rankings

In terms of developing people and making a difference in their lives, international surveys demonstrate UP's positive impact on its graduates' outcomes:

- UP came first in South Africa in *Edutech's StuDocu World University Rankings* (based on 1 800 universities in 30 countries). StuDocu measures academic reputation, campus life (quality of food, safety, housing, sports, culture), whether the student/graduate would recommend the institution to someone else and, for 2021, whether the university had sufficient facilities to follow classes online.
- UP ranked in the top five in Africa on the *QS Graduate Employability Ranking*.
- UP's Career Services Office in the Department of Enrolment and Student Administration received an award from the *South African Graduate Employers Association (SAGEA)* in 2021 'in recognition of high standards of excellence' for the best work-readiness programme.

The intentional effort that went into achieving this recognition characterised the University's integrated student support system, which assists students from their transition into the University to their transition into the world of work.

SAGEA award

The SRC President at the virtual Welcome Day 2021

An integrated and systemic approach to student success

The University recognises that student success requires holistic and integrated support and opportunities for students as they progress through their studies and continue to employment, entrepreneurial activity, or postgraduate study. The implementation of this approach at UP entails the integration and close coordination of the various functions related to student success: student recruitment, enrolment and orientation, financial aid, student accommodation, teaching and learning support and development (academic integration), student affairs (life, health, leadership, psychosocial integration, well-being, and sport and recreation), and campus safety.

Within the student lifecycle approach, student well-being and the academic experience are critical. This includes appropriate curricula, the quality of teaching that students experience, interventions for students experiencing academic or other problems, and the quality of campus life. This approach emphasises students taking responsibility for their academic work, social life, and career development. The FLY@UP campaign ('FLY' stands for 'The **F**inish **L**ine is **Y**ours', where 'yours' is meant to imply students taking agency for their own learning), which started in 2016 and has developed since, epitomises this approach. The initiative intentionally aims to provide students with holistic support and actionable options to succeed in their studies and graduate in minimum time. To improve the quality of teaching and learning and to enhance student success, the following initiatives continued online in 2021:

- Faculty student advisors (FSAs) offer a vital anchoring function in the faculties to provide a 'safety net' service, advising students and referring them for whatever form of support or intervention they require. Their services moved online in 2020 and continued that way in 2021,

Launch of new MasterCard Foundation cohort

implementing lessons learnt along the way. FSAs continued to support students online using Blackboard Collaborate or Google Meet to meet virtually with students. The University provided each FSA with a tablet, headphones, and data.

- The tutors continued with online tutoring via the relevant modules' clickUP courses. Using Blackboard Collaborate or Google Meet, students attended tutorials from anywhere, synchronously (live) or asynchronously (recorded). To ensure that tutors knew how to use clickUP tools (quizzes, the discussion tool, and Blackboard Collaborate), they had to complete an online course using a self-enrolment link. Upon successful completion of the online course, tutors received a letter of participation. They learnt general learning facilitation skills, and one module addressed online facilitation.

- The team- and data-based approach to the review of high-impact modules (HIMs), launched in 2019, is an initiative of the Tshebi data analytics committee to improve the module success rate of a selected number of modules on each faculty's list of HIMs. The project focuses on modules with a pass rate below 75% and a student enrolment of more than 500. The purpose of the project is to provide a holistic review of the modules with targeted interventions to increase the module success rate.

- UP maintained a comprehensive orientation programme to support the academic development of first-year students and provide them with options for assistance.

FLY@UP: minimum time to completion

FLY@UP is the tagline of a systemic intervention that aims to encourage students to complete their academic qualifications during the time period stipulated by the Higher Education Qualifications Framework. FLY@UP not only wants students to graduate on time but to graduate to the best of their abilities. This initiative equips students with tips, skills, and knowledge about resources that they can apply to reach their finish lines and continue to use after reaching these academic finish lines, in terms of work readiness. FLY@UP aims to get students to realise that all of this is possible if they take responsibility for their degrees by putting in the necessary hard work. They also need to reach out to the support services that have been made available to help them on their journey to attaining their degrees.

Typically, in the past, on-campus activation events provided the FLY team with the opportunity to interact with students and share the FLY messages. Furthermore, there were examination preparation activations held in the second semester, known as #ready4exams, where stationery and examination-focused items were handed out to students. Owing to the continued COVID-19 pandemic, larger on-campus events were not possible in 2021. In the place of contact events, virtual support fairs were introduced on an online platform called Kumospace, which enabled FLY@UP to render its services online by curating an entirely virtual Student Support Day. FLY@UP was joined by the library; Student Health Services, the Student Counselling Unit, Career Services Office (with its Ready-for-Work programme), FSAs, peer advisors, student development/student leadership, the Student Wellness Committee, and the Centre for Sexualities, AIDS and Gender (CSA&G). Each professional service designed its own room where staff could interact with students, play videos and share links.

FLY@UP and Spec-Savers partnered again in 2021 to provide students with free eye tests and spectacles. New spectacles were provided to 348 students. The stories and pictures from the beneficiaries of the FLY@UP and Spec-Savers partnership were shared on social media.

Plan B workshops were held on 28 and 29 April. During these workshops, first-year students who were no longer happy with what they were studying were provided with information to make informed decisions. The sessions focused on talks around losing hope and getting bad marks having a huge impact on a student's future. The importance of examination marks, which will replace NSC results if students want to change to another degree next year, was discussed. Transfer options were discussed with students who were performing well but wanted to change degrees.

Faculty Student Advisors (FSAs)

FSAs offer a vital anchoring function in the faculties to provide a 'safety net' service, advising students and referring them for whatever form of support or intervention they require. FSAs continued to support students virtually in 2021 using Blackboard Collaborate or Google Meet. In 2020, each FSA was provided with a tablet, headphones, and data, and in 2021, FSAs who were working on an outdated laptop received a new laptop to enable them to work effectively online. The primary function of FSAs is to provide co-curricular support and development, specifically advice on module choice, dropping modules, study skills, time management, stress management, and so on. This service is offered through workshops and individual appointments. However, the FSAs also refer students with psychological problems for counselling, students with content problems for tutoring, and students with financial difficulties to the finance department. The Department for Education Innovation (EI) has oversight over the FSAs, as a community of practice, but they report to the Deputy Dean: Teaching and Learning in each faculty. UP has nine FSAs who are permanently employed, one for each of the nine faculties. In addition, there are five and a half FSA posts with annual contracts that are funded by the UCDG and a number of additional contracts funded separately.

A new system where FSAs could capture sessions and session details was piloted in 2020 and fully implemented in 2021. The system was designed by IDSC and, in the UP context, is referred to as the Learner Case Management (LCM) system. Advisors recorded 23 317 sessions in 2021.

In 2021, a peer advising project was added to the three-year Department of Higher Education and Training (DHET) University Capacity Development Programme (UCDP) grant that also funds the contract FSAs. Peer advisors are students; their primary duties are to assist students with basic advising questions and to serve as a resource to connect students with the FSAs (where applicable) and/or with general campus resources. Peer advisors will assist undergraduate students by working closely with FSAs and answering common student questions related to the registration and deregistration of modules, degree/module planning, as well as preparation for appointments with FSAs.

Orientation of First-year Students

UP maintains a comprehensive programme to support the academic development of first-year students. The orientation of first-year students is considered a critical success factor in attaining Goal 1 of the University's 2017–2021 strategy, ie, to increase access, throughput, and success. The 2021 Academic Orientation Programme consisted of a pre-orientation online module (which could be completed using smartphones from 22 February 2021), an online Academic Orientation Week (faculty-based) between 10 and 13 March 2021, and an eight-week online extended faculty-based orientation course (UPO) that included various academic and soft skills and was monitored by the FSAs.

Pre-orientation

Because it was clear that most students would be studying online again in 2021, it was decided to give them a head start with the technology before the lectures started. Therefore, an online pre-orientation course was conceived, which was made available to all provisionally accepted students. To provide for students from disadvantaged backgrounds with little or no access to laptops and computers, the pre-orientation online module could also be completed using the Blackboard smartphone app. The aim of this module was to provide all learners who might become UP students with a glimpse into what they might expect from academic life at UP. The first part of the module consisted of an introductory computer literacy component, which included an introduction to UP's learning management system, clickUP. This introductory computer course was customised based on each student's feedback and delivered on one of the following three levels: for students who were not comfortable with computers, for students who were moderately comfortable with computers, and for students who felt comfortable using computers. The orientation team monitored the module and sent regular nudges (short messages with a suggested action) to students who were not progressing satisfactorily.

The Online Academic Orientation Programme

The aim of the Academic Orientation Week is to:

- make students feel welcome at UP;
- help students adapt to the university environment;
- prepare students for the academic year;
- ensure that students cope with the academic demands of being at university; and
- ensure that students know where to find help at UP.

The Academic Orientation Programme targets first-year students and incorporates the FLY@UP campaign. In 2021, it focused on transitions, advice and academic support, information that students would need, practical sessions using technology, and information regarding the University's expectations of the students. Collectively, the programme gave first-year students a TASTE of UP:

- **T**ransitions@UP: UP readiness survey, STARS mentorship programme, work readiness, and faculty houses.
- **A**dvice and Academic Support@UP: FSAs, faculty administration (timetable explanation and programme information), and library.
- **S**upport@UP: Student counselling services, student health services, gender-based violence, anti-discrimination, Disability Unit, and security.
- **T**echnology@UP: UPO (continuing online orientation module), clickUP, and Teaching and Learning THE UP WAY.
- **E**xpectations@UP: Academic integrity, faculty information sessions, and discipline competences.

UP Mobile App Orientation Persona

EI worked in collaboration with the UP mobile app developer to add a new persona. The Orientation 2021 persona allowed students to access the different faculty programmes and an interactive campus map for the duration of the orientation. A welcome message was sent the day before orientation, with follow-up messages on subsequent days.

Campus Tour Guide App

Students could use the Campus Tour Guide App to navigate around campus while getting information about selected buildings relevant to their faculty. The app can be downloaded on any Android or iOS device. A web-based campus environment is also available should students not be able to access campus grounds. The web-based campus simulates the real campus, and a smartphone can still be used to scan relevant buildings on the web campus.

UPO Modules: Eight-Week Online Extended Orientation Programme

In addition to the one-week academic orientation, all students are required to complete an eight-week online module (UPO), which is an extension of the orientation programme. Students started their online extended orientation through UPO during the orientation week and continued with the module for another seven weeks. Part of the campaign's aim is to enable students to complete their degrees in minimum time (FLY@UP). The topics covered weekly included FSAs' contact details and the details of other resources, time management and goal setting, academic reading and writing, note-taking, study methods, and examination preparation. The UP Readiness Survey was also administered in the first week of UPO. Students who were potentially at risk, as identified by the UP Readiness Survey, had the opportunity to join the STARS mentorship programme. The aim of the programme is to assist first-year students with their transition from high school to university by supporting them socially and emotionally. The additional advantage is that mentoring encourages a sense of belonging and having someone who knows and cares about the student, which boosts a student's academic performance. The overall UPO completion rate was 85,5% for 2021.

Student Feedback

Students are essential participants in improving teaching practices, and as such, their feedback is of great value to the lecturer. Watermark Course Evaluations and Surveys (CES) enables students to provide feedback on the effectiveness and quality of teaching through a single sign-on in clickUP, anywhere and from any device, including smartphones. This platform also allows academic staff and their line managers to develop and accumulate a portfolio of evidence, which they can use for programme reviews, performance management and academic promotion purposes. The function of an electronic lecturer and module evaluation system is to ensure that academic staff are able to engage in reflective practice to gain insights into their teaching, which helps them to effect improvements. The survey was adapted for the remote learning environment. In 2021, 106 288 students responded to a survey of 1 913 modules. At the end of the second semester, student feedback average scores showed that students, in general, are very satisfied with the quality of teaching at UP.

Tutorials

Tutoring is a co-curricular activity directly related to teaching and learning. The aim is to ensure that students have a better understanding of the knowledge and skills in a module. Tutorials help to deepen student learning in a peer-supported environment, which will influence retention and success in that module and eventual graduation. The office of Academic Development appointed a Senior Teaching Support Coordinator (institutional tutor coordinator) in 2020, and she started work in 2021. Part of the role of the coordinator includes managing and providing oversight of the various teaching support staff programmes. The first step the coordinator followed to achieve this end was to establish networks and collaboration with key role-players in the faculties (Deputy Deans: Teaching and Learning, faculty tutor coordinators, education consultants, and instructional designers). In 2021, she facilitated a number of institutional roadshows and one-on-one meetings, which were pivotal in gaining insight into how tutorials are structured throughout the university.

Peer learning

Student Analytics: The Early Identification and Support of Students

Data are among the most powerful tools for lecturers and their students to inform, engage, and support student success. Technology and artificial intelligence (AI) create new opportunities to monitor and enhance student success. AI requires large sets of reliable data to extract patterns and make predictions. Therefore, effective management and use of data become critical for the University to use predictive analytics and early alerts to prevent possible future problems. The COVID-19 pandemic increased the value of access to real-time data to support student success and institutional, data-driven decision-making. The increased demand for data required the development of dashboards and reports, which started in the first quarter of 2021. More than 120 heads of departments (HoDs) attended dashboard training, which aimed to empower them to use the reports and dashboards developed.

All of the data from the various electronic platforms flow into one central system via clickUP, except for the LCM system. Integrating a digital teaching, learning, and student success software package into the LMS means not simply connecting applications; it also requires careful planning of the flow of learning and student success data. With this in mind, the University uses the Pyramid Analytics software to collect all the data and develop user-friendly student success dashboards for management, lecturers, and students.

In 2016, the Vice-Principal: Academic established an analytics team, the Tshebi Student Success Data Analytics Task Team (Tshebi), which focuses on undergraduate student success. Tshebi is composed of faculty representatives (mainly Deputy Deans: Teaching and Learning), Education Innovation, Information Technology Services, Enrolment and Student Administration, Institutional Planning (especially its unit: Institutional Research and Analytics), and Student Affairs. In 2021, the committee continued to focus on the team- and data-based approach to reviewing HIMs, including graduation rates, progression, student readiness, academic advising, and student feedback on teaching. Pyramid Analytics, a business intelligence and data-analytics software solution identified as a solution to optimise the HIMs project through simplified reporting and analysis. Pyramid Analytics was scaled to provide data to the deans, deputy deans, HoDs, education consultants and FSAs.

In 2021, Tshebi's team- and data-based approach to module review focused on improving the success rate of selected HIMs in the Faculty of Engineering, Built Environment and Information Technology (EBIT) and the Faculty of Natural and Agricultural Sciences (NAS). The process kicked off at the beginning of the year with planning meetings with the deputy deans of these faculties. As part of the project, both faculties received funding for student assistants in the selected modules. The aim of the project in 2021 was to increase the use of the Blackboard Retention Centre in the modules, the utilisation of Pyramid Analytics, and the lecturers' use of the results from the Student Feedback on Teaching Survey to improve their teaching design.

A structured module review questionnaire was also developed during 2021, allowing for a broad uptake of module reviews across the institution, which is planned for implementation in 2022. The results of the module review questionnaire are available on Pyramid Analytics and integrated into clickUP and HEDA data to create a data-informed approach to module success.

UP's Student Success Related Technologies

UP's student success-related technologies can be grouped into three categories: identification, information, and support, shown in the table below and expanded in the following sections.

Table 1: Student success-related technologies

Identification	Information	Support
Predictive software	Support information hubs	Enhance accessibility
Analytics software	Dashboards and nudges	Support information hubs
Survey platform	Reports	
	Case management systems	

The discussion starts with support, then moves on to the identification of students and information about the systems.

Technology to Support Student Success

The University aims to create a more inclusive environment, broaden students' access to learning material, and support students. To achieve this, the University uses Blackboard Ally to enhance digital content for access and learning and build a more inclusive learning environment. The software improves the student experience by helping them control course content with usability, accessibility, and quality in mind. For students to control their own needs and contact the many different support services offered by the University, Blackboard Assist, in clickUP, is a central information hub.

Table 2: Technology to support student success

Student support	UP platforms
Enhance accessibility	Blackboard Ally
Support information hubs	Blackboard Assist

UP is the first higher education institution in Africa to implement the Blackboard Ally software to make the University's digital courses more accessible to all students. This software enables students with learning disabilities as well as second-language students to improve their academic performance. The adoption of Blackboard Ally fosters an inclusive learning environment and is a revolutionary solution that integrates seamlessly into clickUP, making digital course content accessible to a greater diversity of students. As such, its use aligns with the University's policies regarding equality and its commitment to embracing diversity. The software automatically checks digital files for accessibility issues. It further generates alternative formats, including HTML, ePUB, audio, and electronic braille, which are engineered to work better with assistive mobile devices and study tools. Blackboard Ally also

provides feedback to instructors to enable them to improve the accessibility of their course material. While the focus is on content accessibility, all students, including first-generation students, may benefit from accessing learning content in alternative formats. Students with inconsistent Internet access may use offline or low-bandwidth formats. Those with undiagnosed learning challenges could benefit from downloading MP3 audio files to listen to content. The software was piloted at UP in 2021 among a small group of students and academics for a few months. Academic staff used the software to improve the accessibility of their digital learning content and as a catalyst to create opportunities that are more equitable for all students.

Technology to Identify Students Who Need Support

The University uses the UP Readiness Survey and Blackboard Engage predictive learning analytics to identify students at risk of failing. This facility allows the FSAs to identify and support students who are at risk. It generates predictions regarding student risk using historical data about student demographics and success from the Student Information System (SIS), as well as activity and grade data from clickUP. Pyramid reports and dashboards were developed for the FSAs to gain access to students' learning data, as well as results of the UP Readiness Survey.

Table 3: Technology to identify students who need support

Identification	UP platforms
Predictive software	Blackboard Engage
Analytics software	Pyramid Analytics
Survey platform	Qualtrics

The UP Readiness Survey uses Qualtrics to measure students' readiness for university education: that is, a student's level of preparation (financial, social, and academic) to succeed at a higher education institution. The results are used to identify first-time students in their first year for targeted interventions, such as the peer mentorship programme or academic advising by the FSAs. In addition, the information may be used to identify and refer students who have indicated financial distress, accommodation challenges, data or device challenges, and a recognised disability to the respective support departments. The results are also used to obtain a better understanding of the profile of the new student cohort.

Technology to Capture and Provide Student Data

The COVID-19 pandemic highlighted the need for student-focused data to enable students to track their own progress. The Higher Education and Research Innovation unit in Education Innovation thus embarked on an initiative that should foster an evidence-based approach to improving teaching and learning and supporting student success. To achieve these ends, two Pyramid dashboards, targeted at deputy deans and HoDs, were created. There are also several data functions embedded in clickUP.

Table 4: Technology to capture and provide student data

Student information	UP platforms
Case management systems	IDSC Learner Case Management system
Dashboards and nudges	Blackboard Retention Centre and dashboards Pyramid Analytics dashboards
Reports	Blackboard Analytics for Learn student reports Blackboard Course reports Blackboard Student risk reports Pyramid Analytics reports

Lecturers can generate the Blackboard student report and make it available to the students within each module. The report allows students to compare their activity and progress with that of their peers in the same module. Each undergraduate module also provides access to student risk reports under the evaluation section of the course management links. Blackboard Engage is a student success solution that leverages clickUP activity, student biographical data, and advanced analytics to identify students who are potentially at risk academically, making early intervention possible. The instructor report provides an integrated dashboard at aggregated and individual student levels. Students are able to track their progress owing to recent improvements to the notification settings in 2021. The facility allows students to be notified, for example, if their activity or grade decreases compared to that of their peers.

Ready-for-Work

The free, online Ready-for-Work (R4W) programme continued to be popular among students. Faculty-specific tutorials were added. The tutorial packages include tutorials on AI, with one generic, introductory tutorial plus one AI tutorial per faculty pointing out its use and potential in fields in each faculty. Four AI tutorials were uploaded in 2021: the introduction to AI and tutorials pertaining to Economic and Management Sciences, Veterinary Science, and Education. Work was begun on an AI tutorial for Theology and Religion. It is clear that the use of AI to enhance teaching and learning is in its infancy, as it is in many of the fields taught at the University. In total, there were 44 modules available at the end of 2021, distributed across six packages. The enrolments and completions for the core packages were as follows:

Table 5: Ready-for-Work packages

Package	Completed
1: At the starting line	394
2: Power skills	502
3: Job preparation	281
4: The finish line: Your career	400
Total enrolments = 2 863	1 577

The Career Services Office (CSO) in the Department of Enrolment and Student Administration investigated why students who enrolled for the packages did not complete them and will use the information to inform their marketing in early 2022.

Celebrating 22 UP staff and alumni in the Mail & Guardian's top 200 young South Africans

Further Enhancing the Quality and Efficacy of Teaching

The University is committed to enhancing the quality and efficacy of teaching using *A National Framework for Enhancing Academics as University Teachers*. The framework's aims are to:

- 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; and
- ensure that academics are recognised and rewarded for the work that they do as university teachers.

Each of these dimensions is discussed in some detail below with examples provided.

Promote Knowledge Production and Knowledge Sharing about University Teaching and Learning

SoTL Grants

The Scholarship of Teaching and Learning (SoTL) grants are a project in UP's UCDP grant made available by the DHET. The purpose of the grants is to promote institutional research to improve teaching and student learning and success. The grants were advertised, and 34 applications were received, 26 of which were granted R20 000 each in funds. Owing to the COVID-19 pandemic, one grant was cancelled. It is estimated that 17 011 students benefited indirectly from the 26 SoTL projects. In accepting the grant, the applicants contract to keep to the activities and expenditure in their applications and to submit an annual report. Each grantee submitted a progress report at the end of 2021. To determine the impact of these grants, one of the questions asked was: What changes were made in the classroom based upon your findings? The feedback received highlights the significant impact that these grants have had on the lecturers' classrooms and innovative teaching practices.

Flexible Futures Conference

Vice-Principal: Academic Professor Norman Duncan championed a virtual Flexible Futures Conference on 26 and 27 August 2021, funded as a project of the UCDP grant. It was the seventh annual conference, and the theme was 'Reimagining teaching and learning in higher education'. It was organised by Education Innovation. This conference creates an opportunity for UP and other universities to showcase and share their teaching and learning innovations. The keynote speaker, Professor Mariët Westermann, Vice-Chancellor and Chief Executive of New York University Abu Dhabi, focused on the theme of the conference. Professor Emma Ruttkamp-Bloem, Head of the Department of Philosophy at UP, opened the discussion on reimagining the ethical use of AI technology to support teaching and learning. This input was followed by a presentation given by Joe Pringle of Amazon Web Services regarding the 'Practical applications of AI and machine learning'. Krista Greear, Blackboard Senior Accessibility Strategist, shared a personalised approach to engaging with course content: automating universal design for learning principles with Blackboard Ally's alternative formats. Alesta Nortje from the Central University of Technology in the Free State represented Cengage to reimagine teaching and learning to improve students' readiness-for-work and employability competencies. Besides the keynote presentations, the Deputy Deans: Teaching and Learning in the various faculties had a panel discussion, chaired by Professor Alta van der Merwe, on the future of tertiary teaching and learning.

There were 112 other presentations. Registrations totalled 340 people and, at any moment during the conference, about 100 to 150 people attended the sessions. Approximately 90% of the registrations were from UP staff, all of whom were sponsored to attend as part of the mission of the UCDP to enhance teaching. This was an opportunity to learn and share innovative teaching, learning, assessment, and student success interventions, as well as the effective use of educational technology in higher education. The sponsors for this conference included Blackboard, Cengage, Amazon Web Services, and OneConnect.

Develop Expectations of Academics in Their Role as University Teachers

Academic Induction

It is the responsibility of HoDs to induct newly appointed academics into their departments and provide mentorship and support. Through discussions about their performance contracts, these academics learn about what is expected of them as university lecturers. Continuing attendance at departmental and faculty meetings further develops a situated and nuanced understanding of expectations. Faculties might also run a formal group workshop for new academics.

The flagship Academic Induction Programme for all new full-time and part-time lecturers is presented by the Department for Education Innovation. In 2021, 233 participants attended the programme. Newly appointed staff are required to complete the programme during their probation period (first two years). The first opportunity to attend the academic induction was 4–5 March 2021, and the second was 12–13 August 2021. The induction process consisted of:

- attending a two-day introductory course;
- completing all the foundational professional development courses (including clickUP and assessment courses) as identified by the Department for Education Innovation; and
- receiving peer-evaluations (class visits) at least twice by a peer or education consultant.

After academics had completed the induction process, a certificate was issued.

Enable Continuous Professional Development (CPD) for University Teachers

Opportunities for academics to access professional development activities are considered a lead indicator for improving the quality of teaching. CPD at UP is important as it ensures that academics improve their teaching skills throughout their careers. It also allows them to adapt to changing circumstances in their environment. The CPD narrative focuses on teaching to address student success within the UP context. This requires a scholarly and professional approach to teaching and the delivery of contextually responsive curricula. A number of role-players, from the faculty to the Department for Education Innovation to specialised committees, provide opportunities for continued learning.

Various faculty initiatives promoted knowledge production and sharing about university teaching and learning. These initiatives included brown bag events, teaching and learning discussions, webinars, and sharing resources via faculty-based clickUP modules.

The Department for Education Innovation provided institution-wide workshops and priority courses to develop the teaching, assessment, and e-learning skills of academic staff members. The aim was to develop a combination of technological and pedagogical knowledge and skills. This knowledge helps academics to integrate appropriate technology into teaching while addressing the complex nature of academic knowledge and therefore setting appropriate relationships and interactions between the technologies and pedagogical practices. Education consultants in Education Innovation offered a range of CPD opportunities aimed at different academic career stages. The scope of these CPD offerings included enhancing academics' teaching and assessment skills (face-to-face and online) and curriculum development initiatives.

The evaluation elicited from participants is used to enhance Education Innovation's offerings. In 2021, institutional training was completed by 428 academics, and 1 293 academics attended faculty-specific events. Training in teaching facilitation was also offered to assistant lecturers and tutors. Faculty-specific tutor training followed the institutional training. It is evident from the numbers that a significant proportion of the academic staff participated in professional development activities.

The E-Education group used strategies to develop lecturers' autonomy in the use of the University's e-education systems. Different formats of continuous professional development were foundational to this approach. Instructional designers presented priority courses, faculty or departmental training sessions based on requests, as well as individual just-in-time training and support. All e-learning priority training was presented during synchronous online sessions during 2021. These courses were also available as unfacilitated, online courses that lecturers could take in their own time and at their own pace to develop their skills. The QuestUP courses (for computer-based assessment) were presented in November to train lecturers in the use of the newly implemented QuestUP 2.0 (Cirrus Assessment) system. In total, 932 staff members completed e-learning courses during 2021: 785 staff members attended one or more of the synchronous e-learning priority courses, while 147 lecturers completed the courses. Instructional designers conducted three faculty-wide and six departmental sessions to assist lecturers with remote teaching and online assessment. Four synchronous online training sessions were presented to 153 tutors. The E-learning Unit also presented 13 institutional virtual lunch-hour sessions in 2021 to provide guidance to lecturers on their remote teaching. Topics that addressed educational practice included: Keeping track of student activity in clickUP; Increasing your online teaching efficiency in clickUP; Good practice in communicating and enhancing student engagement in an online teaching environment, and Digital accessibility, which was presented with Dr Alecia Samuels and the Disability Unit. Other institutional

sessions were dedicated to the preparation of lecturers for online assessment: preparation for online examinations, the new QuestUP online assessment system, and the use of GradeScope and Proctorio.

Instructional designers provided continuous guidance to lecturers with their clickUP modules. The focus of the guidance and support shifted during the lockdown period to include better online teaching practice, narrated PowerPoints, the use of Blackboard Collaborate for synchronous sessions, and effective educational use of clickUP assessment tools. Extensive support on the use of the Grade Centre was also necessary as all marks were recorded in clickUP.

The Tshebi data analytics committee, chaired by the Head of the Higher Education Research and Innovation Unit in Education Innovation, builds data analysis capacity among its members and across the University as teams work with HIMs staff to review their modules and improve their students' success rates.

Advance University Teaching through Leadership Development

Senate Conference 2021: 'Reimagining higher education: Frontlines, intersections and opportunities'

Programme for Academic Leadership (PAL)

The Department of Human Resources runs a number of programmes annually to develop leadership in the University. Of particular interest for teaching development is the Programme for Academic Leadership (PAL) presented by UP's Gordon Institute of Business Science (GIBS). In September 2021, there were 19 participants, nominated by the faculties and approved by the Executive. The following leadership categories are eligible for nomination: deans, deputy deans, school chairs and heads of academic departments. The aim of the programme is to equip senior academics with academic leadership knowledge and skills, in order to assist them to progress effectively in their careers and to provide a foundation for developing a strong academic leadership career.

New Generation of Academics Programme

The DHET implemented a New Generation of Academics Programme (nGAP) in partnership with South African public universities in 2016. The transformative nature of the nGAP programme involves the recruitment of young (under 40 years of age), highly capable scholars as new academics in scarce disciplinary areas within a particular higher education institution. Since the programme's inception, the University has appointed 31 nGAP lecturers. The new academics are given time to complete higher degrees, so have a reduced teaching load. They are also given opportunities to develop professionally through attendance of workshops and conferences, registration for doctoral programmes, the provision of IT equipment, and the appointment of an academic mentor.

Teaching Advancement at Universities

The University has participated in the Teaching Advancement at University (TAU) fellowship programme since its inception. It is already in its fourth iteration. Over a two-year period, the fellowship involves block sessions, projects, and other activities and strives to create a core of excellent teachers across universities and disciplines who can enhance teaching at their own institutions as scholars, leaders, and mentors. TAU is funded through the DHET and endorsed by the Higher Education Learning and Teaching Association of Southern Africa (HELTASA).

In 2021, as part of the TAU 3 and 4 cohorts, UP was represented by Professor S Adam (Health Sciences), Dr P de Waal (Natural and Agricultural Sciences), Dr N Davis (Natural and Agricultural Sciences), Professor A van der Merwe (Engineering, Built Environment and Information Technology) and Dr Y Hlophe (Health Sciences).

Establish and Maintain University Teacher Development Structures, Organisations and Resources

The Department for Education Innovation

The Department for Education Innovation has for decades provided continual professional learning opportunities for academic staff (e-education and education consultancy). The Creative Studios' staff offers support to enhance teaching and learning, whether with graphic design, videos or communication technologies. The Higher Education Research and Innovation Unit produces data and analytics to inform student success interventions in collaboration with the Deputy Director: E-Learning and Media Development. The Deputy Director: Academic Development and the managers of FLY@UP offer leadership to inform student success initiatives. The Community Engagement Office provides support for curricular community engagement.

Members of Education Innovation have also been involved in national and international initiatives. UP has entered into collaborations with other universities to nurture, support, and develop academics as university teachers.

To this end, the Education Consultancy Unit engaged with the University of Limpopo on multiple levels. At an international level, the unit was part of the Pedagogical Leadership in Africa (PedaL) initiative. The E-Education Unit continued to follow national and international best practice through interactions with service providers to the University, particularly the provision of the learning management system (Blackboard Learn) and its associated analytics products. Members of the unit had extensive interactions and collaboration with the Cirrus Assessment company to prepare for the transfer of existing assessment questions and the implementation of the new QuestUP 2.0 that will be deployed in 2022. The E-education Unit contributed to the annual UP2U gathering of South African instructional designers. In 2021, this meeting was coordinated by Rhodes University and the Nelson Mandela University. About 90 representatives from national universities attended the online event on 26 October 2021. Panel discussions and individual presentations centred around the challenges faced and solutions implemented by institutions to support the continuation of the academic enterprise during the COVID-19 lockdowns.

The head of the Higher Education Research and Innovation Unit chaired the institutional Tshebi data analytics committee. The unit collaborated and offered training nationally on the use of data for student success.

In 2021, various units participated in the team- and data-based review of at-risk modules, working with lecturers to improve the success rate within those modules through data analytics and good pedagogical practices.

The Facilities Management Department: The Reimagined University

Physical learning spaces are a critical need now, more than ever, as they have an impact on student health and academic performance (Steiner 2020). The teaching and learning landscape is evolving more rapidly and might look very different post-pandemic because of experiences of working differently, as well as technological advances and an increased focus on hybrid learning. The repurposing of the physical environment is inevitable, led by reimagined teaching practices: classroom layouts will have to be redesigned to remain effective as learning spaces, and open and collaborative spaces will have to be developed. Renovations will need to take place efficiently. Various projects have been completed or are being planned, as will be shown below.

Facilities Management considers three aspects when developing learning spaces: Teaching and learning THE UP WAY, the design approach, and the ecosystems of learning spaces.

Aligning to Teaching and Learning THE UP WAY

The thrust of the University's teaching approach is that, after the pandemic phase of COVID-19, UP will adopt more flexible modes of learning where the focus will be on technology-enabled flipped learning. Students will come to class prepared, complete pre-class assessments, engage in class and consolidate their knowledge after class. It is important to consider every space as a valuable tool for learning and to leverage the entire campus as a connected ecosystem of learning environments that will support the hybrid model.

The different types of learning include:

- onsite, face-to-face learning experiences, focusing on centralised, teacher-guided learning OR group work OR laboratory work OR work- or community-based learning;
- online classes, predominantly Blackboard Collaborate sessions, which are decentralised, face-to-face learning characterised by synchronous, interactive, teacher-guided learning but are able to be captured for asynchronous viewing (other technologies might be Zoom or Microsoft Teams); and
- anywhere, anytime self or small-group study, featuring self or collaborative learning, guided by clickUP, courseware and textbooks.

The Design Approach

The following concepts are considered when designing for hybrid learning (Steelcase 2020):

1. Person-to-person connections remain essential for successful learning. Many students will seek face time with their peers and professors.
2. Technology is supporting richer face-to-face interactions and higher-level cognitive learning. Progressive educators are now leveraging technology to create a higher-impact role for themselves in their classroom.
3. Integrating technology into the classroom mandates flexibility and activity-based space planning. Different types of spaces are being created to support a wide range of activities.
4. Spatial boundaries are loosening. Flexible spaces are integral to hybrid learning. Classrooms with mobile furniture, wider hallways to support more activities, cafes with whiteboards, lounges with informal seating and power connections, and spaces with movable furnishings are among the fast-emerging design imperatives for effective educational environments.
5. Spaces must be designed to capture and stream information.
6. Pencils and pixels will coexist. Technology advancement will continue to revolutionise education, but students and staff have not abandoned analogue materials. Writing and whiteboards are as useful as ever as quick, easy ways to capture information and activate cognition.

Ecosystems of Learning Spaces

Projects that were completed during the last two years and those that are being planned demonstrate the ecosystem of reimagined learning spaces at UP. Venues, such as the Economic and Management Sciences postgraduate hub, Akanyang, mathematics tutor venues, and the Lesedi lecture complex on Prinshof Campus were designed with multiple learning situations in mind.

Technologies are effectively integrated to support a variety of teaching and learning modes, with easy transitions between them. The new Erasmus+ SUCSESS Employability Lab, planned in 2021, will be a high-tech simulation lecture venue where students will learn necessary computing skills and have an opportunity to engage with industry.

Akanyang

Multifunctional mathematics tutor venue/social learning space

Employability lab

Speciality zones, such as laboratories, support multidimensional teaching and learning models such as observation, opportunity for experimentation, and practice in a specific field of study. The consumer science training laboratory, the civil engineering concrete laboratory, the Health Sciences skills laboratory and the veterinary skills laboratory and MRI are a few examples.

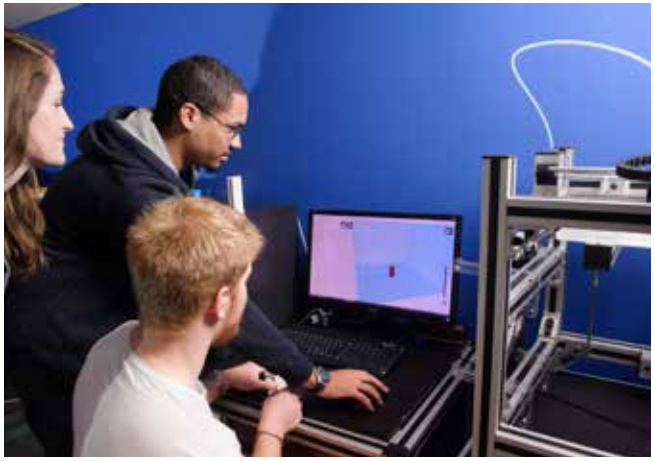
Consumer science training laboratory

Civil engineer concrete laboratory

The very popular Merensky 2 Library and Future Africa research commons are designed to be vital learning hubs with a range of settings to support collaborative learning as well as focused individual study. Libraries of the future will be centred on this approach.

Future Africa research commons

Makerspaces are creative, self-directed learning spaces where students can create, invent and learn. They form part of expanding strategies for student success. These spaces allow students to impart practical skills, engage in hands-on learning, explore their creativity and learn to solve problems. UP's makerspaces include the Merensky 2 Library MakerSpace, the Department of SMTE Technology Laboratory, the TuksNovation high-tech incubator and the Tika Cezeri FABLAB, which is currently in planning.



Merensky Library MakerSpace

SMTE technology laboratory

Student commons in the new Engineering 4.0 Building, Akanyang, and the new Graduate Support Post-Graduate Service Centre support many ways to learn and are multipurpose environments for relaxing, socialising, discussing ideas or studying alone with others nearby. Student commons help students develop personally and stay engaged in the experience of learning.

Student commons in Engineering 4.0

In-between spaces are hallways and ancillary areas where informal learning takes place. These spaces can be used by individuals and groups, giving students more choices, and the strategy optimises real estate. An example of this is the newly refurbished foyer at HW Snyman North, Prinshof Campus, and the Arnold Theiler social learning space on Onderstepoort Campus.

HW Snyman foyer: In-between social learning space

Arnold Theiler foyer: In-between social learning space

Outdoor spaces are often overlooked. The outdoors can be an effective environment for learning. With supportive work surfaces, seating, and access to power, outdoor settings can be stimulating environments for project work and individual study. The recently completed Monastery Hall shows the potential of outdoor areas for learning.

Monastery Hall outdoor learning space

In the future, learning spaces that are flexible and adaptable will better support the adaptability expected of educators and students. It is hoped that enhanced hybrid learning connections will bring online and physical experiences together to create an elevated sense of community.

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The Department of Library Services

All protocols observed

In 2021, the Department of Library Services (DLS) experienced an increased demand for library materials from students who did not have permits to enter campus. All checked-out library materials were renewed monthly, from the start of the lockdown until the end of February 2021, to prevent students from accumulating fines.

The UP community has had access to a large collection of online resources in the past; however, the DLS continued investing in e-books and other online information resources in 2021. Apart from subscriptions to several e-book databases, 153 099 additional licenced e-books were added to the library's collection. This strategy ensured that students and researchers could access the resources they needed to complete the academic year successfully.

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.

During 2021, the DLS Learning Centre continued to grow and market its training, teaching, and learning services to specific groups. There was an online meeting and training session with the BOLD (Beyond Our Limiting Disabilities) society for students with disabilities, along with student advisors and the SRC. Kumospace training sessions with the newly elected house committees were also held. The library's partnership with the first-year compulsory AIM module continued, with the library component of the module updated every semester. Weekly online training continued, covering various topics such as academic writing, anti-plagiarism, and an introduction to library products and databases. The DLS also partnered with FLY@UP in the Kumospace sessions where various training opportunities were marketed, including a training video on plagiarism. Furthermore, the basic and advanced clickUP courses were completed, and another was added on database searching. These fully online and self-paced anti-plagiarism training offerings were repackaged and tailored for specific modules.

The Learning Centre subscribed to the Doodly Software and developed new training material on various topics such as Boolean operators and keyword identification. A quality assurance guideline document for the development of online training material was designed with assistance and input from all faculty library representatives in the Teaching and Learning Focus group.

In continuing its support for teaching and learning activities, the Digital Scholarship Unit maintained a high level of involvement to support the DLS.

Library support infrastructure

Some of the major contributions made by the Digital Scholarship Unit and its specialist areas are as follows:

- In 2021, the DLS Digitisation Unit continued its support for teaching and learning by providing high-quality scanning services to students and lecturers who did not have access to physical libraries. This service ensured that teaching and learning activities continued throughout the year, especially during stricter lockdown levels caused by COVID-19. The Digitisation Unit, for the first time, assisted with the scanning of examination papers to allow the digital transformation of the marking and scoring process that was done electronically.

- The MakerSpace continued its support by offering remote and physical consultation sessions through various lockdown levels. It also directly engaged with students in lecturing environments regarding usages and applications of advancing technologies of the Fourth Industrial Revolution (4IR) in a safe and conducive manner. This included offering access to and guiding students on 3D printing, 3D scanning, 3D modelling using computer-aided-design (CAD), and microcontroller kits for prototyping as part of their curriculum-based training.

- The DLS Web Office, as part of its renewal process, embarked on an extremely large project to overhaul its ageing website. With the exacerbated pressure of moving to the digital domain caused by COVID-19, the DLS had to become a more flexible, fluid, and agile environment that can accommodate media-rich content that is modern and relevant. To this end, the DLS successfully implemented a new Content Management System (CMS) aligned to UP branding. The new CMS is based on the library's existing LibGuides system for a more seamless and integrated environment, catering for a wide array of library management applications. The new site aims to enhance user experience to ease the process of discovering library services and, in doing so, advancing and enhancing the teaching and learning process.

- As part of the advancement of digital scholarship-related activities, the DLS Information Technology (IT) Unit embarked on customising and implementing a multi-journal platform, based on an existing Open Journal Systems (OJS) platform, maintained and operated by the Faculty of Humanities. The platform was successfully launched on 20 April 2021 and currently hosts 14 journals. Self-publishing is an important activity related to digital scholarship that enables individuals to participate in a vetted environment. The UPJournals platform (https://upjournals.up.ac.za) forms part of the Emerging Scholars Initiative, as well as the Unit for Academic Literacy, enabling teaching and learning activities as part of its academic offering.

An online advanced library training course for postgraduate students was created on clickUP. The course consists of three parts with subsections covering the whole research cycle. Another postgraduate online training guide was developed by the Merensky Research Commons, covering online training material for postgraduate students and researchers. The Research Enablement group organised and presented two full-day online workshops for early-career academics at UP. The focus was on research support where the library plays a role, such as literature searching, EndNote, RDP, and some bibliometric tools.

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

Academic Achievers' Event 2021

Each faculty has developed its own set of teaching awards, as evidenced in the faculty reports. These awards are partially supported by the UCDP grant. There are also a number of institutional awards, bestowed during the annual Achievers' Awards event:

- Teaching Excellence Laureates
    - Dr CE Mundy (Department of Chemistry, Faculty of Natural and Agricultural Sciences)
    - Dr M Hattingh (Department of Informatics, Faculty of Engineering, Built Environment and IT)
- Community Engagement
    - Professor JFM Hugo and Dr AH Talma (Department of Family Medicine, Faculty of Health Sciences)
    - Dr R Eccles and Dr E Krüger (Department of Speech-Language Pathology and Audiology, Faculty of Humanities)

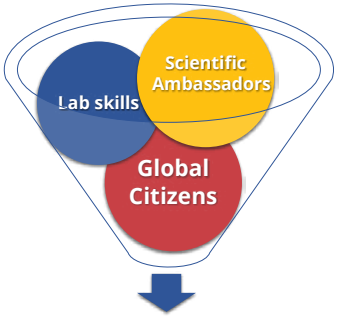
Teaching Excellence Laureates

Dr Christine Mundy

Dr Christine Mundy

Dr Mundy is a lecturer in the Department of Chemistry. She teaches first-year chemistry modules for the BSc Extended Curriculum Programme on the Mamelodi Campus. Dr Mundy's success in the lecture hall springs from her desire to create an inclusive and engaging environment where she meets students where they are in terms of their understanding. In 2021, Dr Mundy's dedication to teaching and learning was acknowledged through the award of an institutional Teaching Excellence Laureate.

Dr Mundy has also devoted herself to re-inventing the students' laboratory experience. She says: 'I believe that laboratories are not just places where students do chemistry, but laboratories can also provide experiences for students to think and feel about chemistry in a meaningful way'. Dr Mundy strives for student excellence by equipping her students with the necessary laboratory skills, as well as providing contextual and ethical backgrounds so that students can join society as global citizens.



Model for student excellence in chemistry (CMY)

Her first laboratory initiative was the introduction of a spectroscopy practical whereby students build and use their own individual, low-cost and portable Mini Spec. The success of this practical was that students were empowered to become scientific ambassadors, taking their Mini Specs with them throughout the country, sparking interest and motivation in their homes and communities.

The COVID-19 pandemic radically changed how things were done in the chemistry laboratory. With the help of her laboratory manager, Dr Mundy sourced and created YouTube videos and created new laboratory report sheets to promote the growth of skills, create awareness around health and safety issues, and guide higher order thinking in the analysis of observations. Not only is Dr Mundy an esteemed lecturer, but she also publishes and presents her findings in the field of tertiary chemistry education.

Dr Marié Hattingh

Dr Hattingh is a senior lecturer in the Department of Informatics. In the Information System Design (ISD) stream, in which she lectures second- and third-year students, she applies her teaching philosophy of continuous learning (for both lecturers and students) to create an environment in which students are not just acquiring content knowledge but are also developing graduate attributes and a professional skill set. Dr Hattingh sees students as individuals who are part of an ecosystem or learning environment that is influenced by a number of factors that need to be taken into account. She also believes that the most important outcome of learning is the development of industry-ready graduates.

Dr Marié Hattingh

Based on her philosophy and working with the teaching team of the coordinating lecturers, assistant lecturers, and teaching assistants, she led the development of a knowledge conversion platform for second-year Informatics (INF 271) students to access content and feedback on ISD topics. It took the form of a BA Bot created by Dr Hattingh through integrating a commercially available bot platform and Google Drive.

The idea of a knowledge conversion platform emerged from Dr Hattingh's need to share with her students information that textbooks did not capture, thus transforming the content and delivery of the curriculum. The BA Bot made available authentic, easily accessible case studies contextualised within the South African environment. The platform can be updated as relevant case studies become available. The knowledge conversion model ensures that BA Bot is populated with content to support scaffolded learning: It starts at the data level, where key concepts and definitions are explained, and works up to integrated examples.

Case studies are not the only resources on the BA Bot platform. The teaching team provides students with activities that cater for the different types of learning required by the context: notes, tutorial activities and additional resources, including videos. The platform can provide feedback on activities to ensure effective learning.

INF 271 is required to complete the third-year Informatics 370 (INF 370) capstone project, which she teaches with Dr Lizette Weilbach. The two modules operate synergistically and thus form a coherent pathway for students to progress and succeed. INF 370 focuses on the application of systems analysis and design in a practical project, programming, and the use of computer-aided development tools. The culmination of the module is a capstone project, which brings together all the knowledge the students have gained in their first three years of study. The approach entails the development of a business system for an actual client that solves an industry problem, an innovation in South African higher education. The Department of Informatics can thus produce industry-ready graduates who have technical skills but also soft skills related to graduate attributes such as the ability to work in teams, lead, and be creative and adaptable.

Key features of Dr Hattingh's approach are that it is based in firm beliefs about teaching and learning, uses a team approach, is transformative, and creates coherence within the programme as a whole.

Award for Community Engagement

Two people in Health Sciences received awards for community engagement.

Professor Jannie Hugo

Professor Hugo joined the University of Pretoria in 2006 as an associate professor responsible for community engagement. Since Professor Hugo joined the Department of Family Medicine, it has developed a district-based rotation for final-year medical students and started a Longitudinal Community Attachment for Students (LCAS) where they rotate through different community situations during their training. LCAS was the start of an organic process that led to the emergence of Community Oriented Primary Care (COPC) in 2010. The COPC programme met the government's vision of re-engineering primary care to increase access to health care by sending

community health workers into communities to deliver health care. With colleagues, including Professor Tessa Marcus, Professor Hugo developed the theory and practice of COPC. The programme has been implemented in Tshwane and is supported by AITA Health, a mobile system that documents and guides the work of community health teams.

The implementation of the COPC programme led to the establishment of the UP COPC Research Unit. This unit is dedicated to research focusing on community health and increasing access to health care in under-resourced communities. The COPC has also expanded to communities surrounding mining areas. Since 2019, the COPC has partnered with Anglo American and other mining companies to bring health care services to 24 mines and their communities. This health care response has led to the appointment of many clinical associates, some family physicians and a support team to manage geo-informatics and data systems. During the COVID-19 pandemic, the COPC programme supported mine occupational health clinics, delivering health care to workers and their families affected by COVID-19.

Professor Jannie Hugo

Professor Hugo engages with communities on many fronts associated with overall health. The Community Oriented Substance Use Programme (COSUP) focuses on health care for homeless people who abuse substances. The next step in providing care for people who routinely fall off the radar, is to integrate COSUP into a population surveillance project as part of the South African Population Infrastructure Network (SAPRIN). The first SAPRIN Urban Node has been established in collaboration with the University of the Witwatersrand and the University of Johannesburg in the Gauteng Research Triangle.

Professor Hugo's practice and research have grown into a significant platform of community-based work where service delivery, research and teaching are combined. His life's work has been to treat the cause of the problem rather than the symptoms and has led to improved health care for people affected by COVID-19, TB, HIV, diabetes, substance abuse, poor nutrition and gender-based violence.

Dr Amanda Talma

Dr Amanda Talma

'Much have I learned from my teachers, more from my colleagues, but most from my students'.

—Talmud

Dr Talma says: 'I grew up in a home where my father, a medical practitioner, instilled in me a philosophy built upon the idea that more mistakes are made by people who do not care than by people who do not know. This idea formed the foundation of both my own and my eldest brother's understanding of patient care'.

For Dr Talma, the next learning phase was studying medicine at UP. That was followed by an internship at Tembisa Hospital where she had to apply what she had learned. For the next 30 years, she worked in local authority clinics where she was privileged to have many learning opportunities. She says she learned about different cultures, increased her language and communication skills, was exposed to traditional medicine, learned about interdisciplinary teamwork and providing healthcare with minimal resources available, and, most of all, learned from the community about the community. The teaching she did was mostly empowering patients and carers with knowledge regarding their biopsychosocial health needs.

In 2008, she started as a mentor in the newly established LCAS programme for first- to fourth-year medical students in the Department of Family Medicine.

She later progressed to running the programme. She explains that the programme is important because, in the LCAS, students learn how to consult patients focusing on the holistic (biopsychosocial-spiritual) approach. They experience integrated primary health care outside the hospital environment (from the home to the hospital/clinic and back). To achieve optimal community engagement, the LCAS provides students with a unique experiential learning opportunity. They gain knowledge of health care outside the hospital environment and can perform holistic consultations by their final year.

She reflects on her role in LCAS: 'I share my 40+ years of experience and learning with the young future doctors. They, in turn, teach me about the latest knowledge in the field of medicine. The symbiosis of experience and current knowledge forms a formidable learning platform for both students and lecturers'.

Dr Renata Eccles and Dr Esedra Krüger

Dr Renata Eccles and Dr Esedra Krüger were joint winners of the UP Community Engagement Award. Both are senior lecturers in Speech-Language Pathology in the Department of Speech-Language Pathology and Audiology, and both have taught in the department for more than ten years. The two lecturers have been co-teaching the KMP 482 module since 2019 and coordinate the module together. Dr Esedra Krüger is the head of the Clinic for High-Risk Babies (CHRIB). CHRIB, where a transdisciplinary team renders comprehensive services to the public, has been making an impact on society for the past 31 years. CHRIB is the central focus of the KMP 482 module, through which clients are assessed and then receive early communication intervention (ECI). The clinic forms part of the KMP 482 module in the final year of the speech-language pathology and audiology programmes, but departmental students are trained at the clinic from their first year onwards.

In 2020, the COVID-19 pandemic halted service delivery in many spheres, including CHRIB. The two lecturers proceeded to make significant adjustments to the module in order to ensure that the vital services it provides to the community could be adapted and sustained. A model for the provision of tele-intervention was developed. In this model, caregivers of high-risk infants and young children attend online tele-intervention sessions using a platform such as Microsoft Teams. ECI through tele-intervention encouraged caregivers and students to adopt a caregiver-led approach. Through this framework, the CHRIB team reached their aim of equipping students with the skills to provide continuous, high-quality ECI services under challenging circumstances. The model is one of the first of its kind for South African early communication interventionists, and the training in this model is setting apart the speech-language pathology and audiology graduates from the University of Pretoria.

Dr Krüger and Dr Eccles keep their clinical skills as qualified speech-language therapists and audiologists central to their teaching of undergraduate students. They believe they can help many more vulnerable clients if they train their students to be the best clinicians. Both lecturers have a strong clinical focus in their teaching work with undergraduate students. They emphasise not only good knowledge and clinical skills but also excellent client service and ethical decision-making. Both lecturers received their undergraduate training in this programme at the University of Pretoria and are grateful to their own teachers at CHRIB for setting the tone for their own teaching in this clinic.

Dr Renata Eccles and Dr Esedra Krüger

Curriculum Transformation Project

In 2021, the relaunch of the curriculum transformation project was coordinated by the Deputy Dean of the Faculty of Law, Professor Charles Maimela, in collaboration with the Vice-Principal: Academic, Professor Norman Duncan. A rich and inclusive programme with an academic slant was developed to stimulate thinking about transformation in each faculty and among the students.

Table 6: Curriculum transformation webinars	
13 May	Relaunching UP's Curriculum Transformation for the Next Generation
17 June	Faculty of Law
22 July	Health Sciences and Veterinary Science
13 August	Education, Humanities and Theology and Religion
31 August	Engineering, Built Environment and Information Technology, and Natural and Agricultural Sciences
30 September	Student Representative Council
28 October	Economic and Management Sciences and the Transformation Office
29 October	External stakeholder consultation, with Universities South Africa (USAf) CEO Professor Ahmed Bawa

Relaunching UP's Curriculum Transformation

Conceptualising curriculum transformation

The Vice-Chancellor and Principal, Professor Tawana Kupe, opened the live-streamed 'Relaunching UP's Curriculum Transformation for the Next Generation'. He spoke on 'Implementing a social justice framework to actively ensure metamorphosis of transformation consciousness within the institution'. He defined curriculum transformation as 'the process of creating new courses and curricula in all disciplines within UP, based on the critical examination

and incorporation of current and customary knowledge and legislation' on race, religion, class, sexuality, disability, nationality, and gender, gender expression and non-binary orientation. He then cited the seven areas of curriculum transformation (Madiope and Mendy 2021)[4] in higher education, including decolonising the curriculum, excellence in quality assurance, student access and accessibility, student support, student retention and throughput, technology-enhanced teaching and learning, and reinventing assessment through alternate assessment systems. Professor Kupe went on to stress the rationale for curriculum transformation, and the socio-economic and democratic well-being of South African society. He emphasised diversity, equity, and inclusion as key. He also touched on the fact that curriculum transformation is not only about content but also about teaching approach and urged academics 'to take a critical stance on power and differences in the classroom, interweave multiple perspectives and integrate student voices and knowledge in the teaching and learning process'. He stressed the immediacy of transformation: it happens today, not some time in the future. He concluded: 'An institution is a living organism; it has to continue to shed its skin. Methods have to change. Focus has to change. Values have to change. The sum total of those changes is transformation'.

The Vice-Chancellor and the Vice-Principal: Academic, accompanied by the Deputy Dean: Teaching and Learning of the Faculty of Law, Professor Charles Maimela, and Acting Head of the Department of Jurisprudence in the Faculty of Law, Professor Joel Modiri, led a panel discussion during the live relaunch and set the tone for the 2021 lecture series.

In his address, Professor Norman Duncan discussed the development of the original framework by a small working group. The Curriculum Transformation Framework, first approved in 2017 as 'Reimagining Curricula for a Just University in a Vibrant Democracy', highlights four drivers for curriculum transformation:

- responsiveness to social context;
- epistemological diversity;
- renewal of pedagogy and classroom practices; and
- an institutional culture of openness and critical reflection.

Professor Modiri reflected critically on what these drivers meant in the South African context. He argued: 'Responsiveness to social context demands that UP's curriculum prepare graduates for the context in which they will work' and continued: 'The problems of an unequal society and developing nation need to be prioritised in teaching and learning'. Professor Modiri highlighted the importance of epistemological diversity through a curriculum that meaningfully integrates African knowledge and cultural heritage. When it comes to the renewal of pedagogy and classroom practices, Professor Modiri stressed that classrooms should be culturally inclusive. Then, in terms of an institutional culture of openness and critical reflection, he touched on the environment at the University, its symbols, culture, and staff complement, all of which need to welcome all students.

Professor Duncan added a number of other imperatives that had emerged as drivers since 2017:

1. Future skills and self-organised learning for students and staff
2. Digital literacy, combined with technology-enhanced teaching and learning
3. Practice-based education, embracing the holistic development of students in preparation for professional and occupational practice
4. Liquid learning in times of liquid modernity (Van Dam and Le Pertel 2020)[5]
5. Leadership from within: Empowering curriculum transformation among higher education teaching staff (Patton and Sutton 2017)[6]

He addressed the centrality of the curriculum and its transformation to student success, both at university and after graduation. He reminded the audience that innovations should be educationally sound, student-centred and mindful.

Professor Maimela argued: 'An inclusive approach means a climate in which everyone can endorse their knowledge and talents so that these can be used to the benefit of all'. Both the public good and the actualisation of the individual are important.

Faculty Webinars

Faculties' curriculum and teaching and learning committees are constantly renewing and updating curricula in line with developments in their disciplines/fields, the needs of students, staff, society and industry. Faculties had been applying the Curriculum Transformation Framework since 2017, focusing on the renewal of classroom practices, incorporating different sources of knowledge (such as indigenous knowledge), being contextually aware, emphasising local examples, and incorporating the SDGs within the context of South African and African challenges in particular. Incorporating African epistemologies and the work of African scholars was promoted.

However, it was time to reflect. Professor Maimela hosted monthly Curriculum Transformation Virtual Lectures between June and October during which faculties and students took stock of what they had done since the adoption of the 2017 framework.

4 Madiope, M and Mendy, J. (2021) Analysis of Current Trends in Distance Education during COVID-19: A South African Higher Education Context. The Online Journal of Distance Education and e-Learning, 9 (1). ISSN 2147-6454.

5 Van Dam, N and Le Pertel, N. (2020). Liquid learning in times of liquid modernity. ie Publishing. https://docs.ie.edu/center-for-corporate-learning-innovation/publications/Liquid-Learning-on-Times-of-Liquid-Modernity.pdf.

6 Patton, N and Sutton, K. (2017). Leadership from within: Empowering curriculum transformation amongst higher education teaching staff. Refereed papers from the 40th HERDSA Annual International Conference. https://www.herdsa.org.au/research-and-development-higher-education-vol-40-282.

The Student Representative Council (SRC)

Each webinar incorporated a variety of academic voices from the faculties. Some faculties co-hosted virtual lectures—Health Sciences and Veterinary Science; Education, Humanities, and Theology and Religion; and Engineering, Built Environment and Information Technology paired with Natural and Agricultural Sciences. Only the Faculty of Law presented on its own. There were common themes such as inclusivity, transdisciplinarity, technological advances, stakeholder consultation, and the impact of graduates on society. Interestingly, the Dean of Health Sciences, Professor Tiaan de Jager, stated that 'curriculum transformation is a learning process'. Universities are learning organisations, defined by Senge[7] (1990: 1) as 'organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together'. The University sought, through its relaunch, to reflect on the desired outcomes of curriculum transformation and innovative ways to achieve them in an inclusive and holistic manner.

The Student Representative Council (SRC)

The SRC shared with the University community their initiatives, goals and objectives in terms of curriculum transformation. The aim was to take stock of the University's position in relation to the SRC and the student body it represents, including students' experiences of, perspectives on, and expectations of the curriculum transformation project. The SRC representatives thus shared their successes and failures, as well as various strategies they were aiming to introduce in order to contribute to achieving a transformed, inclusive, and dynamic curriculum.

External Stakeholder Engagement

Professor Ahmed Bawa, CEO of Universities South Africa (USAf), argued in his keynote address that universities are knowledge-intensive institutions created by societies and existing in a political system. He stated: 'Democracies and economies require social institutions that feed knowledge and information into the political, economic, and social system. Universities are charged with the responsibility to produce intellectuals, experts, and professionals, and all these are required by societies. More importantly, universities engage in intensive research'. He went on to say: 'When I think of a decolonised university, it is about the transformation of our structures; it is about the knowledge project'.

The Way Forward

Later in 2021, faculty staff and students started to put in place measures to accelerate curriculum transformation. As part of the review/relaunch of the curriculum transformation initiative, all faculties completed surveys to ascertain their curriculum influences and practices. They drafted reports focusing on the University's four drivers of curriculum transformation. The reports were collated by the Vice-Principal: Academic and will serve as the foundation for further transformation that is faculty-specific.

7 Senge, P. (1990). The Fifth Discipline: The Art and Practice of the Learning Organization. New York: Currency Doubleday.

Faculties

Faculty of Economic and Management Sciences

Enrolment
8 203

Student success rate UG
82,9%

Graduates
2 265

EMS Rising to the Challenge

Professor Margaret Chitiga-Mabugu, Dean, Faculty of Economic and Management Sciences

Professor Margaret Chitiga-Mabugu, Dean of the faculty, lauded staff members' agility and adaptability to complete the 2021 academic year successfully. 'Although 2021 was another challenging year, the faculty managed to shine and propel its vision and mission, and I applaud the tenacity and commitment of staff members for this', said Professor Chitiga-Mabugu.

Teaching and learning have always been important focal points for the Faculty of Economic and Management Sciences (EMS), and 2021 was no exception. Over the years, EMS has invested in innovative hybrid teaching methods to which its students have become accustomed. EMS's development of the online side of hybrid teaching became the solution to addressing the disruptions brought about by the ongoing COVID-19 pandemic from early 2020. Although the pandemic created many challenges, it also created opportunities for the faculty to establish more innovative digital tools in a quest to enhance teaching and learning methods even further and enable support to students in a new academic environment.

Significant time was spent on not only successfully, but also creatively, enhancing hybrid teaching models. This process demanded continual adjustment and refinement. EMS took great care to ensure that lecturers were equipped not merely to cope with but also to maximise the use of the virtual digital teaching and learning environment. In this regard, several online brown bag learning sessions were presented.

True to tradition, despite all the challenges of the fully online environment, EMS has risen to the occasion with well thought through, digitally-enhanced teaching and learning endeavours. These include the use of

- virtual reality (VR) technology to provide students with context and to develop their soft skills;
- gamification software to promote risk and ethical awareness among students;
- e-filing software to simulate the real-world application of tax legislation; and
- a range of software: data visualisation software, supply chain management and audit simulation software, and interactive online competitive interplay software for strategic management simulations.

Professor Theuns Steyn, Deputy Dean: Teaching and Learning (Acting)

Professor Theuns Steyn, Deputy Dean: Teaching and Learning (Acting), asserts that the implementation of digitally-enhanced teaching modalities in 2021 was one of the biggest teaching and learning successes for EMS.

Staff commitment to student support during COVID-19

Finally, no teaching and learning endeavours can be implemented without sound wraparound support for the students. With the assistance of the excellent EMS Student Advisor Team, many students were assisted online or telephonically in this tumultuous year. The team provided academic and emotional support for students, assisting with many issues the students faced.

Annual Teaching and Learning Dean's Awards

During the EMS Annual Teaching and Learning awards, the faculty recognised exceptional innovations. The 2021 winners were Mrs Tanya Hill and Professor Hanneke du Preez (Department of Taxation) for their Virtual Reality Project; Mr Fanie Walters (Department of Accounting) for his innovative engagement and assessments methods (reported under the Mamelodi Campus, where he lectures); and Professor Melanie Wiese (Department of Marketing Management) for her innovative industry projects.

The Virtual Reality Project

The Virtual Reality (VR) Project was also rewarded with the UP 2020–2021 Teaching Excellence Laureate Award. Ms Tanya Hill and Professor Hanneke du Preez, both from the Department of Taxation, are the creators of this intervention in the second year Taxation (BEL 200) classes.

Ms Tanya Hill

Professor Hanneke du Preez

VR is a digital tool that allows the user the perception of immersion into an environment. For students, being visually present in a real-life scenario while immersing themselves in the teaching intervention enhances the quality of education in an environment where large classes are the norm and a challenge. Assisting students with contextualisation remains one of the major challenges when lecturing to a diverse group of students. Ensuring the engagement of every student with the learning content is demanding. When students are faced with content but cannot envision its application, the content remains theoretical and cannot be practically internalised. The ideal situation would be to contextualise the content of taxation by taking the students on a field trip. The cohort (BEL 200 students) consists of approximately 950 students, making a field trip impractical. Virtual reality transferred students to a real-life scenario at venues that would have been impossible to visit in person and introduced real-life scenarios to students with limited or no prior experience of the business/economic sector.

Students immersed in virtual reality

Students immersed in virtual reality

Ms Hill and Professor du Preez took a step into the digital future with this project. In a world rife with distractions, the VR teaching intervention provides a distraction-free world where students are immersed in a focused environment. In this environment, they can connect emotionally to the real-life scenario to encourage motivation.

Online Industry Engagement

Professor Melanie Wiese from the Department of Marketing Management made sure that the department maintained its reputation for building strong and creative online relationships with industry partners and for providing students with excellent industry exposure. During the COVID-19 lockdown, the department continued with practical industry projects in various creative ways.

Professor Wiese restructured the practical

Professor Melanie Wiese

component (BEM 356) of the BCom (Marketing Management) module to ensure that, despite having to move to the online teaching environment virtually overnight, the programme could fulfil its promise of developing work-ready individuals. In the practical project, students typically act as marketing consultants and, in so doing, acquire essential marketing skills, which the industry partner confirmed were attained. However, the module also ensured that the much-needed soft skills, such as time management, project management, teamwork, presentation skills and technology readiness were addressed. Examples include:

- Bag-drop and unboxing: Each team leader received a 'bag-drop' containing the company's products. The leaders had to capture their 'unboxing' of the products and share it online with the team members.
- Movie trailers and video pitches: Some projects were introduced to students with a movie trailer. In other projects, students had to prepare mood boards and videos to pitch their ideas to the industry partners.
- Virtual sales simulations: Students engaged virtually with sales managers as part of their exposure to dealing with customers in a sales situation.
- Online games: Other exciting initiatives included a race-with-a-reward online game using the Socrative app, which familiarised students (in a fun way) with the technological knowledge and instructions needed for their online project. Students who completed the game in the quickest time, with the highest accuracy, received a class coupon that they could exchange during the module for input, for example, a preferred presentation timeslot.

Auditing and Alice, the Robot Auditor

Students from the Department of Auditing were introduced to Alice, the robot auditor used to provide assurance on various activities and transactions within the Bidvest group. Alice has multiple entities spread across the world and more than 130 000 employees. According to Professor Kato Plant, Head of the Department of Auditing, students at the University of Pretoria will take part in a hackathon assignment that will require them to develop automated control activities that Alice must perform.

The original developers of Alice refer to her as 'the real-time overseer of the future who provides on-time peace of mind to organisations'. She has a background in data science and applies machine learning and artificial intelligence to do her job. Alice can use large sets of data and information to perform various functions. For example, she can search through salary payments for valid employees and provide an exception report to management of payments made to fictitious or invalid employees. While it took auditors several weeks to perform a similar function in the past, it can now be performed by Alice within a few seconds. The purpose of exposing students to Alice is to develop their digital savvy so that they can effectively identify IT risks and recommend effective IT controls within a complex business environment.

Recognition for Excellence

One of the goals for teaching in 2021 was 'Striving to have the best faculties nationally and among the best internationally'. Excellence was evidenced by the number and variety of awards and recognitions received by EMS staff and students from professional and statutory bodies, and by the exceptional achievements of students.

Chartered Institute of Management Accountants (CIMA)

Ms Elize Kirsten and Dr Zack Enslin, both senior lecturers in the Department of Financial Management, received global honours at the 2021 Chartered Institute of Management Accountants (CIMA) Excellence Awards. CIMA, a global professional management accounting body that offers training and qualification in management accountancy and related subjects, conferred the awards at the second edition of the CIMA Excellence Awards virtual ceremony on 10 December 2021. The annual awards recognise institutions and individuals across the world going above and beyond to shape the next generation of chartered global management accountants and lead the accounting profession into the future.

Ms Elize Kirsten

Ms Kirsten received the CIMA Teaching Excellence Award for demonstrating excellent engagement

with students and effectively enhancing their understanding of the subject. She says her aim is to best prepare the students for the changing shape of the finance function and to provide students with a practice- and work-driven approach. 'All discussion topics include discussions on real-world examples and/or simulated applications prepared by myself and the students. I encourage discussions of interesting and relevant real-world examples from students, whether online or in class, spurring curiosity and developing lifelong, independent learners', she said.

Dr Enslin was awarded the CIMA Employability Excellence Award for actively promoting engagement between students and employers in the profession. Dr Enslin, who seeks to assist students in being successful in their career endeavours, was recognised for the FIN 702 Strategic Management Accounting Practical Case Study Project. This case study project, which is part of the annual syllabus of the FIN 702 module, helps students gain experience in the business world. It provides students with practical business skills while they analyse businesses and provide recommendations for improvement. The practical experience students gain is also invaluable in assisting them to prepare for job interviews and start off with some actual experience when employed.

The Department of Financial Management was awarded a Regional High Distinction (Africa) for the CIMA Prize-Winner Award and the CIMA Global Excellence Award for having the top students in the Management and Strategic Case Study examinations in 2020 and 2021, as well as for having the third-highest number of CIMA examinations taken in South Africa.

South African Institute of Chartered Accountants (SAICA)

Students delivered by the chartered accountancy (CA) programme at UP again performed brilliantly and also made history with an unprecedented pass rate in the South African Institute of Chartered Accountants (SAICA) Initial Test of Competence (ITC). UP obtained a 100% pass rate in the April 2021 ITC examination for first-time writers and an overall pass rate of 99,4% for all candidates. These historically exceptional results ensure that UP retains its first-place position in the training of prospective chartered accountants in South Africa. The ITC is the first of two qualifying examinations that are written by prospective chartered accountants countrywide. Over the past 15 years, UP has shown consistent excellence and maintained the highest national average pass rate of 94% for this professional examination.

Recognition for Students

Mónica Manilal received the Vice-Chancellor and Principal's medal for excellent undergraduate academic achievement in the Faculty of Economic and Management Sciences when her BCom (Financial Sciences) degree was conferred on her on 28 April 2021.

An economics student from EMS was named the first runner-up in the Annual Budget Speech Competition, and a taxation student was named the 2021 EY Young Tax Professional of the Year for southern Africa.

AACSB Accreditation

Curriculum transformation is an important aspect of teaching and learning, and EMS is committed to effecting changes in the curricula of its degrees that keep the content relevant by integrating the current and global issues within the fields of various disciplines offered in the faculty. In 2021, one of the major interventions that impacted the curriculum transformation of teaching and learning in the faculty was the Association to Advance Collegiate School of Business (AASCB) international accreditation process, which EMS embarked on in 2018. EMS is now on the final step (of the four-step process) and is currently preparing for an accreditation visit in October 2022.

This accreditation process and the AACSB Assurance of Learning (AOL) process is driven by the EMS mission that seeks to 'advance relevant knowledge and develop employable, innovative and diverse graduates to co-create value for society'. Acquiring accreditation is an imperative as it has a major impact on how academic programmes are structured and assessed, which requires rethinking teaching and learning activities in the faculty. Adherence to Standard 8 of the AOL provides for a systematic, evidence-based process of measuring students' competency levels as well as for pursuing interventions that will transform and improve curricula.

Faculty of Education

Enrolment
9 386

Student success rate UG
91%

Graduates
2 170

Teaching and Learning Awards

Celebrating excellence

As is usually the case in the Faculty of Education, the annual Teaching and Learning Awards saw a number of its staff being recognised for excellence in teaching in four categories.

Model Lecturer of the Year Award: This award was made in three categories according to class size—namely small (1–50), medium (51–100) and large classes (more than 100 enrolments)—and based on student feedback on the module for three items: (i) The lecturer was well-prepared, (ii) The lecturer was organised, and (iii) The lecturer communicated with students in a respectful manner.

The winners of these awards were Dr Clinton van der Merwe (Large class), Mr Jody Joubert (Medium class) and Dr Corene Coetzee (Small class).

Departmental Dreamteam Awards: This award was made in three categories according to class size for all modules in a department and was based on student feedback on the module for the following items: (i) Communication through clickUP was clear and on-time, (ii) Whenever I had difficulties, the lecturer provided help using a variety of communication platforms, (iii) I found attending live Collaborate sessions and/or listening to recordings of Collaborate sessions beneficial, (iv) The combination of live online and offline class activities in this module enhanced my learning experience.

The winners of these awards were the Department of Education Management, the Department of Policy Studies, Science, Mathematics and Technology Education, the Department of Educational Psychology, and the Department of Humanities Education.

Future Educator of the Year: This award was also made in three categories according to class size and was based on student feedback on the following items: (i) I was challenged intellectually through the content and/or activities of the module, (ii) The lecturer's online teaching approach created an environment of engagement, (iii) The module promoted the development of graduate attributes.

The winners of these awards were Ms Nelé Loubser (large class), Professor Melanie Moen (medium class), and Dr Sameera Ayob-Essop (small class)

ClickUP Busybee Awards: This award was based on the activity of lecturers on clickUP as a proxy for engagement with their students in the module.

The winners of these awards were Dr Kgothatsi Malatji, Dr Chigoziem Emereuwa, and Dr Annelize du Plessis.

Some winners were asked to comment on their teaching philosophy and how they approached their teaching to learn from them:

Ms Nelé Loubser (Future Educator Award—Large class)

My philosophy of teaching is to create a meaningful, challenging and exciting learning environment. When I engage with my students, I try to model professionalism, good communication, respect, good time management, and learner centredness. Teachers in training are expected to take responsibility in their learning experience and, therefore, I embrace a constructivist approach to teaching and learning through active participation, collaboration, communication, and problem-solving. I enjoy posing critical questions during classes and using real-life examples to contextualise teaching and learning. I plan to continue studying and applying effective methods of teaching and assessment in education. I will continue to share my knowledge, experiences, and skills with my colleagues and students with the goal of shaping the future educators of South Africa.

Dr Clinton van der Merwe (Model Lecturer of the Year Award—Large class)

'If you cannot explain something in simple terms, you do not understand it' (Richard P Feynman). This American physicist espouses a sentiment that undergirds my teaching (and learning) philosophy. Geography, in many senses, is more complicated than physics, and I strive to challenge my student teachers to question and wrestle with their understanding of geographical concepts and the pedagogy of how to teach them more effectively. All the resources I employ and methodologies I use to teach a geographical idea or thought are guided by this principle: being able to explain something as simply as possible means you have grasped the depth and nuance of that particular concept. You will thus be able to teach that concept efficiently.

Dr Annelize du Plessis-de Beer (clickUP Busybee Award)

My teaching philosophy is embedded in the social constructivist paradigm. This is a sociological theory that sees development as socially situated and new knowledge as constructed through interaction with others. Social constructivism advocates holistic, equal, and sustainable learning. It caters for an inquiry-based approach where students are active participants—they do, they learn, they ask critical questions, and they further investigate by means of deep learning to construct and apply. It also prepares students to participate in a community of practice (CoP) where peer mentoring is evident. Within this CoP, I believe that students are capable of generating new knowledge, as mentioned above, learning to solve problems (problem-based approach), communicate effectively, and collaborate with one another to achieve common developmental goals. In this regard, I think that social constructivism accommodates a student-centred approach that favours my teaching style and allows me to facilitate learning. I would argue that, in order for any learning to take place, one should create a safe and supportive learning environment where students experience empathy and inclusion and where they feel free to share their opinions. I believe that any conducive learning environment is built upon strong values and ethics. In the modules I facilitate, I value mutual respect, honesty, integrity, fairness, social justice, and inclusivity, with special reference to my students with disabilities. I further value responsibility for actions taken and discipline. In this regard, I expect students to adhere to deadlines and submit assessments on time. Within this safe and supportive learning environment, it is paramount to offer students a teaching toolbox in which they can gather life skills they obtained throughout the module, including becoming a passionate, excellent teacher and a lifelong scholar.

New African Languages Curriculum: Sepedi, Setswana, and Isizulu Teachers for Foundation Phase Teaching

Professor Azwihangwisi Muthivhi believes that the Department of Early Childhood Education (ECE) is ushering in a new crop of teachers for post-apartheid South African schooling, potentially to change, once and for all, classroom teaching and learning in South Africa's primary school classrooms.

It is no secret that reading and numeracy skills have been identified as two of the most critical areas for development within the schooling system. To achieve this goal, the provision of relevant teacher education programmes equipping young teachers with relevant knowledge and skills, especially in the foundation phase level of schooling, becomes a critical imperative.

One of the fundamental questions that therefore needs to be addressed is how to solve the complex language development problem for the reception year, Grade R, and the Grade One to Three foundational level of schooling in South Africa. One crucial way to contribute towards the solution to the language problem in South African schooling is undoubtedly in the provision of good quality teachers who are well trained to teach in the languages that their learners speak.

Language and learning/knowledge are two aspects of the same unitary process, as recognised by Russian psychologist Lev Vygotsky. He cited the words of a famous poet of his time: 'I forgot the word that I wanted to say. And my thought, unembodied, returns to the realm of shadows'. The inextricable relationship implicated in this line clearly suggests the critical importance of language for thinking and concept acquisition and development. Therefore, the critical importance of learners' home languages for their learning success and concept development during school learning cannot be overstated.

As a result, and as a contribution to redressing generations of marginalisation of South African indigenous languages, the Department of Early Childhood Education at UP has introduced the teaching of Sepedi, Setswana, and Isizulu as First Additional Languages (FAL), from 2021, under the Literacy Studies modules within the BEd (Foundation Phase Teaching) programme.

To complete this important curriculum development initiative, the department is further introducing Sepedi, Setswana, and Isizulu as home languages with effect from 2023. This will complete the African language curriculum development initiative and launch a new era in South African schooling where appropriately qualified, African-language foundation-phase teachers will begin to teach in schools. Armed with relevant knowledge and skills for conversing with young children in their home languages, while simultaneously leading them through meaningful learning and concept understanding, these teachers will certainly possess the necessary tools for transforming the schooling system for good.

This initiative therefore represents a significant milestone, not only for the ECE department, but for the University. The coordinator of Literacy Practices modules in the department stated: 'This is the first time in the history of the University of Pretoria's ECE department that students received education and were able to submit a formal assessment task in a language other than English and Afrikaans'. This is a significant transformation.

Meanwhile, this initiative will contribute to changing wrong attitudes and perceptions about African languages' curriculum practices. There are widespread, unwarranted assumptions that African languages cannot be used as media of instruction. Another associated misconception that will be dispelled is that studying in African languages would, in itself, impede English language proficiency and limit employment opportunities in the future.

The Department of Early Childhood Education is committed to contributing to the development of learning resources in African languages and the necessary pedagogic skills for student teachers who will in future teach in resource-scarce African languages classroom contexts.

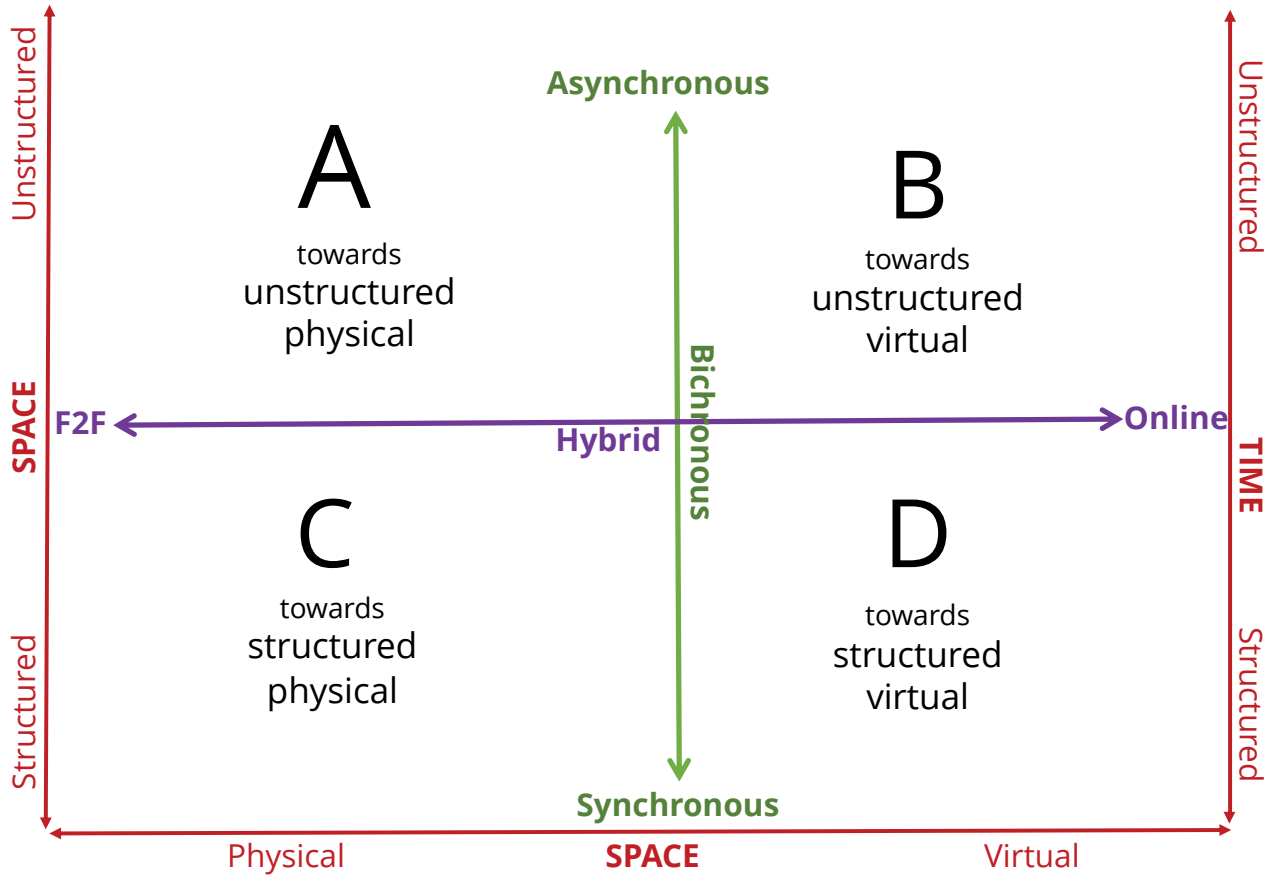
In pursuing these transformative African language curriculum goals, the Department of Early Childhood Education is in no way oblivious to the enormous challenges that lie ahead, including attitudinal and resource-related ones. To this end, the department will undoubtedly require appropriate funding, without which the full implementation of a transformative African language curriculum that is geared towards building a firm foundation for future learning success for South Africa's children will, unfortunately, remain a pipedream.

However, the department is convinced that, with all the institutional support and the generosity of various stakeholders in society, it is undoubtedly on the right course to realise truly transformed foundation phase level schooling in South Africa in the not-too-distant future.

Reimagine Teaching and Learning at UP through Dynamic Learning Design

Teaching and learning experiences over the past few years through student unrest and different levels of lockdown initiated a need at the University of Pretoria to take a renewed look at our teaching and learning practices. The Living Lab for Innovative Teaching at UP (LLITUP) research unit introduced an initiative during which lecturers could collaboratively harness lessons learnt from these experiences to reimagine one of their modules for 2022. The initiative aimed to create an open, user-centric, multidisciplinary environment, driven by lecturers and their real-life experiences—in line with the values of a 'living lab' approach. This approach provided a safe space where lecturers could share and learn from one other on an equal footing in a positive and fun environment.

Professor Ronel Callaghan maintains: 'We are starting to understand that we have to look differently at our use of physical and digital spaces, utilisation and planning of time, as well as other aspects of teaching modalities and assessment practices'.



Teaching modalities

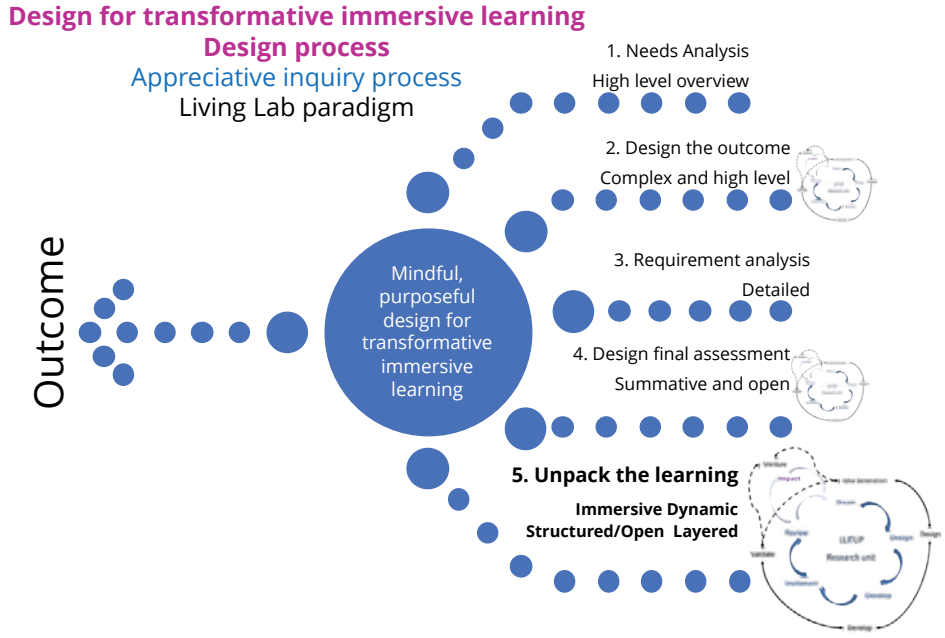
The process was planned according to the Appreciative Inquiry design process (Whitney & Cooperrider 1998; Razzetti 2019). It included the phases Define (which states the goal of the inquiry), Discover (finding the current strengths), Dream (allow for exceptional and innovative possibilities to reach the goal, based on the strengths discovered), Design (develop a plan that can make a dream, or at least a part of the dream, reality), and Destiny (implement the design through immersion in the reality). The Appreciative Inquiry process links well to the Living Lab research process—idea generation, design, develop, validate—which underpins all the design procedures within LLITUP.

An open invitation for participation was shared with all lecturers in the University. In the end, there were 22 active participants in the initiative. Nineteen were academics from five faculties: EMS, EBIT, Humanities, and NAS. Fourteen academic departments, as well as Education Innovation, were represented. The interaction commenced on 6 October and concluded on 24 November 2021. Cooperation between participants was managed through an online community of inquiry (Garrison, Anderson & Archer 2010). Sessions one (introduction and define), two (discover) and seven (design package) were presented fully online. Sessions three (dream) and four to six (design) were presented in hybrid flexible (HyFlex) format. Resources such as session recordings, guiding resources, and other digital tools were distributed to all participants by email.

Participants indicated that the environment created through the Community of Inquiry and the Appreciative Inquiry process was advantageous for the design process. The process of sharing and listening to others, as well as the need they identified in themselves to reimagine their practice, helped participants to start to think differently. The interdisciplinary nature of the space meant they could learn from others. The inquiry-based and question-driven approach allowed participants to focus on their own individual modules. They appreciated the structured process and the dedicated time. Those from other campuses who attended HyFlex sessions on Groenkloof Campus mentioned the value of working on their planning in a different environment. Participants indicated that the process impacted on the way that they think about education, how they will teach and assess, and how they will design for student learning in future.

Academics came to realise the importance of planning, resulting in a well-structured study guide and clickUP page, which can manage the teaching and learning processes. Underlying skills and values need to be consciously planned and incorporated into all modules. Participants reiterated the values underlying 'teaching the UP way': prepare, engage (reflect, discuss, project), and consolidate.

The original aim of the initiative was to bring academics together in an environment where they could reimagine one of their modules with other lecturers from different disciplines in the University. This collaborative initiative strengthened academics who wanted to interrogate their own practice towards the design of transformative, immersive teaching, assessment and learning practices.



Living Lab paradigm for design

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From Isolation to Cultural Integration: Educating South African and Greek Students through Art

Depicting cultural integration: Banners for Liberty

Banners for Liberty

'Banners for Liberty' was part of an interactive art project initially planned for an online collaboration between the Theatre Department of the Aristotle University of Thessaloniki (AUTH) and the Department of Humanities Education (Art Education) at UP. This joint undertaking occurred during the COVID-19 pandemic, when the South African students had just entered their lockdown restrictions while the Greek students were just celebrating their coming out of their longest lockdown experience.

Inspired by Greece's 200th anniversary of the revolution against the Ottoman rule (1821–2021) and the 27th anniversary of the liberation of South Africa from the apartheid regime (1994–2021), students from Thessaloniki (Greece) and Pretoria (South Africa) were asked to create their own 'Banners for Liberty' as national, religious, social, and cultural symbols to express visually their own ideas for freedom in a contemporary context.

Creations in Isolation

During phase one, each student sat behind their personal computer in isolation, participating in an extraordinary educational experience through interactive Zoom meetings. They exchanged creative ideas, shared process problems and tested production solutions in the context of two culturally and linguistically different countries. The willingness of all students to search for common ground became a desire to explore what 'liberty' meant to all of them. On the completion of their creative endeavour, the South African students assessed the work of their Greek co-students and vice versa. The need to express themselves collectively and communicate through their individually created artworks was manifested in the positive exchange of ideas. That was the end of phase one.

Online meetings between students from their respective Departments, discussing their ideas

Students working on their banners

Arrival of the Artworks

The anticipation to find out what the South African students had produced and how their banners would combine with the Greek students' artworks materialised in phase two. After the arrival of the South African banners in Greece, they were placed next to the Greek ones, creating another perspective and dimension. Greek students were able to realise visually how their individual works formed part of a collective whole.

The opportunity given to these students to raise their own 'Banners for Liberty' led to two successful exhibitions in Greece, the first hosted at the Pedagogical School of the Aristotle University Thessaloniki and the second at the Bensousan Han/House.

The most rewarding educational experience for the students was the positive reception that their works had, both as individual creations and as part of a collective synthesis. The success of this endeavour was sealed by the attention given by the media (YouTube, press, radio), both in Greece and South Africa. The banners will be brought to South Africa in May 2022 to be exhibited at the Javett-UP Art Centre in Pretoria in June 2022.

Exhibition at the Pedagogical School of the Aristotle University Thessaloniki

Lessons Learnt from Teaching OPV 122 in 2021

One of the goals in OPV 122 was to motivate students in terms of their own learning and to develop a growth mindset, a concept introduced by Dweck.[8] The essence of her argument is that individuals who believe that they can develop persist in the face of setbacks. Given the key role that student motivation plays in learning, making their own learning more meaningful seemed vital not only to educational reform but to thriving during the COVID-19 pandemic. The lecturers' strategy was to assist students to discover personal connections between their lives and what they learn in OPV 122. By helping students to discover the value of learning in terms of their own lives and the development of a growth mindset—rather than imposing only academic goals on students—lecturers reasoned that OPV 122 could boost student engagement, persistence, and attainment. In addition, they wanted students to realise that their attitude can make all the difference, especially if they cultivate a more positive outlook by means of a growth mindset.

Students shared some of their stories at the end of 2021 when they had to reflect on their own learning and development:

Student 1

> I already had certain perceptions about the module as it is a necessary requirement for the degree that I am studying (BEd in senior phase and further education and training)—something that I needed to do to tick off a list. However, after engaging with the contents of this module, I can honestly say that it has equipped me with many positive skills that I will one day hopefully utilise in the classroom. OPV 122 has answered all the big questions that one has. The why, how, and when of the process of development and learning. I have learned the process of the operation of the human brain. Not only do I now understand why and how my brain works in the classroom but also how and why others function the way that they do. With this insight, I believe it will assist me greatly in the classroom one day with my learners. OPV 122 has also taught me a growth mindset. During the first semester, I had many doubts about myself and my capabilities. I did not make exam entrance for one of my modules, and where before I would have given up and filled my head with negative thoughts, I now use phrases like 'I failed, but I will come out of this stronger'. I completely believe that I would not be here if I did not allow myself to open up to the experience and knowledge that OPV 122 taught this semester. This experience of a growth mindset and continuous learning of knowledge means that I am more confident in myself. With this gained confidence, it has significantly increased my drive to want to do better. This time last semester, I had average grades, but now I have distinctions in all but one of my modules. That one module has increased from a 30% to a 60%. Without OPV 122 equipping me to use positive affirmations and in turn a growth mindset, I would not be the learner that I am today. This was a very valuable experience for me as a learner as my grades have reaped the benefits of the lessons that OPV 122 taught me. I have also learned skills that will benefit me in my profession one day. Going forward, I will continue to use these positive affirmations and continue to learn and grow to strengthen my mindset. I will also use the lessons that were taught to me in OPV 122 to teach others.

Student 2

> My mindset has transformed over the course of this module. I decided to spend the semester focusing on using the techniques learnt in this module to try and attain a growth mindset, and my results have been incredible. I have practised techniques such as viewing my challenges as opportunities, setting long-term goals and working hard to achieve them, working on not being so hard on myself and not beating myself up over my failures. I now have a very positive mindset, and I have been so motivated to achieve my goals, and I haven't been letting anything stand in my way. I have started believing more in my capabilities, and I feel very confident that I will succeed in my studies as well as all of my other future endeavours. My work ethic has improved drastically thanks to this module. This module had so many tests, and because of this, I said to myself that I have to work a lot harder on putting in the work to do well. Being online has made it difficult up until now to find the motivation to work to the best of my ability, but because of my goal to achieve well in this module, that changed. I worked consistently throughout this module and put a lot of effort into learning all of the content, and through this process, I managed to gain the ability to motivate myself to work hard again even though we were still online. This motivation has seeped into my other modules, as well as other areas of my life, and I now have no trouble with getting myself to do the things I need to do. I have learnt a lot about where my interests lie as well. Before taking this module, I was under the impression that I would only want to focus on young adults when practising in my profession, and I had little interest in small children. After taking this module, I have been so fascinated in learning more about the development of children, especially throughout their school years, as I have learnt about how much of an impact these years have on the rest of people's lives. I have realised now that when I am a psychologist one day, I would actually love to work with smaller children as I feel like this is the area where I can really make a huge difference in the greater scheme of their lives. Overall, this module has opened my mind up to things I didn't know before and has been beneficial for my emotional, intellectual, and mindset growth this year. My OPV 122 journey is coming to an end but everything I have learnt will help me on my journey in life.

Student 3

> I've discovered a lot about myself, including how to perform effectively under pressure. In an online learning environment, everything happens at once, and you may be expected to focus on multiple tasks at once. This allows me to multitask and operate under pressure while remaining in control. I've learnt not to procrastinate and put aside work and duties till the last minute, but to get started on them as soon as I have free time so that I

8 Dweck, CS. (2006). The New Psychology of Success. New York. Random House.

Education students complete their degrees in 2021

may think about and reflect on them. OPV 122's content has educated me a great deal about my body, brain, and organs in general. By trusting in my own and my brain's potential, I've embraced this growth attitude! I know my intellect and abilities increase when I tackle difficult things, use the right strategies, and don't give up. I've always done brain-based tasks by looking at and understanding the content in OPV 122. I've learned a lot of new skills in terms of my brain and body. With a growth mindset, we believe that if we practise enough, we will get better at something. Thanks to the growth mindset, I could shift from a confused and irritated mindset to a more successful and effective one. I gained confidence in myself and began to believe in myself. After some time and patience, I noticed changes. I faced obstacles even after fulfilling a few goals, but the growth mindset taught me that failure is a part of the process and that every setback is an opportunity. It has motivated me to take risks and reconsider why I do what I do. This method has given me a new perspective on things that has benefited me in every aspect. By taking my goals seriously, I could achieve them. To realise my heart's desires, I prepared a complete action plan and pledged to follow it every day—every single day, without fail. If you have the right habits in place, you can do anything.

It seems safe to conclude that these students understood the growth mindset and consciously implemented its principles, not only in this module but across their programme. They are not only more positive students but more successful ones as well.

Faculty of Engineering, Built Environment and Information Technology

Enrolment
11 258

Student success rate UG
83,5%

Graduates
2 479

Creating Student Engagement in Online Classes for Large Student Numbers

SWK 122 teaching team

The curricula of the Faculty of Engineering, Built Environment and Information Technology's engineering programmes include service modules that are taken by all first-year students. One such module is Statics 122 (SWK 122), which is taught by a team of four lecturers in the Department of Civil Engineering: Anneke Roux, Talia da Silva Burke, Billy Boshoff and Phia Smit.

This module introduces students to the application of mathematical principles to forces in physical systems. This is fundamental knowledge that all chemical, civil, computer, electrical, electronic, industrial, mechanical, metallurgical, and mining engineering students, as well as students in geology, need to acquire before they can progress to more discipline-specific modules.

As this is a core module, it has a very large student enrolment, with up to 1 500 students across the various programmes. It is thus classified as a high-impact module. Such modules typically have a pass rate below 75% with more than 500 students per class. SWK 122 therefore requires dedicated intervention to ensure student success. The transition to online learning necessitated an even more innovative approach to ensure that students were able to grasp the content of this challenging module adequately.

Prior to the COVID-19 pandemic, SWK 122 was presented to three separate groups of 500 students each. They attended four lectures and two tutorial sessions a week. In addition to this contact time, the students worked through two lecture assignments a week in their own time, as well as a tutorial preparation quiz. The tutorials were presented over three days in multiple venues, where the students had the opportunity to work through set examples and receive input on procedures to solve them. All students worked on the same problems, and tutors were on hand to answer questions. No formal instruction was given. According to Da Silva Burke, one of the module coordinators, 'this was the coalface of the module'.

Following the campus-wide lockdown, this module was presented fully online. The contact time comprised pre-recorded lectures with discussion classes on Blackboard Collaborate every three to four weeks. The tutorial sessions were large, online, tutor-led group sessions. The students did their two lecture assignments and weekly tutorial preparation quiz in their own time, but with the introduction of an additional tutorial worksheet. This worksheet contained the same questions as the standard worksheet that was presented in contact classes, but the students had to complete it using their own values, which involved considerable additional work.

Several challenges were experienced with this online model in 2020. These included tutorial time being very passive and the tutors working through the memorandum without the students actually engaging with the material. As the sessions were led by the tutors, there was not much interaction between the lecturers and the students. The students also had to do additional work on their own, which was not adding any significant value. The students often left the tutorial worksheets until the last minute, not submitting them on time. This meant that they were not getting the assistance they required from the tutors.

In preparation for 2021, the lecturers considered what they could do to increase student engagement in the module. The first change made was to increase the number of discussion classes to a weekly session on Blackboard Collaborate. The second focus area was to consider the tutorial sessions. Three main changes were made. Firstly, smaller groups were formed so as to stimulate discussion and encourage students to work independently. Secondly, the lecturers did away with the additional individual tutorial worksheets and introduced qualitative tutorial feedback. Finally, the tutorial sessions were overseen by a lecturer, with a single lecturer being responsible for a particular session, as far as possible. This increased focus on making the lecturer more accessible contributed to rapport-building and increased student engagement. It also led to an improvement in class attendance.

The tutorial session was a large-group session, which started with the presentation of a plenary session by the lecturer, in which a general overview was provided of the concepts covered in the worksheet. This was followed by breakout sessions of 20 to 25 students, each facilitated by the tutor team. Each tutor was responsible for two to three student groups. The session concluded with lecturer feedback and a high-level overview of the memorandum, which also took the form of a plenary session.

According to Da Silva Burke, the new format with smaller groups worked well when there was good class attendance, as active student participation makes the process more beneficial for all involved. It also encouraged peer-to-peer engagement. However, poor class attendance lowered the productivity and interaction between the student and the tutor. The tutorial feedback proved to be helpful in understanding how students were engaging with the material and assessment opportunities.

Considering both the benefits and the challenges of the intervention, the lecturers of this module hope to be able to transition to in-person tutorials if circumstances allow. However, until such time, the small-group model seems to work well in engaging students and encouraging interaction, although this requires support from a large tutoring team.

Technology Offers a Myriad of Options for Online Assessment

In the transition to online learning, not all the challenges experienced by students and lecturers were related to the virtual presentation of course material. The evaluation of the final output of the teaching process also proved to be problematic. The summative assessment upon conclusion of a module not only determines whether students have mastered the course material but also whether they are able to proceed to the next level.

In EBIT, lecturers were encouraged to determine the assessment method that worked best for their particular circumstances. It soon became clear that a method that worked well for a small group would not be suitable for a large group of students that needed to be assessed simultaneously.

Online assessment for Fluid Mechanics and Simulation-based Design module

Ken Craig, a professor in the Department of Mechanical and Aeronautical Engineering, considered the available options when deciding on an assessment method for his third-year Fluid Mechanics and Simulation-based Design classes. Some of the methods that were already in use included online assessment using Blackboard's tools in clickUP, as well as an electronic assessment management system that had been developed in the Department of Electrical, Electronic and Computer Engineering. However, Professor Craig decided to investigate tools that were available in the software programs to which students and lecturers had easy access and that they were already using. These included tools such as Google Forms, Microsoft Excel and Adobe Acrobat. He started experimenting with these tools soon after the University moved to online teaching in March 2020 and has learnt several lessons in the process.

'I was looking for a system that students could use effectively, was time-efficient for both students and marking staff, and would streamline the academic process', he said. As all students and staff members had access to the full set of Google tools, including an institutional Gmail address, he investigated what was available on this platform that could perform the same function as the other online assessment tools. Each student and staff member's Gmail account provided them with access to all the apps in the Google suite, including Google Forms, Google Sheets, Google Docs and Google Drive.

Professor Craig also discovered that by using Google Forms for online assessment, he could include multiple-choice questions, as well as text and numerical answers, allow file uploads, and do automatic grading. Further benefits included the fact that one could reuse previous forms, and the forms are automatically saved to a user's Google Drive.

To ensure that students would be familiar with using this tool by the time it came to the all-important semester tests and final examinations, Professor Craig introduced Google Forms early in

the semester. He launched the tool in a trial run with quizzes that did not count for marks, followed by a multiple-choice class test, which counted for marks, and a class test that included the uploading of a scanned file. The eventual semester test and examination included both multiple-choice items and a scanned file that would need to be uploaded. An added benefit for students was the fact that Google Forms could be accessed from any Internet-connected device. They therefore did not need a desktop computer but could make use of their smartphones wherever they were able to access the Internet. They did not need expensive scanning equipment either, only a piece of paper that could be scanned using a mobile camera scanning app. The students' phones proved to be the most efficient means of scanning material for uploading, as the resulting files were small in size and easy to transfer with limited data.

Professor Craig required the students to register on Google Forms in the first 30 minutes of a test or examination. This process required them to upload a scan of a written page with their signature, including their initials, surname, and student number. This confirmed their attendance and also gave the students peace of mind that their connectivity was established for further uploads during the assessment.

While the students were completing their questions electronically on Google Forms, the lecturer or teaching assistant was able to view a live Google Sheet with pertinent information about the assessment event. This sheet could then be downloaded as a Microsoft Excel file. Statistics related to the question paper were also available, such as how many responses a particular question received. Microsoft Excel was not only used to process the data that had been imported from the Google Sheet; lecturers could also use it for the automatic marking of multiple-choice or typed answers by making use of a formula. To assist with the marking of uploaded answers, the lecturer made use of Adobe Acrobat to generate fillable pdf forms. This process was assisted by a template generated using Microsoft Word, which included the marking rubric. Once the questions had been marked, students received feedback in the form of the rubric and their mark breakdown.

By making use of this process, Professor Craig found the students' post-test perusal process to be more efficient, and it required fewer modifications because of the transparency of the assessment process. Significant time was saved in capturing and processing the marks, and the feedback time to students was significantly reduced. Fillable pdf forms were also used for the marking of practical reports, which saved time with the capturing of marks. Students' assessments could easily be shared with external examiners by giving them access to the Google Drive folder and the summary documents.

Professor Craig believes that this process has benefits that support their continued use even upon the resumption of physical classes. He recommends the use of Google Forms for quizzes and class tests, particularly owing to the time saved on the electronic marking of these tests that could be put to better use providing students with additional feedback and tuition. He also plans to continue using Acrobat fillable pdf forms to mark physical tests and practical reports as the post-processing of marks is much more efficient.

Providing Experiential Learning Opportunities in an Online Environment

Karen Botes is a lecturer in the Department of Architecture who is translating her research passion into an experiential learning opportunity for third-year students specialising in landscape architecture. She believes that students learn best by adding real-life experiences to their theory through multidisciplinary collaboration. Her teaching has enabled her to transfer her interest in sustainable design and novel approaches to the creation of green infrastructure and to enhance ecosystem services through design.

The teaching and learning initiative for which Botes received the Faculty of Engineering, Built Environment and Information Technology's Teaching and Learning Award for 2021 started as an innovation in 2020 for the third-year Plant Science module (PWT 322). This module emphasises plant community conservation in the urban environment, based on ecological principles, including the technical aspects of planting in these complex environments. During the Integrated Design examinations in the previous year, she identified a gap in students' ability to apply the theory they had learnt in practice. Her approach was therefore to address these knowledge gaps through student-centred, experiential learning coupled with multidisciplinary collaboration.

Plant community conservation in the urban environment based on ecological principles

In 2020, Botes received a SoTL grant from UP's UCDP (funded by the DHET). for her project titled 'African food crops in living wall systems'. To assist students to gain a better understanding of the learning outcomes of PWT 322, she exposed them to two real-life projects in which green principles were implemented to support ecosystem services: one on the Menlyn Maine precinct in Pretoria East and the other at the University of Pretoria's Future Africa campus. She also included a real-time case study to attune students to the local context through the planting of African food crops on the Future Africa campus in two different typologies of green wall systems.

However, the lockdown regulations that were imposed to manage the COVID-19 pandemic compelled Botes to reflect on what she wanted her students to achieve online. This led to a collaboration with the Faculty's education consultant, Dr Adriana Botha, who provided a different perspective on how to achieve set outcomes in the online environment. This, in turn, led to the application of novel teaching and learning methods.

Botes made use of her SoTL Grant to purchase a 360° camera, which enabled her to make use of Blackboard's interactive video function. By viewing a recording of the construction of projects that showcased green infrastructure, the students could witness the process virtually, which assisted them in understanding the module outcomes as an alternative to physical site visits.

The objective of the SoTL project was to analyse and define student learning by engaging virtually with real-life projects and transdisciplinary collaboration. Botes applied Kolb's experiential learning cycle to her teaching. This entailed involvement in the concrete experience, reflecting on the experience, learning from the experience, and solving problems based on the experience. As such, she engaged with her students through collaborative assignments, workshops, and discussions to understand different viewpoints, followed by constructive feedback. Students also collaborated with one other and the lecturer through a WhatsApp group. Finally, self-paced learning took place through interactive videos with in-video assignments and quizzes.

The activities that formed part of this initiative required the students to conduct research and present their outcomes to their peers through clickUP. In the process, Botes was able to create an awareness of African food crops and the role of designers in addressing the United Nations' SDGs in the South African context.

Botes alternated between teaching methods to keep learning vibrant and included the flipped classroom model, case studies, experiential learning, asynchronous and interactive videos, cross-disciplinary discussions, and synchronous lectures via Blackboard Collaborate.

Botes facilitated student learning by engaging her students in four intentional activities to achieve the module's learning outcomes. The first activity entailed real-time online interviews with suppliers, horticulturalists and landscape technologists to discuss different living wall systems. The various professionals introduced the students to different prototype living wall systems. This enabled the students to develop an insight into the benefits and disadvantages of each system. The second activity involved students reflecting on their experience in teams, where each team had to investigate a different prototype of a modular living wall system. Botes divided students into groups, which comprised a mixture of students on different academic levels. The groups were required to conduct research and compile the technical specifications of each system and analyse the resilience, sustainability, economic feasibility, social benefits, and provision of ecosystem services in the South African context. The third activity entailed a discussion between different student teams where they debated the advantages and disadvantages of the different systems. The fourth activity was the students' examination assignment. Here, the students had to implement what they had learnt by selecting a constructed wetland, living wall or rooftop garden system to enhance ecosystem services as part of their design project.

Finally, Botes held project workshops, followed by online engagement with each student on a one-to-one basis to ensure that the learning outcomes were fully achieved. Owing to the small number of students enrolled for this module, she was able to pay personal attention to each student, thereby focusing on their well-being, which is vital in a creative learning environment.

Social Interaction Brings about Meaningful Learning

Group problem-solving activity

Senior lecturer in Chemical Engineering Elizbe du Toit has spent years getting to know how students learn. Fundamental to this process, in her experience, is student engagement. Once students become actively involved in planned class activities, they have the opportunity to take ownership of their learning. Nevertheless, students typically lack the confidence required to expose their own vulnerabilities in areas where they still need to learn. This gives lecturers like Du Toit the chance to create opportunities where interaction is essential.

She subscribes to the social constructivist learning theory, credited to Lev Vygotsky, a 20th-century Russian psychologist. This theory views human development as a socially mediated process. It states that people acquire knowledge through collaborative dialogue with more knowledgeable people,

referred to as 'the more knowledgeable other'. Although the active role of the students in acquiring the building blocks to construct their own knowledge and skills is acknowledged, Vygotsky's theory also recognises the powerful role of interaction with the more knowledgeable other in the developmental process.

For knowledge transfer to take place between the student and the more knowledgeable other, interaction needs to occur through mediation. This process allows students to appropriate the cognitive tools that make the construction of knowledge possible by doing activities or tasks they cannot do on their own. In keeping with the principles of the social constructivist learning theory, mediation happens in the zone of proximal development (ZPD). According to Vygotsky, the ZPD is a social space that only opens through interaction.

Du Toit has been applying the concepts of social constructivist learning theory to her second-year Thermodynamics module and her fourth-year Reactor Design module. Teaching and learning activities for these modules have been compiled through the use of scaffolding to allow students to navigate the ZPD. Scaffolding is a form of assistance that allows students to solve a problem or carry out a task that would be beyond their abilities given the lack of access to a more knowledgeable other in the ZPD. Mediation by fellow students (in carefully facilitated group work), teachers' assistants, or lecturers therefore guides students' efforts and ultimately simplifies their roles but not the task at hand.

In building the module content, differentiated scaffolding was introduced in recognition of the fact that not all students require the same amount of scaffolding to complete knowledge transfer. Continuous formative assessment activities were developed to monitor student learning and provide ongoing feedback on progress, misconceptions, and areas for possible improvement at a point in time when the student would still have the chance to improve their skills and understanding before undergoing summative assessment.

Formative assessment takes the form of online tests with intentional immediate feedback. These additional asynchronous activities serve to open the ZPD more inclusively. For each study theme, students have to solve a 'big problem', which comprises a scenario with lots of information, the big question, and smaller questions.

The first level of scaffolding breaks the big problem down into smaller questions that attempt to lead the student through the process on the 'how should I think about this problem' path. Further scaffolding is provided through the use of immediate automatic feedback options. If students submit the incorrect answer, they receive hints on what may be wrong, which content had to be considered, or what mistakes are frequently made.

The assessment allows for multiple attempts and contributes to a small percentage of the students' grades. This reduces the risk and anxiety associated with the typical test scenario and allows students to improve their understanding continuously without the high stakes of summative assessment.

The course content was delivered asynchronously through pre-recorded videos, lecture notes, and textbook references. Delivery was supported by a schedule, with weekly Monday reminders of the content and activities students should have engaged with. Synchronous opportunities included one three-hour tutorial session each week, where the class was divided into groups to participate in a text-based interactive problem-solving session, facilitated by teachers' assistants.

As a test of other methods that meet the requirements of the social constructivist learning environment, Du Toit attempted to enhance the experience of the tutorial session with live Blackboard Collaborate sessions. Although this platform meets the brief, her experience has shown that it excludes students from meaningful interaction for a variety of reasons. These include students feeling intimidated by the text-based platform, data limitations, and being too shy to ask questions in these forums. While some students flourished, others just participated superficially or watched the recording of live sessions asynchronously. These barriers to interaction are not present in the asynchronous online test environment.

Du Toit reflected that her experience of the level of student engagement has made her confident that this method is one that she will continue implementing in her teaching, whether she is required to teach online or in person.

Interacting with Students to Create a Community of Practice

The transition to online learning over the past two years has changed many aspects of higher education. One important question regards the extent to which the role of universities, as agents of social change, is enhanced or diminished by the use of online platforms as opposed to conventional methods. David Walwyn, a professor in the Graduate School of Technology Management, has been investigating this issue, particularly the influence of his courses on students' views on environmental sustainability.

During the Faculty of Engineering, Built Environment and Information Technology's annual Teaching and Learning Seminar, held on 25 November 2021, he offered his thoughts on encouraging students, through virtual interactions, to move from awareness to accountability on an individual level. Although this transition is important across various disciplines in the pursuit of social justice, it is important in his own field of teaching on energy systems as a means of encouraging personal accountability for climate action.

According to Professor Walwyn, universities can play an important role in sustainability transitions: 'The application of knowledge acquired by students through their studies can be instrumental in transforming their approaches to developing socio-economic institutions'. However, he believes that the link between curriculum content, student awareness and learning, accepting accountability, and climate action is tenuous. He argues: 'Students may be exposed to the imperative for climate action but may fail to consider it a priority or even relevant to their working lives'.

Energy from the sun is sustainable

Energy from coal-powered stations is not sustainable

Wind as a source of energy is sustainable

Professor Walwyn is of the opinion that effective and persuasive teaching can alter students' personal value systems or 'ideological assemblages'. In his interaction with a group of postgraduate students from the energy sector, he observed that the cohort held a wide range of perspectives on the future of the energy sector and the imperative for an energy transition in response to climate change. He wondered whether it was possible, through engagement with certain topical events, to change the views, and therefore the individual behaviour, of these students through the course content or the teaching approach. He refers to this as the students' personal epistemologies, which reflect how they think and thus govern how they behave.

Professor Walwyn admits that such personal epistemologies are difficult to change: 'One needs to develop cognitive flexibility by learning new things and being open to new views'. This compels a lecturer who is intent on changing attitudes to focus on the interface between the students' cognitive flexibility and the lecturer's discursive power (the art of persuasion). This approach focuses on designing interventions to change attitudes that will impact on the choices students make when they participate actively in public life. By enabling students to make responsible choices about the kind of society they wish to live in, lecturers are empowering them to initiate change by embracing a sense of personal accountability.

The teaching approach Professor Walwyn advocates to transition from awareness to accountability is known as the Precaution Adoption Process Model. This proceeds from an initial stage of being unaware of the issue, followed by a stage of being aware of the issue, but unengaged. Next comes a stage of being undecided about acting. From this stage, one can decide to act or not. If one decides to act, action will follow, and then maintenance (behaviour).

Considering identity and individuals' connection to nature (their need to act in an environmentally responsible manner), Professor Walwyn states that individuals tend to act in accordance with cultural norms. He sees identity as being established through repetitive behaviour. Similarly, a connection to nature entails a process of

socialisation that leads to a specific relationship with the environment. Deep learning is important in this regard, as the most effective teaching leads to new understanding and empowers an individual to act.

Professor Walwyn has found that online teaching offers both new opportunities and the dissolution of previous assumptions. He therefore set out to test the hypothesis that virtual teaching may support the development of individual capabilities that does not occur in group sessions. He conducted a small study to determine whether there was evidence of changing attitudes among a group of master's students in energy leadership. He showed the students images of the Chernobyl nuclear disaster in Ukraine in 1986. This was followed by a podcast debate to determine whether the students considered nuclear power generation to have a higher risk than other forms of alternative energy, whether nuclear was more reliable, whether the benefit of nuclear was worth the risk, and whether nuclear was considered a better option.

Although the findings of this study determined that virtual platforms were indeed useful for creating debate and discussion, they had little impact on the students' ideological assemblages. There was less peer pressure, but also limited intimacy, thus a limitation to the development of trust. The cognitive flexibility and level of persuasion were probably also lower. Professor Walwyn also found there to be no common understanding of core concepts such as connectedness to nature. Ultimately, he was disappointed that the exercise did not prove to be transformative in terms of creating a sense of accountability.

Professor Walwyn concludes that there is a need for a global dialogue on what works and what does not work in the virtual classroom, accompanied by the development of suitable teaching materials to support the development of an ethical and sustainable society. The development of a sense of accountability is pertinent in any subject concerned with promoting social transformation as an essential underlying element of its curriculum. It is therefore essential that academics not only focus on developing graduates who can become technical and academic leaders, but also graduates who realise the importance of living a life led by principles, rather than self-satisfaction.

Creating a Sense of Community in the Online Space

In EBIT, the dedicated FSAs play an indispensable role in ensuring students' emotional well-being and making sure that they are able to cope with any feelings of anxiety that might be hindering them from performing at their best academically. This was still true when lectures could no longer take place in person.

In 2021, the faculty's enthusiastic team of advisors made use of an innovative online student support platform, known as Kumospace, to ensure that students did not feel isolated and could interact with other students who were experiencing similar challenges in the online environment. This intervention could be accessed by all the faculty's undergraduate students on the EBIT undergraduate module on clickUP.

Kumospace is a free online platform that allows students to move between virtual rooms that simulate a friendly, welcoming space that is not intimidating and allows them to speak their minds or even just relax with a virtual lemonade.

The lawn in front of Engineering One, pre-COVID

The lawn in front of Engineering One, post-COVID

This provided students with the best replica of a social engagement group that was possible in the online space.

The intervention, which was launched following the identification of the need for face-to-face contact to assist undergraduates who were dealing with emotional and academic challenges, had a number of specific aims. These included providing support with stress and anxiety and increasing lecture attendance and engagement, study time, motivation, and mindset.

Students self-enrolled in groups of no more than 25 to participate in this four-week intervention. The groups comprised students from various EBIT degrees and year groups. The Kumospace sessions were scheduled whenever a student had an available slot of 30 minutes to an hour available on their timetable.

According to Caitlin Vinson, one of the senior advisors, who designed the unique virtual rooms for this programme, most interest in this intervention was from senior students. She explains: 'They wanted an online platform where they could mingle in the same way as they would on the lawns in front of the Engineering Building on Hatfield Campus'.

The initial contact with the students was through a Google Form where they were asked to identify topics that they would like to discuss. These included topics such as balance and holistic wellness, stress management, loneliness, the impact of COVID-19 on student life, and lack of motivation. The students then received a welcome pack, which included a set of pre-test questions, the housekeeping rules, and a disclaimer that this was not a private space, so the students should not assume that anything they said would be confidential.

Some of the pre-test questions proved to be quite revealing and provided the advisors with a good perspective on the challenges students were experiencing. In addition questions about how they felt the semester was going and whether they were attending lectures, they were asked how anxious they felt (38,1% of the respondents indicated that they felt very anxious) and whether they felt part of the UP community (42,9% indicated that they felt isolated from the UP community). When asked what made him decide to join the group, one student responded: 'I want to believe I am not the only one struggling'.

Each of the Kumospace rooms was designed differently. In the first week, the students were introduced to the Welcome Room. Here, they could break out into different spaces to chat. They encountered several non-invasive questions, which gradually became more personal, but they were provided with the option just to relax or chat with others who were encountering a similar challenge, but still within a neutral space. This led to the students warming up and being more open.

In the second week of the intervention, they were introduced to the Wellness Wheel. Here, they encountered the five pillars of wellness: social, emotional, spiritual, physical, and academic. They split up into smaller groups where they could talk about each pillar and identify what they were good at and what they were prepared to commit to achieving. Student peer advisors were available to provide guidance and, if a student were identified as needing counselling, they received a private message referring them to these services and were followed up on later.

The third week introduced students to the Stress-less Room. As students experience different causes of stress, they were encouraged to share what it was that was causing them stress. They were also given coping strategies to manage their stress that were helpful and effective.

In the last week, the students were introduced to the Motivation Room. This is where they were encouraged to focus on the reason why they were studying a particular degree and to identify their values, goals, and future plans. By helping them visualise their future role as a professional, the advisors could improve their motivation to study and complete their degrees.

Upon conclusion of the intervention, which took place in the middle of the second semester, just prior to their final examinations, the students admitted to feeling less isolated, more motivated towards their studies, and more inclined to attend lectures. Some of them revealed that they just needed a platform where they could talk to their fellow students.

As this was the first time that this intervention was practised, the FSAs learnt a couple of lessons that they can apply during a future application. However, the students who participated saw improvements to their emotional well-being during challenging times.

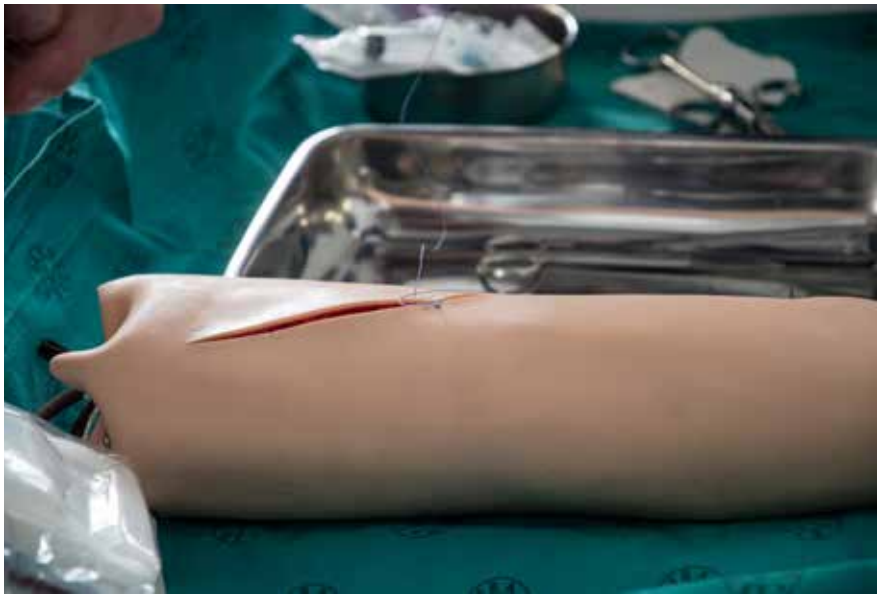
Faculty of Health Sciences

Enrolment
8 263

Student success rate UG
96,9%

Graduates
1 678

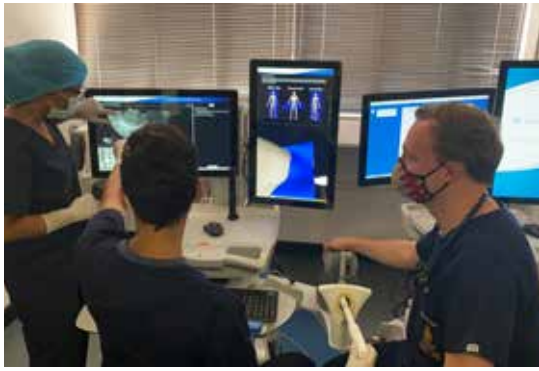
Reimagining Simulation-based Education in the Undergraduate and Surgical Skills Laboratory



Simulation-based education in the skills laboratories

Simulation-based education in the skills laboratories

The faculty's Undergraduate and Surgical Skills Laboratory was the first of its kind in Africa and, since its inception in 1996, it has continually proven its worth in the training of health care professionals. The Undergraduate and Surgical Skills Laboratory is a well-established learning environment and forms an intricate part of simulation-based education for all students within the Faculty of Health Sciences. Over the last two years, the laboratory has expanded from the initial facility located in the HW Snyman north wing and now includes an operational unit in the south wing and the laparoscopic surgical training centre. The faculty's current simulation-based education activities and research support the clinical training platforms for medical, dental, and healthcare sciences. The faculty is geared towards SMART, technology-driven, simulated care activities that include but are not limited to virtual reality, artificial intelligence, and the development and manufacturing of life-like manikins and organs, providing students with the opportunity to practise varying levels of skills in a safe environment.



Laboratory facilities

According to the Head of the Laboratories, Professor Ronel Herselman: 'The worldwide lockdown owing to the coronavirus pandemic certainly presented challenges to teaching and learning in simulation-based education, but at the same time afforded us the opportunity to expand on our SMART technology initiatives'. Highlights of reimagining teaching and learning in 2020/2021 for modules that rely on simulation-based education included the following:

Trauma Day

- The first in-person trauma-day simulation with videography for feedback (BSportSci II students) in collaboration with the Department for Education Innovation, ROCKET HEMS, Gauteng Emergency Medical Services, and the University of Pretoria High Performance Centre.

- Online videos explaining all aspects of personal protective equipment during a pandemic: This was especially relevant to senior undergraduate students who continued to work in the clinical training platform amid the pandemic. The videos also commemorate one of the last lectures given by Professor Anton Stoltz (1 April 1961 to 20 May 2020), a top infectious disease expert and talented hero who dedicated his life to saving others and continues to educate UP students on personal protective equipment and its relevance.

- Videos demonstrating practical skills for various undergraduate modules such as the insertion of an intravenous infusion and dosage, administration of an intramuscular injection, venepuncture, conducting a primary and secondary survey, two-rescuer CPR with a BVM and AED, basic airway manoeuvres, fracture immobilisation, and cervical spine management: The Department for Education Innovation also assisted with branching scenarios in the videos to aid students in preparing for simulation-based education in an online manner. In keeping with the University's policy to support free access to teaching and learning material, discussion is underway to avail the content to other South African universities.

In light of costs and the fact that international programmes in simulation-based scenarios do not necessarily cater for low- and middle-income countries, Health Sciences collaborated with researchers/consultants from the Exxaro Chair in XR Technology and the Department of Information Science. As a result, they are finalising a virtual reality scenario for practising the jaw thrust manoeuvre and a 360° video scenario for advanced cardiac life support.

The first ever dry basic laparoscopic skills workshop for paediatric surgery registrars, in collaboration with Karl Storz and Johnson & Johnson, focused on camera navigation, dexterity, and suturing. The faculty developed several

Trauma Day

3D-printed infant thorax and abdominal manikins in collaboration with Anatomoulds to simulate pathologies such as trachea-oesophageal fistulas and oesophageal atresia.

Health Sciences is proud to provide students and outside individuals with a platform where they can synthesise their didactic and clinical knowledge into a meaningful whole before entering professional practice.

Improving Dentistry through Industrial and Systems Engineering

The School of Dentistry housed four BEng (Industrial and Systems Engineering) students during 2021 to complete their final-year projects. The main aim of their projects was to optimise processes and systems within the school to ensure efficiency.

The first project aimed to improve the design and processes within the dental laboratory where work is undertaken for student clinical cases. The recommendations of this project are being considered to upgrade the laboratory in future. The second project focused on the optimisation of the Dental Imaging Unit, including processes linked to teaching and learning. Some of the recommendations of this project have already been implemented by means of a SoTL grant, which was awarded to the school to upgrade the GoodX Dental Studio software program. This will improve the efficiency of the assessment of radiographic reports written by students and comply with the current legislature. The third project looked at enhancing student timetabling using existing software applications. The fourth project rendered recommendations to optimise patient flow in the Patient Management Section at Pretoria Oral Health Care Centre. Optimisations in these areas will positively impact the students' clinical training experience. Projects like these also create a sense of drive towards improvement in the school. This has a knock-on effect on how staff and students perceive the environment.

This strategic partnership will continue in 2022 looking to improve other areas of operation that indirectly influence the clinical training of dental and oral hygiene students. The projects were jointly supervised by academic staff from the School of Dentistry (Professor Corné Postma, Professor Sophy van der Berg-Cloete, Professor Leanne Sykes, and Dr Shoayeb Shaik) and Industrial and Systems Engineering staff (Dr Wilna Bean).

Ms Olivia Hitchcock

A final-year BEng student, Ms Olivia Hitchcock, played a leading role in connecting the School of Dentistry and Industrial and Systems Engineering in 2021.

Using Magnification Technology to Enhance Clinical Training in Endodontics

The Department of Odontology has recently introduced magnification (loupes) into the clinical and pre-clinical training platforms in endodontics. Dentistry involves sub-millimetre surgical skills that require excellent vision. Literature highlights the many benefits of magnification. Ergonomics and posture of students are improved, as well as the quality of clinical work when introducing magnification. The 3,5 times magnification loupes with headgear were acquired from Zumax, South Africa, and staff training was introduced by the Endodontic team (Drs Martin Vorster, Glynn Buchanan and Ilana Middleton under the guidance of the Odontology HoD, Professor Zunaid Vally). Student and staff feedback has been excellent, with students of the opinion that the loupes help make difficult tasks enjoyable. The Department of Odontology is excited about the introduction of this world-class adjunct to endodontic teaching and that this addition will not only benefit students but also increase the quality of clinical service delivery at the Pretoria Oral Health Centre.

Student using loupes in odontology

Postgraduate Teaching and Learning in the Department of Oral Pathology and Oral Biology

The ramifications of the COVID-19 pandemic have included multiple scheduled conferences being cancelled across the globe. To counter this loss of academic development and networking, Dr Liam Robinson initiated an alternative means to facilitate the ongoing enhancement of academic knowledge in line with the 'new normal' of virtual online meetings. International top-ranked pathologists were invited to present current or challenging

topics to an international audience as part of the Invited Guest Lecture Series. These presentations were well attended and received positive feedback from postgraduate students and pathologists in South Africa and numerous international colleagues from around the globe.

Student Support: Orthodontic Textbooks from the Gift of the Givers

Textbooks in dentistry are unfortunately very expensive and often beyond the reach of most undergraduate students. Fortunately, through the efforts of Dr Mohamed F Suliman from the School of Dentistry, a donation of 320 prescribed textbooks in orthodontics was received from the Gift of the Givers. One of the Gift of the Givers projects is Education Support, which aims to relieve the burden on students in South Africa, given their limited resources. The textbooks remain the property of the school and are rotated annually. This project is in line with the school's focus on student support.

Case-based Learning in the School of Dentistry

The School of Dentistry has a proud history of the scholarship of teaching and learning in the domain of case-based learning, an 'authentic' method to teach students clinical reasoning before they perform clinical training in a workplace. It is also used to teach cases that are not often seen in the clinic, using online and classroom platforms.

Research outputs in this domain (2005 to current) include six publications in the *European Journal of Dental Education* and one in the *African Journal of Health Professions Education*. Scholarship activities focused on authenticity, constructive alignment, integration, scaffolding (using the 4C/ID-Model of Complex Learning), and students' self-regulation in this context. Current research (MSc project) by Dr Jacqueline Thompson from the Department of Dental Management Sciences is looking at identifying threshold concepts in preclinical case-based learning to improve instructional design. Threshold concepts are concepts that students find particularly problematic in their learning, holding them back. The project is being conducted in the form of action research to evaluate current practices in the domain of case-based learning and ensure continuous improvement. It is overseen by Dr Imade Ayo-Yusuf and Professor Corné Postma. Dr Thompson makes use of interactive group work to facilitate the development of reasoning skills. The results of this study are due to be reported in 2022.

In Maxillofacial Pathology, Dr Ciska-Mari Schouwstra places emphasis on the training of oral physicians to manage patients with disease appropriately by developing skills in critical thinking, collaboration, and communication during case-based learning. The focus for the student is that of ownership of learning and principles incorporated in the learning process include retrieval practice, spacing, interleaving, metacognition, and a flipped-classroom approach.

In Diagnostic Imaging, the focus is on integration by means of holistic analysis of clinical cases that inform radiological reports and treatment plans. Dr Chané Smit introduced game-based learning in the clinical setting for radiological diagnoses using Hangman and Pictionary. She also initiated an educational Instagram page for 'beyond-the-classroom learning'. This social media platform is used to post interesting radiological cases with added polls and questionnaires for student engagement. Dr Smit won a Faculty Teaching and Learning Award for her innovations in 2021.

Dr Chané Smit busy with game-based learning in the Dental Imaging Unit

The Department of Periodontics and Oral Medicine: Engagement in the Scholarship of Teaching and Learning

Dr Michaela Beetge from the Department of Periodontics and Oral Medicine is UP's latest qualified SAFRI fellow. Her educational project investigated the perceptions and experiences of specific CPD activities offered in South Africa and the motivation for selecting and taking part in them. She has a special interest in faculty development and presented a workshop on 'Supervising Research' with a fellow SAFRI member, Dr Keshana Naidoo, at the 2021 SAAHE congress. Currently, Dr Beetge is in the process of exploring 'how to bridge the gap between clinician and educator' and hopes to do further research on this topic.

Dr Michaela Beetge

The Department of Periodontics and Oral Medicine is also pro-actively involved in embracing the new challenges presented to them during the COVID-19 pandemic with specific reference to the online teaching environment. Staff members in the department have taken this opportunity to learn as much as possible so that they can be the best teachers that they can be. The greatest challenge, however, is to get students to take responsibility for their own learning processes. Under the leadership of Dr Jeanine Fourie, staff members of the department have incorporated in their course the use of discussion boards, wikis and journal reflections. They also found that the use of learner-generated content can encourage student engagement, collaboration, and creativity, and this approach was presented at the Flexible Future Conference 2021. They are excited and hope to explore this topic further in the future.

Updating the Oral Health Section of the Community Health Care Workers Manual: Registrar's Rotation in Community Dentistry

The community dentistry registrar, Dr Baloyi, as part of his training, has to complete a rotation at the Gauteng provincial level. Dr Baloyi's task, according to the directive from Gauteng province, was to update the oral health section of the community health care workers (CHCWs) manual. This manual, which was designed by experts in optometry, pharmacy, nursing and family medicine, among others, is aimed at preparing CHCWs to go out into the community and provide education on health-related issues. The oral health section, although included in this manual, was outdated and hence needed to be improved.

Her mandate was to identify appropriate literature on dental diseases, treatment and prevention; then discuss this with various stakeholders to get their inputs and eventually write her findings up at a basic level that could easily be understood and applied by CHCWs. The task was completed within the stipulated timeframe, and she was then asked to present the oral health section to all of the managers and oral hygienists employed in the Gauteng public oral health sector.

The oral health section was approved at the national level and has been included in the revised CHCWs manual. It is envisaged that when CHCWs go out into the community, they will provide oral health education, dietary advice and referrals of patients where necessary, as well as indirectly helping in the prevention of dental diseases. This will hopefully improve the dental IQ and motivate communities in rural areas to seek dental care earlier on in order to prevent the progression of dental diseases and improve their management.

Making Rhyme and Reason: The Art of Teaching Biostatistics Online

> Hey diddle diddle, the Median's the middle;
> you add and divide for the Mean.
>
> The Mode is the one that appears the most,
> and the Range is the difference between.[9]

'They' said it could not be done. However, the biostatistics team believed, and they succeeded. They presented two related epidemiology and biostatistics modules online in 2021 for the very first time. Each module consisted of seven synchronously followed weeks. There was a one-week break between the two modules. Students were asked to spend approximately 18 hours on their learning each week.

Biostatistics is an applied discipline that involves the application of statistical methods in the health and public health sciences. The focus is on the analysis and interpretation of quantitative data that are collected from observational studies. Because of this focus, students are required to study epidemiology concurrently with biostatistics. The Postgraduate Diploma in Public Health (PGDPH), offered in the School of Health Systems and Public Health in collaboration with Comprehensive Online Education Services (COES) includes two compulsory modules on epidemiology and biostatistics.

The first of these two modules focuses on epidemiology (with some biostatistics and statistical software) while the second concentrates on hypothesis testing (with some epidemiology). The modules are at an introductory level. The school also offers intermediate and more advanced modules for those who wish to continue with quantitative research at the master's level.

9 Anonymous. This is a popular mnemonic device that is widely available and adapted by many users. The origins seem lost in time.

The first module (HME 711) was offered twice, with 761 total enrolments (including second enrolments from students who had failed the first offering and decided to repeat the module). Ultimately, 741 of the 761 students (97%) passed the module by the end of the second offering. The second module (HME 712) was offered once with a 99% pass rate.

The presenters claim to have learnt many important lessons during the inaugural presentation of the modules in 2021. They will be using what they learnt to strengthen and improve their 2022 offerings.

These are some of the tactics and methods used in 2021:

1. Lecturers used alternative ways to let the students introduce themselves: either they needed to choose their biostatistics (the subject) heart rate (flat line, barely a pulse, strong pulse) or play a guessing game ('guess Prof's age').

2. To stimulate engagement, badges were used, mostly for completion of activities.

3. Adaptive release was used to implement honesty agreements with regards to student honesty in their assignments and the download of the licenced Stata statistical software (a site licence was purchased for Stata, and lecturers were concerned about possible piracy).

4. For additional practice, an exercise book was created so that those who wished to practise more would have examples available with explained, worked solutions at the back of the book.

5. Summary 'fact sheets' and videos were created for each topic.

6. Students were asked to either read from a prescribed textbook or watch a video, then they were given unlimited attempts to practise either on paper doing calculations or on Stata entering data and doing calculations. These practice attempts were graded after submission. Such a session was then concluded with a single-attempt quiz.

7. Students also had to submit screenshots of what they did,which had to include their Stata screen logo and personal name so they could be authenticated.

8. Some assignments were divided in two: students had an opportunity to submit, receive feedback, correct their assignments, and submit again.

9. Online meetings were held on Sunday afternoons to start each new week and answer queries. These meetings were recorded, and the recordings were made available for those who were unable to attend the meetings. About 10–15% of the students attended these meetings.

Here are some of the lessons learned (for improvements in 2022):

1. Working online is like a game, and some students immediately look for ways to win points without spending more time or by accessing the answers somehow (eg, using WhatsApp). It was sometimes obvious from the emails lecturers received that a few students had skipped a large part of the material and gone straight to the tasks that earned points, with little practice, understanding, or insight. These students did not do well.

2. The team will be changing the quizzes in 2022 so that each student will get a randomly selected set of questions, where each question is randomly selected from a pool of five equivalent and similar questions with different answers.

3. Some students completed quizzes towards the end of the modules, using answers selected at random, or even submitted blank answers, in order to comply with compulsory submission requirements. The reason was that they knew that they had accumulated sufficient points to pass already. From 2022, they will also be required to obtain a sub-minimum mark for each 'week' separately in order to obtain a credit for the module.

4. Some students asked that the book of exercises be expanded as they would have liked even more examples for practice. The team will be doing this in 2022.

5. In spite of the lecturers' attempts, there were reports from Stata regarding piracy of the software using UP's site licence and popping up in several distant countries. In 2022, Stata will only be available to registered SHSPH students (and staff) via a University of Pretoria password-protected server. Downloads will only be made available if requested via the bona fide UP email address. Installations will be automatic so that no codes or passwords will be given out.

6. Many of the email requests for assistance that were received during 2021 were about technical issues such as how to submit assignments or where to post a submission. The team is working hard to make the instructions clearer and also making annotated screenshots available to show the students exactly what to look for.

7. With a class of over 500 students, manual grading is an issue if students are to receive feedback in good time. Although lecturers had teaching assistants to help with marking, they usually had full-time employment elsewhere and could only spend much time grading over weekends. In 2022, the team will convert as many of the manually graded tasks as possible to automatic grading. In addition, an experienced teaching assistant who lives in a North American time zone has been employed who will be available to assist the night owls when they have problems.

The following QR code will take you to a collage of images from the modules:

The School of Healthcare Sciences' Students as Well-rounded Professionals

Students in the School of Healthcare Sciences are groomed to be well-rounded professionals through work-integrated learning and a community engagement project. The report touches activities undertaken in the Occupational Therapy, Nursing and Radiography departments.

The Department of Occupational Therapy

The Department of Occupational Therapy (OT) set about reimagining the university and curriculum transformation, as well as community teaching and learning, with a focus on community engagement and service learning.

OT has advanced in its hybrid approach and capacity to ensure that graduates are ready to embrace a post-COVID-19 pandemic reality. This improvement has been effected through various adaptations in the community engagement and service-learning modules. In this time, OT staff members have seen how the virtual environment has enhanced their practice and thus will continue working this way into the future.

University Social Responsibility Network (USRN) Summit 2021

It was integral to the success of the project that students and community members formed a part of the dissemination of the work being done. Therefore, conference presentations and articles were co-presented and/or co-authored with community members and students. This collaboration was possible through the virtual environment. Using this process, the OT community module delivered seven presentations at the USR Summit, five other international conference presentations, seven national presentations and 13 articles in the University community engagement newsletter, Lentšu La Sechaba (https://www.up.ac.za/education-innovation/article/257709/community-engagement).

Overall, the students have benefited from the hybrid activities and are very competent in working through the requirements of the 21st century as professionals.

Occupational therapy students at work in the community

Occupational therapy students at work in the community

Nursing Students Master Technical and Presentation Skills

Nursing science students were provided with the opportunity to work in collaborative learning groups to develop presentations on certain topics. They presented their findings and literature reviews on the Blackboard system, and the presentations were shared with other students. Students had the opportunity to master the technical and presentation skills and do their own presentations in creative ways. With regard to clinical practice, staff members had to demonstrate clinical skills by making their own recordings of implementing a clinical skill. As far as possible, students practised the skill at home with a friend or family member, recorded their practices and submitted the recordings to the lecturer for evaluation and feedback. In the final examination, the students were able to go into the skills laboratory or hospital and demonstrate and record the clinical skill with the consent of the patient. These recordings were used for assessment purposes, using a rubric. Privacy, confidentiality and informed consent were practised at all times

Radiography students on work-based learning

Radiography students on work-based learning

Radiography Integrates Theory-based Learning into Community-based Practice

The high incidence of cancer and associated comorbidities in South Africa requires student perception to change regarding their role as health care professionals. The Department of Radiography ensures that this is done through work-integrated learning.

From the theoretical aspects, students learn about various clinical conditions, including cancer, and how they impact quality of life. Through work-integrated learning, the students get the opportunity to provide imaging services through different radiographic imaging modalities. To further enhance their growth as healthcare professionals, radiography students engage in community-based projects and patient care in real-world settings.

The humanity and care factor of a health care professional can only be developed as a transferable skill when students engage with communities at grassroots level. During these sessions, students are provided with the opportunity not only to share their knowledge on topics related to radiography (imaging, radiation therapy) but also to assist in answering questions from community members. These questions are not in the typical 'made-for-a-test' format but actual questions from people suffering from a disease.

Through these cancer care package outreaches, students develop a sense of pride in assisting others in need and an innate desire to apply their expertise as members in a community when they become professionals in their fields.

Faculty of Humanities

Enrolment
6 126

Student success rate UG
88,4%

Graduates
1 697

2021 was a challenging yet exciting year for the Faculty of Humanities. The broad range of teaching disciplines makes the faculty a place of diversity, creativity and innovation. With the School of the Arts now in a phase of consolidation, the faculty began to lay the foundations for a School of Languages, which is likely to be launched in the next year. This consolidation will encourage closer collaboration between lecturers and provide opportunities for further engagement between students of languages, cultures and literatures. Under the leadership of the Dean and Deputy Dean: Teaching and Learning, student success rates remained consistently high.

Professor Vasu Reddy, Dean: Faculty of Humanities, and Professor Sandy Africa, Deputy Dean: Teaching and Learning

Dr Nisa Paleker Receives Humanities Teaching Excellence Award

Dr Nisa Paleker of the Department of Historical and Heritage Studies (DHHS) received the 2021 Humanities Teaching Excellence award: Category A. Dr Paleker has been a member of DHHS since 2012 and teaches world history at the first-year level. She also teaches world history in world cinema to honours students.

Dr Nisa Paleker

Dr Paleker earned her award based on her teaching philosophy, emphasising a relational, context-within-a-context approach. She places her students and the teaching and learning environment within the larger contexts of the institution and society. The design and content of Dr Paleker's courses, especially the honours course on film and history, display an innovative and creative approach to the study of history that brings it to life via the medium of film. In this way, Dr Paleker has sought to make her subject accessible and relevant in a post-literate world dominated by visual stimuli. Her modules encourage students to engage with the past in meaningful and creative ways while maintaining fidelity with the requirements of her discipline, as well as the larger goals of the University and society.

Information Design in Motion

Kyle Rath, a lecturer in information design in the School of the Arts, received the 2021 Humanities Teaching Excellence award: Category B. This category recognises outstanding achievements in teaching practice under difficult and exceptional circumstances. Mr Rath has presented the information visualisation in motion ('infomotion') project since 2015. The project is presented to fourth (final) year BA (Information Design) students and builds on knowledge with which students have engaged from their second and third years of study.

The project is centred on the rhetorical nature of visualising information. Students collate, critically engage, and then visually distil the relationships between multiple sources and datasets to produce a meaningful visual narrative for a determined audience. The project requires students to conceptualise, script, storyboard, design and animate a 40–180-second 'explainer' in the form of an animation (or 'infomotion'). Students present an aspect of their VKK 402 research in an engaging, descriptive, and easily understood way to make their research accessible. As the final outcome of the project is an animated piece, students are taught to apply their graphic style in the form of motion, ie, how imagery helps narrative progress over time. For example, Sarie Louw and Nele Schafer explore the concept of mimetic scapegoating within the context of COVID-19 conspiracy theories.

Mr Kyle Rath

Louw and Schafer, COVID-19 conspiracies, 2020. Screenshot storyboard of animation

Although the fundamental learning outcomes of the project have remained consistent for five years, two main elements have been adjusted because of COVID-19. To lighten students' loads, the project was set up as a 'group' project, where students could work in pairs rather than individually. A second adaptation is that lecturers have had to adapt teaching modalities to encourage at-home exercises and an independent work ethic and, most importantly, make the project tools accessible across different income groups despite not having access to industry-grade equipment—cameras, lenses, lighting, iMacs, Adobe software, and processing power.

The project hosted a vital five-day in-person film workshop where the lecturer runs through all aspects of filmmaking from using cameras, camera equipment, lenses, tripods, dollies, gimbals, etc, to setting up shots and directing. This teaches students how to access and direct different aspects of motion as storytelling devices. Conditions during the pandemic obliged the lecturer to think innovatively, since access to campus and the equipment was largely restricted. Ways were sought for students to 'build' inexpensive, DIY versions of the department's studio equipment at home.

Consequently, students created homemade honeycomb diffusers using black straws and cardboard. For high-end dolly systems (for smooth, continuous motion), they used skateboards or rubber-wheeled wooden frames. Instead of colour gels, they used coloured cellophane. Inexpensive white shower curtains took the place of professional diffusion umbrellas, and foil wrapped around flat wood or thick card took the place of commercial studio reflectors.

Mr Rath's teaching philosophy is to provide students with comprehensive insight into the process of 'design'. He is not only interested in cultivating strong research, critical thinking, and conceptualisation ability but also in guiding students through the production, experimentation, prototyping, crafting, and reflective stages of design. As a result, students leave BA (Information Design) as well-rounded design practitioners, ready to enter the design industry. Mr Rath explains: 'I focus my teaching philosophy around three core teaching principles. Firstly, I aim to provoke empathy through research and conceptualisation. Secondly, I guide students in crafting rhetorical eloquence in delivery and finally, I encourage dialectical reflexivity through exposure'. Over the past few years, the outcomes of the project have been well-received within the design industry. Several student projects have also earned Loerie awards. The Loeries are generally regarded as the pinnacle of design awards across Africa and the Middle East.

Mr Rath invites everyone to 'Feel free to follow and support the students' design journeys on Instagram (@upinfodesign), Facebook (Visual Arts Department) and YouTube (Information Design)'.

Examples of inexpensive DIY substitutes for professional video studio equipment

Third-year Social Work Students' Ubuntu Buddy-support Project (MWP 361)

COVID-19 shocked everyone into an alternate reality. Dr Gerna Wessels, Ms Felistus Ndamba and Ms Hlogie Poopedi of the Department of Social Work and Criminology state: 'The lockdown restrictions not only impacted the community engagement of our social work students, but also affected their lives in different ways, and "loss" and "isolation" became themes in the lives of many. Not only did our students experience the loss of "being a student on campus", but they also experienced the loss of opportunities to become involved in spaces where they could contribute to the well-being of others'.

Dr Gerna Wessels, Ms Felistus Ndamba and Ms Hlogie Poopedi

On 16 March 2021, the Department of Social Work and Criminology celebrated World Social Work Day with the theme 'Ubuntu'. Although South Africans are familiar with this term, in 2021, the department and its students experienced its true texture. The COVID-19 pandemic drastically changed the way things were done and 'brought about a renewed awareness that we should be less preoccupied with our own situations and focus on our obligation to contribute to the well-being of others by making a difference in their lives'. This situation sparked the idea of involving third-year students in their local communities in an Ubuntu Buddy-support Project.

Online teaching meant that many students were studying from homes spread across all the provinces. However, a number of students had returned to their accommodation in Pretoria. The Ubuntu Buddy-support Project worked as follows: lecturers challenged students to find anybody in their community who needed support. This could be an older person who was isolated and lonely, a child struggling with online learning, or a toddler experiencing difficulty adapting to the Early Childhood Development (ECD) Centre after a long absence. Students who returned to their University of Pretoria accommodation were invited to become involved by supporting fellow students struggling with isolation.

Students spent four weeks with their 'support buddies'. Their focus was on meeting the support needs of the 'buddy', which could be accompanying them to the shop, being with a pensioner in the South African Social Security Agency (SASSA) queue, playing games with a child, or assisting a learner with online learning. During all such activities, students adhered to COVID-19 measures, such as social distancing and wearing masks. This involvement was not a therapeutic intervention but merely 'being there' for someone who needed support. The students were aware of resources available in their own communities and could refer their 'buddies' to the appropriate facilities for assistance.

During the two weeks before conducting the project, online classes focused on the meaning of being socially responsive and the principles of ubuntu. Students shared their ideas before moving into their communities.

For accountability, students had to reflect on their experience within 48 hours by using the journal tool on clickUP. Lecturers were able to detect any uneasiness and possible personal stress. They were able to comment on the reflections and also follow up through WhatsApp calls to debrief and guide subsequent contact sessions.

The students' reflections showed that this was a powerful experience since many had never before reached out to strangers to offer support. They reflected on how they were able to 'give life' to the principles of ubuntu and experience the true meaning of 'I am because you are'.

Improving Digital Accessibility in the Online Learning Management System

With teaching and learning moving almost exclusively online during the COVID-19 pandemic, universities were obliged to consider the accessibility of their learning management systems and digital content—especially for students with disabilities.

Digital accessibility refers to the process of making digital products (documents, presentations, websites, online meetings, and other digital tools) accessible to everyone. Dr Alecia Samuels, senior lecturer in the Centre for Augmentative and Alternative Communication (CAAC) in the Faculty of Humanities, maintains: 'Digital accessibility is a global problem that predates the pandemic and which people with disabilities have long faced at universities around the world. For students with disabilities, the digital portion of their studies remains one of the biggest barriers to their education'.

Learning management systems, as well as digital content created by lecturers, such as documents, presentations and recorded videos, need to be accessible for a wide range of users with different abilities. Digital accessible design, however, is not an issue limited only to students with disabilities. Dr Samuels explains: 'Closed-captioning or subtitles on audio-video material, while

greatly assisting students with hearing impairments, has a strong body of evidence to show that it is equally effective for language learning and can also improve grammar, vocabulary, listening, and reading comprehension for second language students'.

Dr Alecia Samuels

In acknowledging the diversity of their student body, the University of Pretoria embarked on a unique project in 2021 to promote inclusivity in teaching and learning. UP is the first higher education institution in Africa to do so. In the second semester, a pilot project began where a new digital accessibility checker, Blackboard Ally, was integrated into clickUP. Instructors who opted to be part of the pilot project were required to address accessibility issues identified by Blackboard Ally in their clickUP courses. Students enrolled in these pilot courses were also allowed to download alternative, accessible formats of the original content. These formats include MP3, electronic Braille, ePub, Semantic html, optical character recognition (OCR) pdf, tagged pdf, BeeLine reader and translated versions.

Blackboard Ally

The quality of alternative formats depends heavily on the quality of the original source material designed and developed by instructors. The platform also requires clickUP instructors to be conscious of the accessibility of their course content. Instructors can run a course accessibility report that provides them with an accessibility score and a list of all accessibility issues identified by digital content type and severity. Instructors can then determine what content requires more urgent adjustment before it reaches students. The software provides basic guidance on how to adjust the accessibility of their content. However, accessibility checkers such as this are not infallible, and there are no accessibility alternatives for certain types of content, such as providing captions or subtitles on video.

Therefore, alongside the introduction of Blackboard Ally, Dr Samuels worked with staff from the Department for Education Innovation, Mr Dolf Jordaan (Deputy Director: E-learning and Media Development) and Ms Estelle Drysdale (Senior Instructional Designer) to develop a self-paced digital accessibility course within clickUP. This course aims to create awareness among UP's academic and professional staff of the need to design accessible digital materials and enable them to make digital content more accessible from the point of course inception. The course asks staff to begin with small changes that can create a significant impact by focusing on seven key digital accessibility skills, including: (i) creating accessible headings in documents and presentations, (ii) hyperlinks, (iii) lists, (iv) colour and contrast, (v) alternative text for images, (vi) video and audio accessibility, and (vii) planning accessible online meetings. There is step-by-step guidance on how to adjust digital content, and staff can complete the course at their own convenience.

The Digital Accessibility course was launched in clickUP in September 2021, and Dr Samuels and Mr Dolf Jordaan presented two webinars to the University community to create awareness around digital accessibility and encourage instructors to sign up for the course in preparation for the anticipated full rollout of Blackboard Ally in 2022. The course has been enthusiastically received with many early adopters also agreeing to pilot Blackboard Ally in their clickUP courses.

One of these early adopters was Professor Kerstin Tönsing from CAAC, who piloted the use of the platform in the second-year master's in early childhood intervention (ECI) clickUP module. Even though students in this programme do not have a disability, they found the alternative accessible options extremely beneficial. One student wrote: 'I use my cell phone a lot, so the HTML and ePub formats have been an absolute blessing. In addition to ease of reading it has also supported me to multitask and complete my readings without having to carry my laptop around with me. I also enjoyed the addition of captions to the PowerPoint presentations as it helps me to pay attention and concentrate and thus improves my ability to retain information'.

Other examples of student feedback are given below (informed consent was obtained from the students to use their feedback.):

Zaheera Cajee

> I attempted using the audio (MP3) version of the lecture notes during the onsite week and found this version to be very helpful as accessing them on my phone allowed me to 'multitask' far more easily than when I have 'attended' the lectures on my laptop. This made it far easier to breastfeed my babies, make them lunch, and address some other household needs while listening to lectures from my phone in my pocket. Accessing the lectures in this way also means that I can be anywhere—eg, on a long car trip or in a queue, exercising, or cooking dinner—when I want to revisit information in preparing for my assignment.

Sarah Janse Van Rensburg

> Deaf actress Marlee Matlin said that 'no one should have to ask for access—it should just be there'. By making content accessible for students with disabilities, we are making our content accessible for everyone. In this way, no one needs to ask for special permission; everyone is included from the very beginning.

The successful pilot phase clearly demonstrates the value of the innovation for students with and without disabilities. The use of Blackboard Ally will be expanded in 2022.

Faculty of Law

Enrolment
2 795

Student success rate UG
92,5%

Graduates
638

Faculty Retreat: Reimagining Legal Education and Research: Towards a Transformed and Future-focused Faculty

Faculty of Law 2021 retreat

The Faculty of Law is in a period of renewal and reimagining in terms of teaching and learning innovations and research, among other things. This trajectory was evident when the faculty hosted its first ever retreat in 2020 at Mount Grace to discuss a future-focused pedagogy and approach in terms of teaching and learning. Innovative ideas were proposed and subsequently implemented, which include the use of Powtons; an online marking tools to enhance efficiency; and technological innovations to be used for teaching law.

At the 2020 retreat, the faculty also interrogated whether or not the pandemic had resulted in the standard of teaching and learning in law being lowered, thus compromising the quality and standard of qualifications. Subsequently, various lectures were hosted on the impact of the pandemic on the teaching of law. The faculty is currently working on publishing a book on the views of various scholars, both internally and externally, who contributed to this venture. A way forward for the future of teaching and learning in the field of law post the pandemic features strongly.

Following the successful 2020 retreat, the faculty resolved to host another in 2021. The retreat focused on career development and planning, teaching and learning, curriculum transformation, and research. The event provided a space for colleagues to reflect critically and creatively on their roles as teachers, researchers, and academic citizens. The purpose of this initiative was also to advance a culture of cohesion, collegiality and collaboration between academic colleagues across UP's law departments. The theme of the retreat was 'Re-imagining legal education and research: Towards a transformed and future-focused faculty'. This theme aimed to challenge colleagues to be innovative and creative in their teaching practice in the faculty in the context of the University being ready to provide them with the necessary support to ensure efficiency.

Director of Education Innovation Professor Stols shared with the faculty the role and support his division is able to offer to the faculty and the broader University. He emphasised the role and importance of innovation and how the faculty can best use technological innovations to enhance its teaching practice for the benefit of both staff and students. The focus of Professor Stols's presentation and reflection was 'Global Teaching and Learning Experience (GTLE)', which is an initiative that the University is rolling out from 2022 into the future. The aim is for students to have a global experience in their teaching and learning at UP. The faculty has a role in this promising initiative, and staff are now encouraged to embark on teaching and learning with a global perspective. GTLE aligns with the various exchange programmes the faculty has in place with both regional and international universities with the aim of ensuring that UP students have a global experience that prepares them for the world of work not only locally but also regionally and internationally.

At the retreat, staff also had an opportunity to engage in reimagining legal education in line with the Faculty of Law's Strategic Plan. The Dean, Professor Elsabé Schoeman, led this discussion. She emphasised that in their day-to-day teaching, staff must ensure that their teaching practice is innovative, transformed, and inclusive because that is one important aspect of the faculty's strategic plan. This discussion yielded positive results because the faculty was working on a phase of re-opening the curriculum transformation discussions. Furthermore, the Deputy Dean, Professor Charles Maimela, put an emphasis on the future of teaching and learning at UP and globally. The changing trends and dynamics in the world require the approach to teaching and learning to change and be agile and innovative in a field like law. The UP WAY of teaching and learning of PREPARE, ENGAGE AND CONSOLIDATE was emphasised for its positive impact on student participation in class and various assessments. The approach is critical for law students whose language and communication skills are essential for their survival and success in the field.

Panel discussions led by staff members were featured on various topics like social justice in the classroom; transformative and contextual teaching and learning, as well as research; challenges and reflections at UP; staff development; and wellness and belonging in the faculty. The aim was to create social cohesion, improve collegiality, and close the gap between emerging colleagues and senior colleagues for purposes of mentorship and succession planning. Most of these discussions have contributed to a plan of action for 2022 as part of affirming the faculty's support of colleagues in terms of their work and well-being.

Dr Sanele Sibanda, Professor Elsabe Schoeman, Dean, and former Deputy Chief Justice, Professor Dikgang Moseneke

The highlight of the retreat was the address given by former Deputy Chief Justice (DCJ) Dikgang Moseneke, who is also an honorary professor in the Department of Jurisprudence in the faculty. His lecture was titled 'Reflections on teaching, writing and thinking law in the postcolony'. The former DCJ shared historical, innovative, critical and jurisprudential perspectives on teaching. Colleagues were challenged to ensure that they take into account a historical lens in their approach in order for innovation and creativity to flow in the teaching of law and for a transformed curriculum to be achieved in the interest of society and students. This perspective will feed into the faculty's curriculum transformation initiative in the 2022 academic year. Furthermore, a number of initiatives with the former DCJ have been planned, which include the launch of his bursary early in 2022 and the research commons later in the year.

The retreat concluded with the Dean, Deputy Dean, and the entire management team of the faculty, which comprises of HoDs and directors, expressing appreciation to all the members of the faculty for the excellent work they are doing. During the pandemic, all members of staff acted exceptionally in ensuring continuity of teaching and learning. It would be unfair to single out one or two colleagues for a teaching excellence award during a pandemic as all the colleagues in the faculty are exceptional in their own right and deserve an award for their contribution during this difficult time.

The Faculty of Law Reiterates its Commitment as it Hosts the First Instalment in the UP Curriculum Transformation Lecture Series[10]

The faculty has made great strides since 2016 when, after extensive consultation and engagement with the UP community, UP crafted a policy document on curriculum transformation. This challenged the faculty to rethink, recreate, reimagine and create new curricula in all disciplines at UP based on the examination of current knowledge of race, religion, class, sexuality, nationally, disability, gender, gender expression, and non-binary orientation, said Professor Elsabe Schoeman, Dean of the Faculty of Law. Professor Schoeman was speaking during the first instalment in the UP Curriculum Transformation Lecture Series, where the faculty shared with the University community its initiatives, goals, and objectives in terms of curriculum transformation, five years after the Curriculum Transformation Policy Document was adopted by Senate.

Professor Elsabe Schoeman, Dean, Faculty of Law

10 This article was originally published online by UP on 9 December 2021. https://www.up.ac.za/faculty-of-law/news/post_3036691-ups-faculty-of-law-reiterates-its-commitment-as-it-hosts-the-first-instalment-in-the-up-curriculum-transformation-lecture-series.

'It is a response to create a new identity that begets the emerging South African education discourse and practise, acknowledging our history and social context. The faculty strives to respond and be relevant to the community we serve, in order to achieve the realisation of social justice in one of the most unequal societies in the world', said Professor Schoeman about the process of curriculum transformation.

'We are deeply committed to the relaunch of the curriculum transformation drive which requires active and dedicated participation of all students and staff working collaboratively as a team towards the greater good of all and a better UP. The faculty has over the past five years achieved notable advancement and successes, but there have also been failures and gaps which the faculty acknowledges and looks forward to improving on. The faculty is determined to use this relaunch of the curriculum transformation drive to review and open frank discussion on curriculum transformation focusing on the creation of an inclusive environment for all to participate freely and meaningfully in this important endeavour'.

In his presentation, titled: 'How black consciousness could help us to transform the curriculum', Professor Tinyiko Maluleke, Deputy Director of the Centre for the Advancement of Scholarship, compared a curriculum to a travel plan, saying the consensus was that decisions about the departure point, the speed of travel, the number of stops and possible exits, as well as the final destination came out of structured and unstructured long conversations between generations of people, interested communities, educational professionals, the state, and students. 'We must remember to distinguish between the explicit curriculum and the implicit curriculum, and the hidden curriculum and some people add what is called the excluded curriculum. If we want to appreciate the impact of black consciousness and to think about dimensions necessary for transformation, it is important to have a broad idea of the curriculum beyond what is normally referred to merely as the syllabus', he said.

Professor Tinyiko Maluleke

Professor Maluleke said the challenge with defining transformation in South Africa is the broad scope of the term and the wide range of expectations people have of it.

Professor Maluleke said curriculum transformation, similar to the decolonisation of knowledge, is not merely a theoretical or intellectual activity but involves thought, theory, action, and application. 'Transformation of the curriculum necessarily requires the transformation of all the choices of the building blocks, the materials, the resources, learning environments, the processes, the policies, the structures that make up the journey—the travel plan. For transformation to be effective it must encompass the explicit curriculum, the implicit, the hidden as well as, sometimes, the excluded'.

Dr Sanele Sibanda, Senior Lecturer: Department of Jurisprudence, said it is important to take time to interrogate and understand the premise, foundations, and assumptions that inform how we understand curriculum transformation.

'What I would like to do is to take a conceptual approach or conceptual reflection on the project of curriculum transformation. Rather than taking or entering the curriculum conversation by looking forward on what needs to be done in future, let us take a few steps back and think about what it would mean to approach the curriculum transformation project from a point of view that prioritises or organises itself around a search for the right questions', said Dr Sibanda.

Dr Clireesh Joshua, a lecturer in the Department of Private Law, also gave a presentation, titled 'Implementation of the curriculum transformation drivers, the law of property journey', and touched on the module on property law. She said the history of property law in South Africa is one of colonialism and segregation since these laws made their way to South Africa with Dutch people and English settlers and were also used in apartheid to divide South Africans along racial lines. 'Concerning the interior of the module, there are a number of challenges that transpire when thinking about decolonising a subject such as property law. This module requires students to know how to work with the common law of properties since this law is practiced predominately and, as lecturers, we have a responsibility to teach this law and principles to ensure that our students not just compete but excel in the world of work. Our faculty is dedicated to a transformative curriculum and accommodating all our students'.

Inaugural Teaching and Learning Virtual Lecture[11]

Even before COVID-19 forced education online, technology played an important role in the sector, and now, more than ever, it needs to become an integral part of teaching and assessment practices, according to Lizelle le Roux, a lecturer in the Department of Jurisprudence at UP, during the faculty's virtual inaugural Teaching and Learning Lecture Series, on 7 July 2021. The monthly lecture series is aimed at reflecting on teaching and learning during COVID-19 using technological innovations and mapping the way forward post COVID-19.

'We have witnessed the ease with which students relate to navigating online materials on online platforms. Many of us started incorporating technology into teaching—this is called technology integration—and this can be defined as an effective use of technology in the classroom in order to reach the learning outcomes'.

'We need to focus mainly on how technology can

11 This article was originally published online by UP on 27 August 2021. Author: Xolani Mathibela. https://www.up.ac.za/faculty-of-law/news/post_3011257-up-law-lecture-reflects-on-teaching-and-learning-using-technological-innovations-during-and-post-covid-19.

be used to enhance teaching', said Le Roux. 'Integration technology needs to do two things; it must enhance the actual learning outcomes to facilitate and improve deeper understanding of the content, and it must spark creativity in the educator to improve a transformed teaching practice'.

Professor Charles Maimela, Deputy Dean: Teaching and Learning

The lecture was moderated by Professor Charles Maimela, Deputy Dean: Teaching and Learning of the Faculty of Law at UP. On the panel alongside Le Roux were the University of Johannesburg's Professor Mzukisi Njotini, Vice-Dean for Teaching and Learning, Faculty of Law; and Dr Melanie Murcott, Senior Lecturer, Department of Public Law at UP.

According to Murcott, for her, teaching during COVID-19 was an opportunity to get creative and use technology to enhance teaching and learning. 'The real challenge was not to expect too much from myself and students; it was to work out how to get students to engage, prepare and consolidate without formal in-person lectures; it was reducing formal assessments and replacing them with incentive-based informal assessments and acknowledging students' living realities. I had fun making the layout and design of my module more appealing to students and found YouTube videos for students to watch for lecture content which could facilitate engagements with the current social context related to the module context'.

Focusing on the theme 'Teaching under COVID-19, and if technology enhances or compromises teaching LLB curriculum going forward', Professor Njotini said the International Astronomical Union (IAU) noted that more than 60% of global universities have had to digitise amid the disruptions and uncertainty caused by COVID-19 for both lecturers and students.

Adding to the discussion, Murcott said, in her department (Public Law), staff used Instagram as a form of communication for some announcements to students because they found that the photo and video sharing social networking site was popular with students. 'We made fun/informal video content to keep them engaged [Junior Tukkie, November 2020, pages 20 to 23]; we used a Gmail account for student queries; therefore, tutors and student assistants were able to reply to certain queries instead of lecturers being flooded with emails. In addition, this allowed students to engage even more among themselves'.

'It was not much of a crisis from our side because most learning material was already loaded on clickUP (UP's learning management system). It was easy for students to access it and that meant we did not have to prepare a lot soon after COVID-19 hit South Africa. With some subjects, students submitted assignments online via the Turnitin programme to avoid plagiarism', said Murcott.

Njotini further noted that the inequality in terms of access to technology between students who come from poor backgrounds and those who come from rich backgrounds had been made very apparent by COVID-19. 'We need to look at the prevailing realities in South Africa—poor Internet access and electricity power outages. This means that technology will only be available to a few. Therefore, as lecturers, we need to create a way in which we are going to authenticate our online teaching and learning'.

Dr Melanie Murcott

Maimela noted that it is important during this time for lecturers to take a proactive approach to teaching and finding ways to make the best use of technological innovations. It is also important that lecturers listen to their students and are aware of how receptive they are to the level of technological integration. He also noted that technological advances, outside of the current crisis, have an effect on teaching and learning. 'One would agree that the fourth industrial revolution contributes partly to curriculum transformation because it challenges the status quo of how we are teaching and proposes different ways of teaching practices and pedagogies'.

Second Teaching and Learning Virtual Lecture[12]

While technology has come to the rescue of higher education institutions and their students after COVID-19 disrupted contact learning at the beginning of 2020, the importance of lecturers connecting with students, even through technology, cannot be overstated, said Dr Martha Bradley, a lecturer in the Department of Public Law at UP, during the second lecture in the UP Law's monthly Teaching and Learning Lecture Series aimed at reflecting on teaching and learning during COVID-19 using technological innovations and mapping a way forward post pandemic. The event was held on 11 August 2021.

'Physical teaching and learning changed overnight as a result of COVID-19. The University of Pretoria's Faculty of Law was prompted by these changes to convert from contact lecturing to remote teaching and from hybrid teaching to emergency remote teaching or fully online', said Dr Bradley.

Dr Martha Bradley

'The demand is continuously to rethink and re-evaluate the manner in which we learn and teach in order to satisfy this demand. This includes demonstrating responsiveness to entering new methodologies and approaches, specifically in international law', she said. 'We cannot use technology in isolation; we have to have a consolidation phase where we actually speak and engage with our students', said Dr Bradley, noting that they had observed that students prefer lectures to be shorter. 'For me, the takeaway would be to have achieved what we have done so far'.

In his opening statement, Professor Charles Maimela, Deputy Dean: Teaching and Learning, said Pretoria University Law Publisher (PULP)—an open-access publisher based at UP's Centre for Human Rights—had accepted the faculty's proposal that PULP document all online law lectures and engagement experiences shared on this platform in book form as a record of which teaching methods used during COVID-19 worked and which did not and what lessons to take from the experience. 'A call for papers will be made to the faculty and we look forward to receiving more chapters from colleagues for them to participate in this venture', said Professor Maimela.

Professor Omphemetsi Sibanda, Executive Dean, Faculty of Management and Law, University of Limpopo, said technology is a major influence on education, be it in a positive or negative way. He highlighted a survey that was conducted globally by Accesslex Institute and Gallup between February and March 2021 regarding online teaching and learning and how it impacts students. The survey was done on 1 739 law students. 'Most first-year students indicated that the quality of education has improved to excellent, and 43% of senior students indicated that it was not good and disrupted their normal teaching and learning', said Professor Sibanda.

'I think all law managers, faculties, and teachers have access to the International Association of Law Schools report "Global Legal Education: Responding to COVID-19: The Student Voice" (https://www.ialsnet.org/wp-content/uploads/2021/12/2021-Global-Legal-Education-Responding-to-COVID19-The-Student-Voice-Final.pdf), which featured South African and African students as respondents to the survey. There were important recommendations made in that report, including that faculties and universities must conduct further investigations and substantiations regarding developing mechanisms for continuing study assessment of the use of the online technologies and effectiveness in educating our law students; another one was to develop a strategy which leverages off existing technological infrastructure at our universities and resources to be scalable for the transitioning'.

'We cannot go back to how we were before COVID-19', he said.

Professor Sibanda said South Africa (not just its law schools) is lagging behind, as only now is the country realising the importance of using technology in education. All future discussions around education cannot exclude references to technology and innovation, including artificial intelligence and robotics, he said. 'The higher education sector fortunately is intertwined with the development of new technologies', he said, adding that artificial intelligence can be used in law and the teaching of law. 'This essentially involves the application of a machine to learn and to achieve the same outcomes of what law is'.

Dr Rashri Baboolal-Frank, a senior lecturer in the Department of Procedural Law at UP, said: 'The pandemic forced us to move quickly to online teaching activities such as voice clips, podcasts, webinars, etc. The assessments were conducted online—from assignments to multiple-choice questions—which forced lecturers to think differently about the way assessments were presented in order to avoid those easy answers'.

12 This article was originally published online by UP.

Dr Rashri Baboolal-Frank

Dr Baboolal-Frank acknowledged that, while helpful, technology has also raised new challenges when it comes to assessments.

'As wonderful as technology is, it is also an enabler, especially in online assessments, for students to cheat in creative ways. Far more assessments completed during emergency remote learning have become part-practice as innovative methods have been adopted for learning and assessment purposes in order to preserve the integrity of the degree through online modes of learning', she said.

But the challenge that has been more difficult to overcome, said Dr Baboolal-Frank, is finding ways to replicate the benefits of contact learning.

'Over the years, students have become accustomed to traditional learning and physical contact. I found that Google Meet and virtual classrooms do not replace physical contact sessions in relation to a real kind of thinking'.

Third Teaching and Learning Virtual Lecture[13]

'The use of technology has always been part of the plan for higher learning institutions'—experts discuss teaching under COVID-19 conditions at UP Law lecture on 15 September 2021.

The Faculty of Law recently hosted a webinar to discuss teaching under COVID-19 and whether conditions brought about by the pandemic compromised the LLB curriculum or enhanced it through the use of technological innovations.

According to Dr Freddy Mnyongani, Academic Leader: Teaching and Learning, School of Law, University of KwaZulu-Natal, the Council on Higher Education (CHE) expects a university to produce a 'well-rounded' LLB graduate, and this is embedded in the documents that outline the standard that must be followed. The documents indicate that a graduate must have critical thinking skills, research skills, problem managing skills, self-management and collaboration skills and must service the community, he said.

'Graduates must have the knowledge and skills to navigate information technology. For our graduates to be competent with technology, institutions must make information resources available to them. Every institution has a responsibility to make sure that they have the technology that will enhance the product that they deliver to their students, whether in the form of research [or] lecture venues', said Dr Mnyongani. 'CHE also indicates that law graduates are conversant with regulatory framework that governs the use of technology. Every law school must ensure that there are modules that expose students to issues such as cyber-crime, cyber law, and intellectual property law issues insofar as they relate to the use of technology. Our students need to use technology as tools to research, organise, evaluate, and communicate information'.

He added that proper organising and communicating information can be achieved if students make use of technology. 'Some tasks given to students must require them to use a particular device or instrument to be able to achieve the module's objectives or goals. The use of technology has always been part of what CHE had planned for higher learning institutions. In 2018, CHE indicated to schools and university faculties that they must have e-learning platforms, and those platforms must not be used as repositories of information but used as pedagogical tools. However, the use of technology must not replace contact classes. CHE indicated that we must use technology to supplement our face-to-face teaching. As schools were busy preparing for this process, plans were disrupted by the outbreak of the COVID-19 pandemic and forced many higher learning institutions to go fully online'.

Adding to the conversation, Professor Gustav Muller, an associate professor in the Department of Private Law at UP, said the pandemic has revealed vulnerabilities in higher education with regard to teaching and learning, as well as continuous professional development and training for staff. 'It also highlighted areas that are in desperate need of development but also revealed and highlighted those areas where there is an opportunity to build resilience'.

Professor Gustav Muller

Dr Jani van Wyk, lecturer in the Department of Mercantile Law at UP, said it is important to have both students and lecturers use technology in their approaches.

'As the pandemic continued to hover ominously over us, information technology, with its myriad of opportunities, provided us with a temporary refuge from the onslaught of the pandemic. With our strategies for teaching online and our online pedagogies, it is clear that using technological innovations, albeit as a supplement to our contact mode of teaching, will enhance the LLB curriculum to be better placed to produce well-rounded law graduates'.

13 This article was originally published online by UP on 9 October 2021. https://www.up.ac.za/faculty-of-law/news/post_3024344-the-use-of-technology-has-always-been-part-of-the-plan-for-higher-learning-institutions-experts-discuss-teaching-under-covid-19-conditions-at-up-law-lecture.

Curriculum Transformation[14]

The Faculty of Law is taking a firm stance regarding the importance of curriculum transformation, as are the other faculties at UP. In this exercise, the faculty is aiming to take a collaborative approach that is inclusive, dynamic and embracing diversity among all the people of South Africa, taking into account their different cultures and backgrounds. Plurality of South African history, culture, population, and geographical area will be looked at, among other things, in shaping the curriculum.

In the law curriculum, we look at the South African legal system with transformation as a central theme in order to explore the difference between Western and African conceptions of law. The South African legal system affirms the overriding power of the Constitution and recognises both common law (Roman Dutch and English law—the law of the colonisers that was entrenched as mainstream law) and African customary law, which the colonisers came across when they arrived in South Africa but perceived as being less important and inferior.

Today, both systems are subject to the Constitution as the supreme law of the land, and both have their place. Common law focuses more on individual rights, and African customary law focuses on the collective rights where the interest of the groups supersedes the interests of the individual. In place of the expensive nature of litigation, where the winner takes all, people are encouraged to explore mediation to resolve disputes, which is very much part of African customary law, and it ensures that people's rights to access justice are realised.

Transformation of the law curriculum and the legal fraternity as a whole requires the mainstream inclusion of African customary law alongside Western conceptions. We need to make use of a diversity of systems and knowledges in our courts to arrive at just and fair decisions—an inclusive rather than a unitary approach.

Across all faculties, knowledges, inheritances, and cultural heritages from Africa and the Global South need to be incorporated in the curriculum. As part of curriculum transformation, academics in all faculties are calling for transdisciplinary and trans-faculty collaboration in teaching and learning, research and engagement practices, where they can learn from one another and students can share with one other. The faculty will even go further and engage external stakeholders like legal practitioners, judicial officers, and alumni, among others.

Taking a Stance on the Importance and Value of Email Etiquette

The Faculty of Law, and the wider University of Pretoria community, recently experienced a surge of improper and unprofessional communication and correspondence between staff and students. The pandemic exacerbated this problem because both staff and students had to work online and remotely, resulting in an increase in the use of email correspondence and other online platforms. A proactive stance on the side of the faculty was required urgently to address the frustrations experienced by both staff and students in communication, among other things, attributed to the pandemic. A need for an email etiquette campaign was identified, and the campaign was led by the Dean's Office and the Department of Jurisprudence, with the support of all the stakeholders in the faculty.

Inasmuch as students must be taught all the content concerning their respective qualifications, the paradigm shift in higher education and the world of work requires universities to go the extra mile in including soft skills in their curriculum. For the faculty, in working to deliver well-grounded graduates the UP WAY, soft skills are part of the curriculum, especially for a field like law, which is interactive and centred on social justice. The aim of this campaign was to guide and assist students with writing emails that are well-written, concise, professional, and respectful. The purpose of this campaign was also to improve student–staff relations, as well as to improve student's communication skills in a professional environment. The faculty's Teaching and Learning Committee and Management Committee approved the rollout of the campaign.

The campaign includes a video by the Deputy Dean of the faculty, which aims to inculcate in students the essence of proper email communication, which can assist in ensuring that their queries are attended to efficiently and within the specified period. There are also a poster and email etiquette tips for students, which are posted on various platforms, including social media, clickUP and in the study guides of all the modules in the faculty.

Ever since this campaign was launched, communication between staff and students has improved significantly, and students are very happy that the faculty helped them to realise the importance of proper email communication, which was something they deemed unnecessary. It has contributed to their social interaction with people in general.

This campaign also gained traction and recognition from various universities in South Africa, including the University of Johannesburg and the University of Western Cape. They requested permission to launch this campaign in their respective faculties because they view it as important to resolve similar challenges they experience.

At the University of Pretoria, too, various faculties have requested to make use of this campaign. The faculty shared all the relevant content with them.

The regard in which internal and external role-players hold this initiative affirms the original decision of the faculty to come up with the campaign. Students are empowered with soft skills in addition to the content of the various degrees, and this will enhance teaching and learning, as well as the success rate.

14 This article was originally published online by UP on 20 September 2021. https://www.up.ac.za/news/post_3018862-every-field-of-study-requires-regular-renewal-reinvention-and-new-knowledge-up-law-professor-on-curriculum-transformation.

Faculty of Natural and Agricultural Sciences

Enrolment	Student success rate UG	Graduates
6 794	77%	1 301

Fostering and Celebrating Teaching Excellence

The faculty made teaching awards in the four disciplinary clusters, funded by the UCDP grant. The 2021 awardees were:

- Physical Sciences—Professor Matthys Dippenaar (Geology)
- Agricultural and Food Sciences—Dr Nadene Marx-Pienaar (Consumer and Food Sciences)
- Biological Sciences—Dr Carel Oosthuizen (Zoology and Entomology)
- Mathematical Sciences—Dr Miek Messerschmidt (Mathematics and Applied Mathematics) and Mr Lindo Magagula (Statistics)

Cluster award winners: Professor Matthys Dippenaar, Dr Nadene Marx-Pienaar, Dr Miek Messerschmidt and Mr Lindo Magagula

The student house (NATHouse) continued with their annual awards. Dr Markus Wilken from Biochemistry, Genetics & Microbiology (module GTS 161) and Dr Carel Oosthuizen from Zoology and Entomology (ZEN 161) shared the prize for the best first-year lecturer. Dr Rory Biggs (Mathematics and Applied Mathematics) won the award for the best lecturer in senior modules.

NATHouse award recipient for best lecturer in senior modules: Dr Rory Biggs

Dr Carel Oosthuizen and Dr Markus Wilken receiving their awards from Ms Sonet Vermaak and Ms Eve Mashamba of NATHouse

UPstarters

UPstarters end-of-year picnic in the gardens on Hatfield Campus

The UPstarters group was established in August of 2020 for emerging academics in NAS. This group has grown from strength to strength. Nine sessions were held in 2021, with topics such as 'An alumni crowd-funding postgraduate loan model', 'How to increase your research visibility', 'Inquiry-based learning', and 'Time management'. Participants all completed an online personality test and discussed the results. The year was concluded with a picnic in the Hatfield Campus gardens.

Members of the UPstarters were asked to submit words that depict their academic path, which were used to make a word cloud. What everyone found most inspiring were the quotes that guide how the members live their lives.

Some of the UPstarters shared their reasons for attending the sessions (names are used with permission):

- 'I attend the UPstarters' meetings because I want to connect with my peers at UP, ie, individuals who are on a similar academic path as mine (more so for camaraderie!). This platform has brought us together and facilitated an interaction that would have otherwise not occurred if left to chance (that's just my opinion!)'.
- 'I have learned a lot from hearing how others navigated their academic careers—and here, I'm referring to Professor Bloomer's presentation detailing her own academic journey. After that meeting, I went back to revise my five-year academic plan and focused specifically on activities that would put me at an advantage of getting my first academic appointment as a full-time lecturer—I'm happy to report that I have recently been appointed as a full-time lecturer at UP in the Department of Plant and Soil Sciences'.
- 'My dream for the future is to become a full professor and a renowned plant pathologist. But specifically, for this group, my dream is for this platform to continue in helping young academics navigate their academic careers by equipping them with relevant and up-to-date skills that will help them not only thrive in their respective fields but to excel the UP way!'—Khumbuzile Bophela
- 'UPstarters is a great platform for young, emerging academics who wish to develop their lecturing skills as well as connect with other young academics. It has become a place where we cultivate ideas and build a community of support, especially during these current times. During one of our meetings, I was inspired by a talk from Professor Paulette Bloomer on her career path, realising that even though it is not always straightforward it can be very rewarding'.—Violet Mwendera-Chinamale
- 'I began attending UPstarters because I hoped to get career guidance, and I was not disappointed! Sharing experiences with other people on a similar academic path has been very valuable and provides a sense of connection and community in these isolated times. I encourage all other young academics to join'.—Renate Thiede

Continuing with the premise of academic development, two NAS staff members were selected as TAU fellows for 2021/2022. TAU is an initiative of the Council on Higher Education, HELTASA, and the DHET (through a UCDP collaboration grant) to advance teaching and learning at South African tertiary education institutions. The focus of TAU is to develop academics from all over the country into scholars, change agents, and mentors within their disciplines and institutes. The fellowship emphasises the advancement of social justice and addressing the legacy of inequality in South Africa. The UP TAU Fellow involved as one of the UPstarters mentors is Dr Pam de Waal (Biochemistry, Genetics & Microbiology).

FLY@NAS Teaching and Learning Brown Bag Events

In 2021, the faculty continued with virtual brown bag events, and the practice proved beneficial. It is easier for people to attend online, but they missed physical interaction and networking. All events were hosted on clickUP, allowing access to the recordings for all. The five brown bag events did not follow a theme but were rather needs-based.

In April, a session was held on 'Engaging students in an online environment'. Dr Markus Wilken from the MLB 111 team shared their completely flipped classroom model in a large gateway module. Dr Ina Louw concluded with ideas aimed at the UP teaching model of 'Prepare, Engage, Consolidate' in an online setting.

The next session was 'Learning from our teaching leaders' and showcased some of the 2020 teaching award recipients. The speakers at the event were Professor Adrian Shrader (Zoology and Entomology), Dr Victoria Rautenbach (Geography, Geoinformatics and Meteorology), Ms Anita Botha (Chemistry) and Dr Eder Kikianty (Mathematics and Applied Mathematics).

The August session focused on transferable skills (see Curriculum Enhancement below).

The September event was initiated after Dr Louw had conducted a peer review and realised how well the lecturer used teaching with questioning. Dr Romina Henriques (Biochemistry, Genetics and Microbiology) presented the session to share how she uses questioning to engage her third-year students. She also confessed that part of her success was the fact that she engaged very frequently on the discussion board and students appreciated that.

The final event in October 'Celebrating seven years of excellence in NAS' was dedicated to paying tribute to Dr Ina Louw, who left her role as education consultant for NAS. Professor Marietjie Potgieter shared pearls from Dr Louw's emails over seven years (mostly tongue-in-cheek). Professor Paulette Bloomer reflected on the key role Dr Louw had played in supporting her portfolio and the whole faculty with the transition to remote teaching and learning ('FLYing online with flying colours'). Professor Serena Coetzee revealed a peer review form that the faculty had completed about Dr Louw. Dr Pam de Waal contributed from the perspective of a TAU Fellow and UPstarters mentor. Dr Hennie Fisher and Professor Potgieter together reflected on a research/SoTL journey with Dr Louw.

A farewell tribute to Dr Ina Louw, Education Consultant

Curriculum Enhancement

Many of the departments in NAS are involved in the hard sciences, and transforming a curriculum has definite boundaries when it comes to content, yet many colleagues are creative and innovative and realised there is a lot they can do in order to 'enhance' their curriculum.

On 20 August, a process was started when Dr Deon van Zyl and Dr Shaun Ruysenaar presented a session at one of the Brown Bag events in NAS about transferable skills for the fourth industrial revolution. They are external consultants with vast experience in the higher education sector. This session was followed up by a workshop on 23 November.

In preparation for the workshop, each department had to nominate two people to attend and collect information from colleagues on how these or some of these skills are currently taught to our students. At this face-to-face workshop, in the newly built tutor venues in the AE du Toit complex, the two external facilitators shared more ideas on how transferable skills can be taught. They also shared the notion of systems thinking in more detail.

Twelve of the 15 departments that are responsible for undergraduate programme delivery in NAS were represented. During the group work and discussions, it transpired that a number of cross-departmental and inter-disciplinary projects would be well-suited to train some of these transferable skills. Lecturers shared their current attempts to expose students to opportunities to master these skills. They were Professor Adrian Shrader (Zoology and Entomology), Dr Christine Mundy (Chemistry), Professor Bekker, Dr Kanfer and Dr Millard (Statistics,) and Professor Bumby (Geology).

Dr Shaun Ruysenaar introduces the value of systems thinking in tackling complex problems

Professor Adrian Shrader shares using social media to teach transferable skills in conservation ecology

Dr Deon van Zyl leading workshop participants through creative thinking exercises

Transforming the Culinary Science Curriculum

Participants in the reflective ethnographic activity

The commercial food and hospitality industries are driven to respond to globalisation by modernising and/or Westernising local cuisines in response to the constantly evolving needs of global and local citizens. Industry role-players seek a new breed of culinary graduate who understands ever more demanding clients, while simultaneously acknowledging and accommodating co-workers who possess varying levels of experience. Transforming the culinary curriculum to student-centred learning may produce graduates with a fine-tuned ability to address modern-day industry needs, along with a sense of how their contribution could help to address the socio-economic inequalities of South Africa's past.

The BConSc (Hospitality Management) degree in the Department of Consumer and Food Sciences went through a curriculum transformation process by involving alumni, current students, and industry in a reflective ethnographic activity. Reflective ethnography research encourages reflection and theorising about human activities such as teaching and learning, with specific focus on four approach aspects: (1) phenomenon in real-world settings, (2) a holistic approach, which aims to address a whole phenomenon, (3) a multi-method approach, which uses a variety of research techniques to generate a range of data, and (4) an interpretative approach, which aims to represent participants' perspectives. Data collection methods include reflective student essays, content and document analysis, and stakeholder engagements.

The department designed short- and medium-term plans: eg, more regular contact with restaurants and an annual industry workshop.

Innovation and Engagement in Agricultural Economics

Courage, adaptability, and leadership—three words that describe 2020's rapid immersion in online teaching and learning for staff in the Department of Agricultural Economics, Extension and Rural Development (AEERD). 'Attitude is everything!' says Professor Sheryl Hendriks, Head of Department.

Rather than bemoaning the situation, the staff of AEERD entered 2021 with a passion for innovation and a drive to exploit the opportunities of the new learning environment to experiment with building more enriched learning experiences for students and deepening learning in deliberate ways. Weekly online staff check-in sessions facilitated sharing innovations and reflections on student learning, capabilities and skills, promoting discussion on how to build stronger foundations and learning progression in the undergraduate programme.

Staff confidently communicated with their classes that they were leading innovation to support student learning, building confidence and certainty in a stressful and uncertain time. Staff and tutors led modules with fairness and firmness while simultaneously showing understanding and compassion; focusing on ensuring student engagement and inclusion. Students report that the narrated PowerPoints released ahead of classes are 'the best COVID-19-era invention', asking for these to continue. Most modules in the department have adopted a model of making narrated PowerPoints available ahead of discussion classes on the topic/s covered, allowing students to watch the videos at their own pace, repeatedly viewing them if necessary and using them for revision for tests and examinations. Continuous feedback loops were included as pre-class quizzes to evaluate student preparation for classes and their understanding of the theory to inform the class discussions. Monitored clickUP discussion forums allowed for peer engagement on topics. Tailored online practicals built competence and the essential skills for the future work environment. Each of these strategies allowed staff to identify at-risk students and correct, improve, or reinforce knowledge in class discussions.

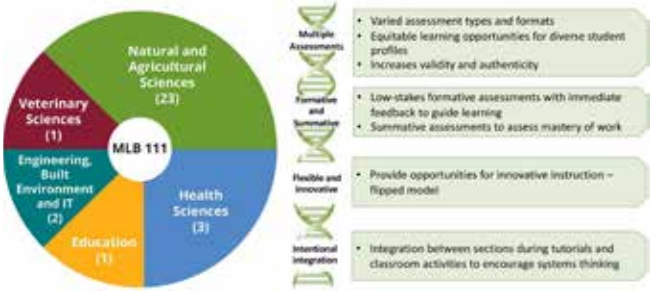
Continuous Assessment as a Model to Enhance First-year Student Engagement and Success

Continuous assessment provides early indications of student performance while allowing multiple opportunities for students to master the work. Students use failed assessments as individualised learning opportunities, promoting equitable education. The multiple low-stakes assessments that form the basis of the continuous assessment model encourage time-on-task and promote mastery of the work.

During 2021, the lecturing team of Molecular and Cell Biology (MLB 111)—Dr Markus Wilken, Dr Angelique Kritzinger and Dr Rebamang Mosa—implemented continuous assessment and used the 'Prepare, Engage, Consolidate' model. Four continuous assessment opportunities per theme formed the basis of the learning opportunities provided to students. The online assignments helped the students in preparing before class. Engagement took the form of discussion classes and tutorial sessions where theory was applied. Consolidation included a low-stakes tutorial test and a larger consolidation in the form of three semester tests. To complement the theoretical work, the MLB 111 team incorporated generic skills such as reading and engaging with scientific literature as well as data analysis and science communication into the assessment model.

The team was encouraged by the largely positive feedback on the adopted continuous assessment model. Key student performance criteria reflected a successful implementation, with a pass rate on par with previous years in spite of the difficult online teaching and learning environment. Students also benefited from the approach, and this was reflected in their evaluations. One student commented: 'The continuous assessment method that was used really helped me. It helps knowing that the "little tasks" that we do also contribute', while another noted that 'Not having an exam also motivates me to study more during the semester. Not having one big test that counts 60% of my marks motivated me to work harder at my other tasks'.

The team looks forward to building on the successes of the continuous assessment model in 2022.



Continuous assessment in MLB 111, showing the faculties and number of degree programmes serviced, as well as the guiding principles of the continuous assessment approach

Teaching Transferable Skills in Statistics

The past two decades have been characterised by changes in technology, methods of communication, and the availability of information to a degree that has not been seen before. These changes, together with those that the COVID-19 pandemic brought about, have created a world where it is time to rethink teaching. Because of a working environment that will continue to transform at a rapid pace, the teaching of transferable skills has become more important than ever before. René Ehlers and Priyanka Nagar, the lecturers in the mathematical statistics modules at the second-year level, WST 211 and WST 221, have embraced the challenge by incorporating multiple learning opportunities through project work, during which students can develop transferable skills.

The projects include industry-based problems that require algorithmic thinking and application. The setup of the projects is such that a general statement is given. The students are required to define the problem and propose a method to approach and solve it. They must also justify their approach and its validity in solving the defined problem. This approach includes both a theoretical and computational side, similar to what they can expect in industry.

Skills that are developed in this process include computational and methodological thinking, report writing, time management, working in teams, and effective communication. Students are exposed to the life cycle of a project and how it progresses, and the contribution of statistics within this life cycle. In this way, students are more prepared to approach problems from an industry point of view.

Practical Field Training in Geology

The Department of Geology has maintained a strong commitment towards practical field training throughout the global COVID-19 pandemic. Field expertise is considered one of the most important elements of a well-rounded geologist, and consequently, several weeks of training are embedded within the curriculum of all degree programmes. Two lecturers, Adam Bumby and Matthys Dippenaar, describe some of the interventions.

Second-year students undertake basic geological mapping in Groenkloof Nature Reserve, where the unconformable relationship between the chemical sedimentary rocks of the Chuniespoort Group and the volcano-sedimentary Pretoria Group can be observed. At third-year level, students are exposed to mapping in a more complex geological environment, in the area around Parys (northern Free State), where strata were affected by a ~2,0 Ga meteorite impact and consequently overturned and highly deformed in places. At the honours level, where the programme stresses interpretation of more regional-scale tectonic processes and readiness for work, a number of field trips are undertaken: a week of mapping in Limpopo Province; field excursions to the Barberton Greenstone Belt, the Eastern limb of the Bushveld Complex; a trip underground at a platinum mine near Rustenburg; and numerous day excursions closer to Pretoria.

Professor Adam Bumby explains the regional significance of an unconformity at the honours camp in Kuthaba, Limpopo Province

Dr Roger Diamond demonstrates field data collection of groundwater to the engineering geology and hydrogeology honours classes

The underground visit is complemented by an innovative exercise in business management, where students must present a plan for the development of a fictitious mine and seek 'investment' from a guest panel of executive mining personnel and finance experts.

The engineering geology and hydrogeology honours students have a module for field work where they are taught how to acquire geological and hydrological field data. They go on hikes to learn field exposures and a number of field trips during which they learn geology in the context of applied geology. They do field measurements with equipment that they sample and analyse on site. During the excursion, many theoretical concepts come together so that their practical application can be better appreciated.

Integrated Student Support Network@NAS

In 2021, the Integrated Student Support Network@NAS was strengthened with the ultimate goal of achieving a holistic student success network with strong links to the broader UP support hubs. Some of the key elements in this network are the FSAs, peer advisors, HoDs and academic advisors in each academic department, Student Administration, the faculty student house NATHouse, and the class representatives. Messaging also included a spotlight on lecturers as some of the most important partners in the students' academic journeys. Several initiatives were tackled as partnerships between the different nodes in the network: eg, hosting a number of discussions between staff, undergraduate and postgraduate students in celebration of women's month.

Student Advising

The NAS FSAs are divided to support two streams in the faculty, namely Agricultural and Biological Sciences, and Mathematical, Physical and Consumer Sciences. Each stream has two FSAs. They have various modes of communication with students, namely emails, WhatsApp messaging, and online/face-to-face consultations. In addition, the FSAs host the NAS undergraduate module on clickUP, which allows communication with students and provides them with useful workshops and resources to contribute to their academic success.

Overall, the FSAs are equipped to support students academically. Academic support involves adjustment to university life, goal setting and motivation, time management, study methods, preparation for tests and examinations, and handling of stress related to studies. Many students come for curriculum and career advising as well. The FSAs pride themselves on being the one-stop-shop for students to get advice and/or be referred to relevant assistance somewhere else on campus.

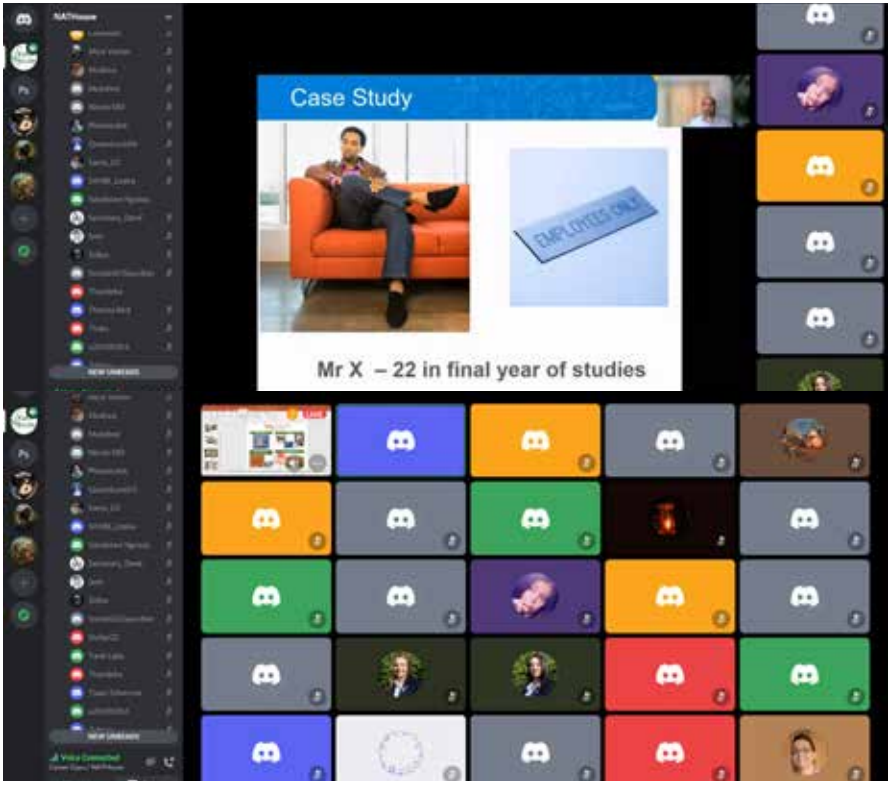
The FSAs' role is to ensure that our students have a complete university experience. This means that they play a key role in facilitating students' interaction with the institution. They assist students with coping strategies, effective study techniques, motivation, and how to plan. These are the soft skills required to make their university experience much more enjoyable and engaging.

NATHouse

The year 2021 was undoubtedly another difficult year for students, with many of the challenges persisting from 2020. NATHouse was no stranger to these challenges and thus tried to ensure that they could have a positive impact on students, despite the environment. One of their roles is to ensure that students have the necessary resources and information to make a success of their studies. From the many programmes and events held, two stand out for their academic impact, namely the Academics Tab and the Science Career Expo.

The Academics Tab was a year-long initiative hosted on clickUP to ensure it was accessible to all students. Seven resources were released regarding class representatives, WhatsApp etiquette, demis and tutors, supplementary examinations, yearbooks, who to contact, and plagiarism. The resources had associated quizzes. Students were incentivised to make use of these resources by providing prizes to the students who completed all the quizzes with the highest scores.

The Science Career Expo was an opportunity for students to get information on the different career and postgraduate paths in the faculty. Guests were invited from different fields to give a presentation on the new Discord server.



Images from the Science Career Expo

Faculty of Theology and Religion

Enrolment	Student success rate UG	Graduates
767	82,2%	177

Dean's Merit Awards

In celebration of the Faculty of Theology and Religion's Front Flyers, the Dean of the faculty, Professor Jerry Pillay, hosted his annual Merit Awards Ceremony on 12 November 2021 at the Nederduitsch Hervormde Kerk (Nether Dutch Reformed Church) of Africa's Philadelphia congregation, near the University of Pretoria's Hatfield Campus. The faculty recognised 20 undergraduate and postgraduate students during the event for their outstanding academic achievement.

The Dean, Professor Jerry Pillay, handing out certificates

In his role as Head of Teaching and Learning for the faculty, as well as Master of Ceremonies on the day, Professor Jaco Beyers congratulated all the awardees, likening them to birds that fly at the front of migrating formations, pointing the way for others in the flock to follow.

Professor Jaco Beyers

Professor Pillay then delivered the keynote address, using the story of Joseph from the Old Testament of the Bible as his central illustration. Like Joseph, who overcame great obstacles in life on his way to leadership and community service, the dean acknowledged that the past year had presented unique challenges because of the pandemic, but the recipients of merit awards had demonstrated their resilience by overcoming such challenges. They made the most of their circumstances and, with the help of personal support networks, pursued an unshakable vision for their preferred futures.

Before the certificates were presented and guests invited to a reception, Ms Amber-Leigh Gordon, the highest achiever among all the top-achievers duly recognised, blessed everyone with a speech as a word of encouragement to her faculty family.

Students with their merit award certificates

Developing and Rewarding Teaching

In order to provide continuing professional development to academics to enhance their teaching, the Faculty Teaching and Learning Committee annually presents brown bag events where short sessions engage the staff. In 2021, the following events were organised:

- 20 August 2021: Sharing good practices. The event consisted of in-house discussions of teaching practices that work and those that do not work.
- 15 October 2021: Entrepreneurial theology. The presenter was Professor Alex Antonites.

These events were in addition to the UP brown bag sessions organised by Education Innovation.

Teaching excellence is recognised by peers. The faculty calls on departments to nominate lecturers for the faculty teaching award. The Faculty Teaching and Learning Committee evaluates the nominations and recommends a recipient for the award. At a faculty social event, the dean makes the award to the recipient. In 2021 the recipient of the Faculty Teaching Award went to Professor Sias Meyer from the Department Old Testament and Hebrew Scriptures.

Professor Sias Meyer

Enabling Student Success

Student Advising

The student advising programme at UP is founded on a dynamic relationship between an FSA and a student, aimed at assisting students to study effectively, make informed decisions about their academic modules, solve problems, develop a growth mindset, clarify career aspirations and enjoy a holistic university experience. This clarification process assists students to develop educational goals and achieve their personal vision. Advising is a joint decision-making process where students and advisors discuss the appropriate support services and resources available at UP so that students can then take responsibility for their own learning and subsequent success.

Advisors are committed to empowering students by using early intervention and data-based decision-making to identify and reach out to those who may need support. They are present and available for students who seek assistance. They help to equip them as they explore and develop their academic and personal goals. In addition, they share skills, advice, training, and support with students as they explore and work toward their vocational ambitions. FSAs aim to impact positively the academic and professional development of students so that they are able to finish their degrees in the minimum time, reach their optimal level of functioning beyond student life, and become fully fledged members of society.

Academic advisors provide service in the Merensky 2 Library foyer

The advising programme, as manifest within the Faculty of Theology and Religion, is further committed, through its faith-based approach, to ensuring all students thrive during their time within the UP community. To effect this, advisors help students come to terms with their own backgrounds and contexts, understand their present realities and opportunities, and gain a greater sense of personal agency insofar as their future dreams are concerned. Like many, if not all such enterprises on and beyond UP's various campuses, the leaders of this programme found the global health crisis brought on by COVID-19 to be an unavoidable but not an unsurmountable obstacle along a shared path. Various virtual communication methods were used effectively to provide support and assistance to the faculty's students, as individuals or in groups.

Now, as exclusively online engagement with students begins to wane, making way for renewed onsite activities, advisors hope to make the most of what lessons were learned amid pandemic restrictions, first by cataloguing progress over the course of recent months, then by building toward a fresh vision for a new year. To that end, this report offers a thematic summary of past student

advising strategies within the Faculty of Theology and Religion, each one followed by practical steps to be taken in the same area going forward.

Past advising strategies

- First quarter of 2021: Online workshop on school readiness
- Second quarter of 2021: Online workshop on academic writing
- Third quarter of 2021: Online workshop on stress management
- Fourth quarter of 2021: Online workshop on examination preparation

Practical future steps

- Workshops in 2022 will need to transition from being fully online to being both online and onsite.
- New concepts for workshops must be explored, specifically related to social reintegration in a post-pandemic world.

Tutoring Programme

In addition to support from advisors, the faculty's students have access to tutors. Advisors often refer students to tutors if their problems relate to understanding the work being done in a module.

Past tutoring strategies

- All first-year modules in 2021 were supplied with tutors who had been trained in the remote teaching and learning protocols at UP.
- Tutors were monitored by the faculty tutor coordinator and invited to attend fellowship events throughout the year.
- Working closely with their lecturers, tutors served students by facilitating tutorials, answering individual queries and marking assignments.
- Tutors were expected to submit records of their interaction with students over the course of the year to the Department for Education Innovation.

Practical future steps

- Now back on campus, the 2022 tutor cohort will need to be prepared for hybrid tutorials with first-year students.
- The tutor coordinator must redouble his efforts to ensure proper reporting happens at the end of the first and second semesters.

Mentoring Programme

First-year students in the Faculty of Theology and Religion participate in the mentorship programme run by the Department of Student Affairs since 2008. However, in 2021, a new UP Alumni Mentorship programme, organised by Dr Martina Jordaan, was introduced to senior students. Students were invited at the beginning of the year to apply for the programme. Requirements are that mentors and students meet at least twice a year and keep contact. Occasionally, seminars are also presented to all UP students on the programme. This programme contributes to the work readiness of students as they have the opportunity to learn from past graduates already working in the field. Students from the faculty who completed the programme during 2021 were:

- Kgopotso Mapadimeng
- Jools Chipelo
- Bornwise Nkuna
- Boitshoko Dudu Molatlhegi
- Grace Gugulethu Mlangeni
- Mahlatse Aphane
- Palesa Mademane
- Gwyneth Klein
- Nolitah Shokane

Practical future steps

The opportunity will be advertised more widely in 2022. It is a way of preparing students for their professional lives once they graduate.

Employability Strategies

The faculty is constantly seeking ways to improve the employability of its students. This led to the identification of several growth areas in the curriculum. New modules were conceptualised, designed and developed around the following topics. These modules will soon form part of our innovative curriculum.

- Philosophy of religion
- Entrepreneurial theology
- Online MPhil (Interreligious Relations)
- Online trajectory in community development

Students develop graduate attributes during community engagement: Lerato House projects

Students develop graduate attributes during community engagement: Lerato House projects

Advisors might also refer students to services to increase their employability. Often, employability starts with the right career and degree choice. Then, within degrees, there is often an orientation towards professional life. However, UP also offers other services.

Past employability strategies

- During orientation, incoming students are provided with examples of career paths to follow through the Ready4Work panel discussion.
- Church partner representatives on campus and members of the advising team work in concert to shepherd people in denominational ordination processes.
- When possible, senior students are appointed as tutors and research associates to give them exposure to the professional academic field.
- Final-year students are directed to the Career Services Office (part of the Department of Enrolment and Student Administration) for CV preparation and job interview training.
- There is also a free online Ready-for-Work programme run through Enterprises UP comprising about 40 modules. In addition, the programme has three tutorials specifically developed for students in this faculty.

Practical future steps

- Alternative ministry paths, such as pastoral counselling and community development, must be promoted as students begin degree programmes.
- Graduates of the faculty will be invited back during career expo days to share their stories and recruit future alumni.

The faculty thus has a fairly comprehensive student support and development package in addition to its preparing students academically for their professions and for further study.

Financial Support Strategies

Advisors are also one way of identifying students who need basic support, and they are referred appropriately.

Past student support strategies

- The support fund within the faculty, Life Abundant, helped numerous students pay for food, housing, device repairs, and data in 2021.
- Life Abundant also spent tens of thousands of rand assisting students struggling financially with tuition payments.
- The fund leaders, members, and beneficiaries meet in November for a banquet of food and feedback.
- A new major donor was added to the list of Life Abundant partners in 2021, one that has already contributed R100 000 toward its mission.

Practical future steps

The partnership base of Life Abundant is in need of further expansion, specifically in terms of monthly contributors.

- More news from the fund and its various activities can be shared with South African society at large.

The increased dependence on technology in teaching activities, combined with the limitations of access to devices and data for students, led to the establishing of a computer laboratory within the faculty. This facility is made available to students so that they have access to data and devices that will grant access to study material. It is believed that the establishment of the faculty computer laboratory contributed to the success of students during 2021.

Innovative Teaching in the Department of New Testament and Related Literature

The Department of New Testament and Related Literature appreciates the advantages that the use of technology and e-learning methods bring to the pedagogical process. Even before the COVID-19 pandemic hit, lecturers were well-versed in clickUP, thanks to instructional designers in the Department for Education Innovation. Lecturers made full use of the affordances of the University's learning management system. The most important principle for the department in the use of any innovation, whether it be technological advances or new pedagogical methods, is that it should be to the students' advantage. Academics are always guided by what they see as their main aim as teachers—to do everything they can, with everything at their disposal, to ensure that students pass every module with newfound, enriched knowledge and competency in the subject matter.

When the pandemic hit in 2020, the University was forced into an online-only teaching environment, which meant that many adjustments had to be made if lecturers wanted to ensure that students had a positive learning experience and achieved success. The results of the changes necessitated by the lockdown have been so effective in many cases that the department intends to keep them as they move forward into hybrid, face-to-face teaching again.

The department restructured modules in such a way that everything lecturers did with the students—from classes right through to assessments—would assist students with their planning for, and preparation of, their work. Students were suddenly faced with a new and

In the classroom

difficult situation—they had to learn in isolation from their teachers/guides and from one another, often in less than ideal circumstances. In these uncertain circumstances, it would be the easiest thing to become depressed and lethargic and fall behind. Academics built the modules in such a way as to 'force' students to engage with the content on a weekly basis, thus ensuring that they did not fall behind and get lost, as illustrated below:

- Adaptive release and continuous evaluation

Students could only gain access to every new week's lecture once they had completed a very short MCQ test about the previous week's content. This gave us a way to know if students were keeping up, allowing us to contact those that started lagging behind to encourage them; it also allowed the students to evaluate and review their knowledge of the previous lecture. These short MCQ tests were supplemented with longer tests (with a greater variety of question formats) at the end of a section of content/unit. In this way, students who simply did what was expected of them every week had reviewed new knowledge at least three times (lecture included) and were building up their semester mark in small increments. They could see their efforts building positively into their mark.

- Online presence and communication

In a time that was universally experienced as extremely isolating, we had to make sure that students knew we were there for them and that what they were doing was being seen. We did that by, for example, making sure we answered all emails within 12 hours maximum and constantly updating the clickUP module with all-new and relevant information. We also made sure to provide more detailed feedback to students on the things they did, whether it be with a feedback email after a test discussing common mistakes and what caused them, or commentary on assignments handed in. In everything, we tried to make students feel that we were almost as present as if they were able to be on campus.

Ensuring accessibility

In a time when most students were far from resources, something that could very easily make them give up, we ensured that everything we asked them to use was available to them through the clickUP module. This was made easier by the fact that many publishers made their books available for download and use but, where this was not the case, we changed what they needed to things that were available.

But the department realised that this knowledge only means something if students are able to apply it to their own lives. That is the only way that it becomes lived knowledge, inherent knowledge. To ensure that students could apply their new knowledge to their own lives and contexts, the following approaches were used:

- Contextual assignments

Each of the modules also contained assignments, the focus of which was students' lived experience and the practical/local contextual application of what they were learning. This practical/contextual application was, eg, through critical comparison with knowledge and values they identified in their families and communities, or the conversion of the content into a sermon or Bible study they could use in their congregations.

- Global exposure

One 'positive' from the pandemic has been that it has provided greater access to the global community. Where once academics thought that they had to travel somewhere to gain exposure and participate in a global community of scholars, they now know that online participation is already a great introduction and experience. Now, more seminars and conferences are available online (and to a broader audience than before), and international partners were willing to assist the department and its students through, eg, guest lectures (before these could only be arranged as part of a visit to UP). So, where possible, lecturers introduced students to other cultures and contexts through lecturers from other countries and continents presenting guest lectures and through attending relevant webinars together. In the exposure to, and comparison with, other cultures and contexts, lecturers hope that students can re-engage with their own cultures and contexts in new ways.

Department of Library Services Supports the Faculty of Theology and Religion

The DLS was agile in its support to the faculty during the COVID-19 crisis. The aim was to provide quality support continuously to the lecturers and students who had information and research needs. The virtual library remained fully functional, and the information specialist was still able to assist staff and students. The DLS and the information specialist prioritised making many resources and services accessible online.

The following services were available on request:

- Online consultations

Google Hangouts was used as a communication tool to conduct consultations in the absence of face-to-face consultations. Interaction on national level and with other geographical locations in Africa, Asia, and the US were successfully reached. 467 online enquiries of these students and 211 from the academic staff were answered. The testimonies of two postgraduate students were published in the newsletter of the library: Rate Us: how the DLS is making a difference in the life of Gavin Michal and Rate Us: how the DLS is making a difference in the life of Tom Torbeyns.

- Online training sessions and workshops

It was particularly urgent to reach students using online tools to train and conduct workshops. Twelve online workshops were conducted, and several individual online training sessions took place. The information skills of students definitely developed, and it is interesting that the views and usage of the subject's guides were extremely high in comparison with the size of the faculty.

Library facilities: onsite and online

The 10 most-used subject guides at UP are listed in Table 7:

Table 7: Top 10 most viewed subject guides during 2021 at UP	
Research guide	175 438
Theology: Old Testament and Hebrew Scriptures	47 961
Theology: Systematic Theology/Dogmatics	23 183
EndNote	22 062
Examination papers	16 551
Theology and Religion: Postgraduate Studies	11 498
Chemistry	9 687
Theology: Historical Theology	8 777
Religion Studies: Islam	8 663

- Collection building

The budget allocated enabled the purchase of 97 books to build the faculty's collection. Requests from staff were taken into consideration as much as possible. Academic staff also made use of the opportunity to use their own research funds to order books with the aim of enhancing their own research. These books in the library system have a note—Kept at the Department—and are not available to other users. Donations from external parties, if relevant, were included in the system. Books published as open-source by staff in the faculty, and the catalogue records, were add to the system to preserve them as Electronic TUKKIANA.

- Notification of available free content to academic staff and students

During COVID-19, leading publishers opened their content for academic libraries worldwide. These notifications to the Acquisition Unit in the library were communicated to information specialists to inform staff and students. This action of the publishing industry gave users access to very expensive content for a certain period. Faculty members made extensive use of this concession to access certain content.

- Research profiles and visibility

On request from new staff and first-time publishers at the faculty, ORCID profiles were created to improve research visibility and research impact and to raise the profile of the faculty and University as a whole. Existing profiles were also updated on request.

- Appointment of new Faculty Library Manager

The previous Faculty Library Manager, Ms Anna Siwela, was appointed as the Deputy Director for Academic Services. Ms Viveka Pillai was appointed on 1 August 2021 in the position of Faculty Library Manager: Humanities and Theology and Religion. She was introduced to the faculty by the Dean, Professor Jerry Pillay.

- Teaching and Learning Committee meetings

Faculty Library Manager Viveka Pillai and Information Specialist Christine Nel attended meetings to stay informed on the developments in the faculty. They then adapted the DLS approach for an effective, relevant service to the faculty.

The faculty appreciates the positive synergy with DLS and takes advantage of the many initiatives that serve all faculties, as well as the support provided directly by the faculty's DLS staff.

Faculty of Veterinary Science

Enrolment
1 533

Student success rate UG
96,8%

Graduates
250

BVetNurs graduates

Congratulations to the BVetNurs Class of 2021!

In 2021, the faculty made history when it produced South Africa's first Bachelor in Veterinary Nursing (BVetNurs) graduates. The three-year BVetNurs degree programme replaced the previous two-year veterinary nursing diploma with its first intake of students in 2019.

The University of Pretoria is the only university in Africa that provides training for veterinary nurses. The concept of formal training in veterinary nursing originated in England and America. In 1958, Professor CFB Hofmeyr, then Head of the Department of Surgery at the Faculty of Veterinary Science at Onderstepoort, motivated for employment of medical nursing sisters. The appointments were granted in 1962, but the medically trained nursing sisters had their shortcomings in the veterinary field. A two-person committee was appointed to investigate the feasibility of training veterinary nurses in South Africa.

UP, on the recommendation of the committee, then introduced a full-time, two-year university diploma course in 1977. A revised diploma curriculum was implemented in 1995, with no subsequent changes made. The diploma produced 1 180 very well-qualified veterinary nurses who were increasingly sought after locally and abroad.

Years later, though, the veterinary nursing diploma programme was not aligned to the new Higher Education Qualifications Sub-Framework. A further issue was that it did not allow diplomats entry into postgraduate education. The Veterinary Nurses Association of South Africa therefore petitioned UP to discontinue the two-year diploma programme and institute to a three-year degree programme to afford those students with a qualification in veterinary nursing the opportunity to enter postgraduate training.

After a very intricate application process that spanned several years, the BVetNurs degree, a professional three-year bachelor's degree, was accredited by the Council on Higher Education (CHE) in September 2017. Curriculum design started in November 2017. The academic requirements from the South African Veterinary Council (as set out in the day-one competencies required of a veterinary nursing professional) and the Higher Education Quality Committee of the CHE were considered in curriculum design.

It was important that the degree was not simply an extended version of the diploma but a different innovation, building on the strengths of the diploma but adding new and unique qualities.

The degree was designed as a spiral, integrated curriculum. It is also referred to as scaffolded learning, where progression is made from general theoretical veterinary principles about healthy animals to more advanced practical veterinary nursing, to the nursing of critical care patients. A backward programme design was followed, where three elements, namely day-one competencies (the starting point and desired outcome), the knowledge and skills required (the content) and valid assessment methods (related to outcomes), were aligned. During the curriculum design process, overlaps, redundancies, and omissions in the diploma curriculum were identified and corrected. New topics were added, such as exotic animal and wildlife nursing, research methodology, animal welfare science, animal protection, and public health. A professional skills programme was also added including self-awareness, achieving wellness, practice management and strategic client service, information management, cultural diversity, and communication.

A modern and well-designed integrated curriculum was established,

comprehensive in terms of content and educational approach, which benchmarks well with any other veterinary nursing training programmes internationally.

An innovative macro-curriculum was approved by the BVetNurs Programme Committee in January 2018. A final meso- and micro-curriculum and study guides were approved by the BVetNurs Programme Committee by October 2018. The faculty was now ready to receive the first intake of BVetNurs students. The BVetNurs degree was successfully implemented in February 2019 with the enrolment of 38 diverse students.

The biggest strength (and also an innovative aspect) of the degree curriculum lies in the spiral, integrated educational approach, which allows a deeper understanding of content and provides for mixing of content between disciplines so that clinical understanding and application of real-life multi-disciplinary problems and cases happens smoothly. Another strength is that time is allowed in the daily lecture roster for self-directed study, thereby shifting the approach to student-centred learning, instead of the historic lecturer-centred teaching. A greater emphasis has been placed on hybrid teaching, whereby some face-to-face contact time has been replaced by online learning activities so that the two complement each other. It has been explained how the degree curriculum built on the diploma curriculum and added new topics; however, it also introduced new teaching approaches, which will ensure that enrolment numbers and student success will increase as the new degree matures.

When the first BVetNurs graduates qualified in November 2021, they brought to fruition the dedication and commitment of numerous role-players over the years and heralded an exciting new chapter in the education of veterinary nurses in South Africa.

The faculty celebrates this important milestone in its history and congratulates the class of 2021 on its achievement of a 100% pass rate in the final exit examination. On behalf of the veterinary community in South Africa, the new veterinary nurses are welcomed to the industry but also potentially into postgraduate studies. The faculty wishes them well in their careers and requests that the public of South Africa celebrate the contribution that veterinary nurses make to society. The first postgraduate programmes will be implemented in 2022.

Scholarship of Teaching and Learning (SoTL): The Faculty's First PhD in Veterinary Education

Professor Rhoda Leask, a specialist veterinarian in small stock herd health, obtained the first PhD in veterinary education registered in the Faculty of Veterinary Science in 2021. She was supervised by Professor Dietmar Holm, the Deputy Dean: Teaching and Learning in the Faculty, and Professor Linda van Ryneveld, the Head of COES.

In her thesis, 'A meristemic approach to curriculum design in veterinary education', Professor Leask used a mixed methodology to conceptualise and assess a new approach to curriculum design and revision. The term 'meristemic' was derived from the words 'meristematic' and 'epistemic', the words referring to plant growth and knowledge respectively. The 'meristem' refers to an area of potential growth in a plant and was used as metaphor for areas of potential future learning that are established at certain nodes within a

Professor Rhoda Leask

curriculum. The study investigated whether such curriculum nodes of growth have the potential to enable life-long learning.

The study evaluated an existing curriculum for potential meristems by comparing the curriculum with the day-one competencies required of a practicing veterinarian in the field of small stock herd health through a backward process.

A further step of the meristemic approach was to determine the importance of practical clinical training in the curriculum and how the practical training can benefit student learning even within theoretical modules. The content of the assessment was evaluated, and students' performance in a theoretical assessment was compared to that of practitioners. The research was performed in this manner as the students had little practical experience compared to the practitioners, who continuously rely on practical experience to reinforce their theoretical knowledge. This assisted in determining whether more practical components of the modules could contribute to students' theoretical training. The results showed that practical (clinical) components should be included from an earlier stage in the curriculum in order to cement the theoretical knowledge gained.

Professor Leask furthermore established that student attitudes towards learning (student engagement) and the topic and cognitive level of the question affected assessment scores more than the mode of delivery (face-to-face v self-directed learning) or the lecturer.

The results showed that the meristemic approach can be successfully applied to curriculum design by establishing potential growth nodes at key points within a curriculum to stimulate student engagement using practical (clinical) exposure that reinforces theoretical curriculum content. This benefit can be further established by carefully considering the number of day-one competencies combined in assessment and thus the cognitive level of the assessment. The long-term benefit is ensuring that graduates become life-long learners.

The full thesis is available at https://repository.up.ac.za/handle/2263/83254.

2021 Virtual 'I Wanna Be a Veterinary Professional' Event

From 7 to 8 May 2021, the faculty hosted a virtual edition of its 'I Wanna Be a Veterinary Professional' weekend, presented over two days by the faculty's Onderstepoort Paraveterinary and Veterinary Student Committee (OPVSC) in association with JuniorTukkie and Hill's Pet Nutrition. The online weekend was open for all Grade 8–12 learners who registered for the event.

'I Wanna Be a Veterinary Professional'

The real-time programme contained live interactive sessions and exciting videos of life as a student at the faculty in Onderstepoort. The first day included a session with Dr Kate May, manager of the faculty's Skills Lab, on general knots used in practice.

The event was opened by Professor Dietmar Holm, Deputy Dean: Teaching and Learning in the faculty, who also featured in a discussion on the second day about how to be selected for the veterinary science or veterinary nursing degrees.

This weekend was initiated by the OPVSC in 2010 specifically to encourage previously disadvantaged school learners to develop an interest in veterinary science. The event takes place annually with students from across the country coming to the Faculty of Veterinary Science to learn more about the amazing veterinary science and veterinary nursing career fields.

Owing to the COVID-19 pandemic, the 2021 event was hosted online. Compared to the ±80–100 learners who previously attended the physical event at Onderstepoort, the virtual event in 2021 was attended by 379 participants from all across South Africa. Participants enjoyed the interactive online session and gave positive feedback. The online presentation format will now become an annual event in order to ensure access for more prospective students.

Mamelodi Campus

Facilities for Teaching and Learning

The extended curriculum programmes (ECPs) for two faculties are offered on the Mamelodi Campus: Natural and Agricultural Sciences and Economic and Management Sciences. Building on the achievements in 2020, the Mamelodi Campus was better placed to continue with remote teaching and learning. The material developed in 2020 was revised in some instances and re-used in 2021. Owing to lockdown requirements in 2021, all online teaching and learning continued as in 2020. However, there was a need to accommodate indigent students by granting them special access to campus to overcome their connectivity challenges.

Lecturers of modules with a practical component (eg Chemistry, Physics, Statistics, and Academic Information Management) opted for online practical sessions on clickUP. In some instances, online practical sessions using the McGraw-Hill platform were used (Molecular and Cell Biology) or, in other cases, students were given assignments based on the actual practical classes. The 822 enrolled students achieved an average pass rate of 87,5%.

Looking forward to 2022, the COVID-19 social distancing capacity of most of Mamelodi Campus's lecture venues is a challenge: they cannot accommodate 50 students. This will be a limiting factor for bringing students back to campus without negatively affecting their lectures and daily activities.

While many of the campus staff and students have not been on campus owing to COVID-19 restrictions, Mamelodi Campus commenced with projects to improve and upgrade the campus for the convenience of its students and staff. The long-awaited refurbishment and upgrade of the campus library was concluded on 6 August 2021. The refurbished and upgraded library has new facilities that support hybrid learning for the academic programmes on the campus. Among these are the state-of-the-art discussion facilities, with networked presentation capabilities, as well as new computer workstations to enable individual and group academic activities in the library. There is also a coffee shop planned for inside the library, with new furnishing to allow for studying, reading, and socialising in supportive and comfortable spaces in the library.

Formative and Summative Assessment of Teaching and Learning

For the last two years, Mamelodi Campus has employed a formative assessment model using a 'test week' approach, as practised in EBIT. During the semester, students carry out several formative assessments tasks in addition to the two semester tests for each module comprising other class tests, assignments, and practical work (in selected modules). All these assessments contribute to a semester mark with a breakdown that differs according to the module.

With some exceptions, students were able to write their mid-year examinations for most modules, and normal exclusion criteria were applied at the end of the first semester. The July and November examinations ran smoothly with 95–99% of registered students completing their examinations successfully and only a few cases of connectivity problems. Extension of examination time was provided to cater for load shedding. As usual, students who were unable to write were permitted to write in either the supplementary or special examination period.

Teaching and Learning Day Webinar

In 2021, Dr Mwambakana-Mutombo, the Head of the academic programmes, ran a successful webinar in April for the annual Teaching and Learning Day. The webinar featured several special guests from other institutions, including Dr Shoba Rathilal from the Durban University of Technology; Dr Laura Dison and Professor Rodney Michael Genga, both from the University of the Witwatersrand; Professor Liz Brenner from the University of Johannesburg; and Professor Ian Scott from the University of Cape Town. The webinar addressed the following two issues: students' and lecturers' involvement in the online teaching and learning and the management of online teaching and learning. Dr Muller from ENGAGE (the augmented programme in EBIT) and Dr Mwambakana-Mutombo from ECPs facilitated the various sessions.

The External Review of ECPs

For the first time since the inception of ECPs, an external review was held. Owing to the COVID-19 pandemic, the normal onsite external review was converted to an online set of interviews at the end of June 2021.

Dr Mwambakana-Mutombo, with the assistance of Research Fellow Professor Rollnick, prepared the self-evaluation report along with other documentation. The external review panel was drawn from a number of national and international institutions. The panel commended the Mamelodi team:

> The clarity of purpose and mission of the ECPs offerings at the Mamelodi Campus are commended. The impact of the programmes is clear. This became particularly evident through the positive feedback from the students who were interviewed. The interviews were inspiring and humbling, and it clearly demonstrates how these programmes assisted them during their studies, transition and eventually in their success and career choices.

The panel also commended

- the Turnaround Strategy, which seeks to improve the admission system of the extended curriculum programmes, and
- the intensive psychological and emotional support provided to students during the first 12 months of the ECP, which was highly appreciated by interviewed students. Special mention was made of Ms Ida Meyer.

In response to the review's 16 recommendations, the leadership of the campus submitted an implementation plan to be studied by the Academic Planning Committee.

Curriculum Transformation: Incorporating 21st Century Skills in Chemistry

Chemistry is a core module for most BSc students on the extended curriculum programmes. In her chemistry module, Dr Christine Mundy not only aims to equip students for a smooth transition into further studies but also to lay the groundwork for new batches of global citizens with 21st-century skills. Creativity, critical thinking, and communication were the 21st-century skills that she focused on through a novel meme project.

Students chose a topic in chemistry, wrote a short article, and produced three of their own memes to showcase the topic. For anyone left wondering what a meme is, it is a captioned image shared on the Internet intended to elicit humour, that is, it is the 21st-century equivalent of a joke, which often touches on various issues close to the heart of society. This project allowed students to engage with each other through their intellect, originality, and sense of humour in the context of chemistry.

Upon reflection, one student commented: 'Researching and finding more information about the processes and differences was very fun. I had fun doing all my research and putting it into one article. Creating memes was the best part. I really had fun with them, and I am confident that the memes explain my topic very well'. The success of the meme project has made it an integral component of the CMY 143 curriculum going forward.

Meme from Student 2

Meme from Student 1

Meme from Student 3

Nomination of the Best Lecturers of the Year

Two lecturers were nominated for best lecturer of the year: one from NAS and the other from EMS. Below are their stories.

Mr Martin Pienaar (Mathematics Lecturer, Faculty of Natural and Agricultural Sciences)

Mr Martin Pienaar

Flipped classroom teaching and learning experiences enhance proactive collaboration efforts among lecturer and learners, according to Mr Pienaar.

UP launched a brand new pre-calculus course to students on the Mathematical Sciences and Physical Sciences ECPs in 2021. This was initiated by the Department of Mathematics and Applied Mathematics to prepare ECPs students to adapt better during their second and third years of study on Hatfield Campus. A pass mark in pre-calculus is a prerequisite to enter calculus during the second semester of their first year. Mr Pienaar was tasked with coordinating and lecturing both modules in 2021 and will do so again in 2022.

Mr Pienaar says: 'As I was planning for these courses, I knew I wanted to break away from the traditional style of passive learning to a more balanced scenario where I allow my students to contribute according to their level of confidence and willingness to collaborate. Any subject in pure mathematics demands that the lecturer do most of the talking and explanation, so I decided to reinforce my students' level of interest to join the lecture by playing one YouTube music video of their choice during the three minutes preceding the official start of each lecture. This created a feeling of acceptance among my students, and the results were pleasant—my students were willing to collaborate during the remainder of each lecture (as they have noticed their lecturer's willingness to pay attention to team-building in the class)'.

He decided to expand on the collaboration idea during the tutorial sessions. Tutorial sessions were re-named 'roast segments', during which the students had the chance to 'roast' each other, under the careful supervision of the lecturer. He would prepare a few exercises ahead of each week's sessions, which students had to prepare in advance (including detailed solution methods, etc). They uploaded their work 15 minutes before each session. When the session started, they were invited to nominate fellow students (or themselves) to present, again, under Mr Pienaars's supervision. The learning experience of each student greatly improved as each student in the class was encouraged to ask questions, make remarks, etc, at any given time during the presentation. There was active participation from all students in each session, and they really enjoyed the roasting part. Some students put in a great deal of extra work, and their presentations initiated them as future lecturers.

The results of the initiative were outstanding, and Mr Pienaar claims: 'I was thrilled after I was informed that my students nominated me for the Best First Year Lecturer Award within the Faculty of Natural and Agricultural Sciences!'.

WTW 135 Welcome

Mr Fanie Walters (Accounting Lecturer, Faculty of Economics and Management Sciences)

Mr Fanie Walters

We ~~have to~~ 'GET TO' do things online

Mr Fanie Walters, a lecturer in the Department of Accounting and module coordinator for the FRK 133/143 accounting modules in the BCom ECP on the Mamelodi Campus, has exceeded all expectations in terms of his teaching and learning initiatives in the 'tumultuous' 2020 and 2021. He created high quality video content for students, and went out of his way to put together material for students struggling with connectivity. But where he truly excelled was in his novel solutions for assessments and engagement with students in an online environment.

Mr Walters says: 'A few months ago, just before I headed off for my routine 4 km run in our neighbourhood, my wife encouraged me with these words: "You don't have to go for a run … you get to". It was only some time after that run that I really began to comprehend the beauty and benefits of a "get to" perspective. When I think "I have to … (go for a run or complete a report)", whatever I fill in the blank, feels a lot "heavier" than when I think "I get to …". Looking at my task through the lens of "I get to …", I also begin to realise that there are many out there who do not "get to", not owing to their choices, but to their circumstances (sickness, lack of opportunities, etc). I've not nailed this perspective yet in all my tasks, but it has begun to give me new energy and joy in much of what I do, and, of course, better outputs'.

Two initiatives that lecturers GOT TO implement while teaching accounting online for the BCom ECP are described below.

To engage with students and stimulate the freedom to ask questions, the teaching team made use of the CAMPUSWIRE Q&A platform. The platform makes it safe for students to ask their questions (as their anonymity can be protected). A fun and competitive element is also added with a live leader board displaying the top student contributors. Students earn points for asking or answering each other's questions and can like or 'up-vote' questions and answers, respectively. Students were rewarded for their contributions with 'bonus marks' that contributed to their informal assessment mark, while the top contributors also earned vouchers from Bookmark, the campus bookstore.

One student highlighted the benefit of the platform as follows: 'Campuswire was also helpful because it allowed us as students to ask questions. Also, everyone had access to the answers that were shared. Moreover, we had the opportunity to answer our peers' questions, which consequently boosted my confidence and my attitude towards the module—especially when my answers got up voted by Mr Walters. This made me want to improve my marks and work even harder'.

The online assessments he created seem to be years ahead of the crisis and provided answers to the integrity concern associated with online assessments. He was able to code and programme assessments so that each student (more than 300 students in the undergraduate modules that he taught) received a different, yet similar version of an assessment. The assessments he created also boast capabilities in terms of awarding principal marks and allowing for multi-order entry, which has not previously been seen or thought possible in the online accounting assessment space.

The team is proud of its dynamic accounting assessments. Often, online accounting assessments do not allow enough flexibility in terms of student entry. By coding assessments on MyOpenMath, which runs on the iMathAS platform, lecturers were able to create dynamic, auto-graded assessments that offered a better accounting assessment experience for students and instructors. The assessments have a few unique differentiators:

- Assessments recognise multi-order entry by students in journals, statements, and other integrated accounting-type questions.
- Principal ('carry-through') marks can be awarded where students need to use an answer from earlier in an assessment.
- Randomised values and phrases help to create similar but unique assessments for each student and ultimately protect the integrity of assessments.

Students benefit from an improved test-taking experience and can undertake unlimited practice opportunities of 'homework' assessments while receiving immediate feedback. The marking time freed up for lecturers and tutors also means that more time can be dedicated to assisting students with their individual questions.

The teaching team GOT an opportunity to do some things online, and lecturers are grateful for the successes they had. Mr Walters concludes: 'But, to conjure up my own idiom: "the Jacarandas are not yet in full bloom" and there's still plenty that we will "GET TO" improve on in the online learning space'.

Staff Development and Progress: Stories of Staff Members

Mamelodi Campus is responsible for mentorship in the University Staff Development Programme, a collaboration between four universities: the University of the Western Cape, the University of Pretoria, the University of Missouri, and Rutgers University–Newark. The mentorship programme is funded by the UCDP of the DHET. Each student is paired with a faculty mentor based at a South African university, as well as one based in the USA. Ms Nandi Weder and Mr Gideon Brits are two Mamelodi PhD candidates and among the four UP staff members who are currently participating in this programme.

Mr Gideon Brits

Ms Weder has converted her reading comprehension intervention to an online intervention, and she is in the last year of her PhD. Her study topic is 'Improving undergraduate students' inferential skills through a reading intervention dealing with expository texts'. Ms Weder will visit Guilford College in North Carolina for two months in 2022 to complete her research and possibly co-teach a module there.

The increase in student numbers does not necessarily relate to an increase in student retention and success in higher education; this is the background of Mr Gideon Brits' study. Mr Brits is investigating six different domains (cognitive, demographic, institutional, economic, personal, and psychological) to determine which relate more to student success than others. His PhD topic is 'An investigation into the domains related to student success in an academic development programme'.

Dr Christine Mundy completed her PhD in science education in 2021. The focus of her studies was on making the abstract and complex topic of spectroscopy accessible for first-year students on the extended curriculum programmes. Part of the success of the Mini Specs was their spontaneous dissemination into students' homes and communities.

Dr Christine Mundy

Comprehensive Online Education Services (COES)

Enrolment
EMS 309
HS 1 405
Total 1 714

Public Health Practitioners: 18 Months in the Making

Since its humble beginnings in 2020, the fully online Postgraduate Diploma (PGDip) in Public Health has proven to be massively popular. With new students joining the programme during each of the six intakes annually, the current number of students in the programme will reach 1 200 in March 2022. While the COVID-19 pandemic may have contributed to the interest in public health as a scholarly discipline, the popularity of the programme is also attributed to the team of committed and dedicated lecturers from the Faculty of Health Sciences' Department of Public Health, under the inspirational leadership of Professor Liz Wolvaardt.

Professor Liz Wolvaardt

Another contributing factor to the programme's success may be the flexibility that fully online studies provide for these students. The fact that the programme is offered in a semi-synchronous manner and does not require any face-to-face contact sessions on campus enables geographically dispersed working adults to further their studies from the comfort of their own homes.

The majority of the students in the fully online PGDip in Public Health are working full time and are married with children, meaning that flexibility really matters to them. As such, the semi-synchronous nature of the programme is highly attractive. The fully online programme is structured into nine modules of seven weeks each. Each week starts with an introduction and, in some cases, with a virtual synchronous session that is recorded and made available in case students are not able to attend. A typical week would then entail a variety of learning activities, such as reading assignments, online discussions, written assignments, video blogs, and formative and summative assessments. While students are required to complete the week's assignments before midnight on the Sunday evening, they are able to work on these assignments asynchronously throughout the week. In other words, students have the flexibility to structure and plan their studies around their unique work and family commitments.

Students in the fully online programme commented positively on the support they get from their online lecturers and tutors but also indicated how highly they valued the inputs of their classmates. It seems as if the fear that online learning isolates and insulates students is unfounded in this programme. The way the programme is structured requires students to work together during group work and peer-assessment exercises, similar to what one can expect in the world of work. However, it seems like they truly formed a community of like-minded individuals who support one another far beyond just the coursework.

Professor Linda van Ryneveld, the Director of Comprehensive Online Education Services, applauds the commitment and professionalism of the PGDip (Public Health) lecturing team in designing and facilitating this high-quality online programme to the student body amid a global pandemic. She mentioned that they look forward to the April 2022 graduation ceremonies, where the first cohort of 44 students will receive their qualifications.

Many of the first graduates indicated their desire to continue with their master's in public health in 2022, as some of the following feedback shows:

- 'I am forever grateful to UP and the PGDip (Public Health) team. The experience was phenomenal! I got a promotion at work because of the knowledge and skills obtained from this course, and I am definitely doing my MPH with UP'.
- 'Thank you for an unforgettable experience. I've learned so much and met people along the way who are now like family!'
- 'Thank you so much for facilitating such a positive learning environment! I really enjoyed this course, and I am looking forward to starting my MPH next year'.

Introducing Fully Online Gateway Modules: Finishing Your Degree in Minimum Time

During 2021, COES conceptualised the idea of introducing a selection of fully online gateway modules for students who failed one of a selected number of face-to-face or hybrid learning modules that serve as prerequisites for other modules the following year. Gateway modules are a second attempt for students to pass a module, opening the gate or removing the barrier to progress within their programme. Gateway modules cover the entire curriculum of the module and are presented over a period of four weeks in January, after the December holiday break but before the commencement of the academic year in February. This means that, if students fail one of the modules in their first year, they will be able to repeat it, fully online, in January the next year. Students who successfully complete this second attempt at the module will be able to register, as normal, for their second-year modules when classes start in February.

Since Gateway modules are offered fully online, students who have access to a computer and stable Wi-Fi may opt to take these modules from their homes or wherever they find themselves during the recess. By not having to come to campus, students do not need to make special transport arrangements or find accommodation to attend their classes during this time. This flexibility has the potential to save students a fair amount of money and discomfort.

Gateway modules are developed for online delivery by lecturers, with the support of a learning designer from COES, to ensure that students have a positive online learning experience. The modules will require students to engage extensively and intensively with the curriculum in a highly structured, and mostly self-directed, semi-synchronous manner. Seed funding is available to assist with the development of these pedagogically sound online versions of the modules in question.

It is important to note that not all modules in all programmes will be offered as gateway modules. The decision to offer a module in this way lies with programme coordinators and HoDs. The design and development of each online gateway module requires at least six months' lead time.

To acquaint the faculties with the potential of the online gateway modules, a roadshow to faculty boards was planned for early 2022. Faculties will have time to decide on their participation in the project and then work with COES for several months to develop the best possible online course that will facilitate student learning. The plan is to have the courses ready for implementation in January 2023.

The University of Pretoria places a high premium on students successfully completing their degrees in minimum time. The hope is that gateway modules will assist students in catching up on failed modules without adding additional time to their studies.

Gordon Institute of Business Science

Enrolment
1 825

Graduates
938

State-of-the-art High-definition Content Studio for Digital Learning

In this ever-changing, fast-paced world, business schools have had to adapt their teaching methods to meet the expectations of today's students through the use of blended learning formats. In its efforts to provide students with convenience and choice, GIBS has unveiled a state-of-the-art high-definition content studio at its campus in Illovo, which boasts cutting-edge technology that allows for greater flexibility with regard to teaching methodology. The student learning journey is enhanced through the combination of engaging business content and professional multimedia production.

The new state-of-the-art high-definition content studio at GIBS

As a leading business school, GIBS is always pushing the envelope to provide facilities that allow for the cultivation of world-class academic content and thought leadership. As part of its digital offering, the school committed in 2021 to building a new, larger video production studio with a digital set to improve flexibility, quality, and output of video. The project was completed at the end of the year, with the first online academic content available in early January 2022. The studio features 400 LED panels combined to create a digital background capable of accepting up to four different inputs and display videos, presentations, and images in a variety of configurations. It also has 13 high-powered overhead studio lights that illuminate the two sets available in the studio.

Although GIBS was already offering video content in its teaching, the COVID-19 pandemic stimulated a greater need for online content owing to asynchronous learning offered by the school and a greater appetite for online learning.

Through a larger production hub, where videographers, editors, graphic designers, and instructional designers collaborate with the marketing team to deliver world-class online products, GIBS now offers 20 fully asynchronous skills programmes for individuals and teams. The content from the studio will enable GIBS to continue providing an outstanding business education that will equip students with the right tools for a changing world.

MPhil EBM Learning Report

The deep and slower pace of thinking required in business and management doctoral studies stands in contrast to the quick thinking and rapid decision-making required in the real world of business. The ability to engage critically with a real-world phenomenon using a theoretical lens is a skill that few business doctoral candidates have developed prior to starting their doctorates. Furthermore, in South Africa, a doctorate is awarded through independent research by virtue of an accepted thesis with no credits coming from taught coursework. For this reason, an MPhil in evidence-based management (EBM) was introduced in 2021 to familiarise students with and normalise the research process required during a doctorate.

The cornerstone of evidence-based management is a systematic literature review, typically carried out by several researchers. In this MPhil (EBM), there are two independent research outputs: the first is an empirical research plan, and the second is a structured literature review. The empirical research plan forms the basis of a proposal that can be used to apply for a doctoral degree and is the capstone assignment for the research methods stream of the MPhil. A second stream, the thematic modules, uses a student-centred approach in which students read literature in their selected field of interest. Here, the skills of reading, writing, and presenting in an academic genre, in order to build their argument, are honed. The focus is on the process of developing an academic argument rather than demonstrating mastery of content.

At the end of each of the three thematic modules, students present their work in progress to faculty and their peers. Making these presentations allows students to get feedback from their peers and faculty members before submitting their final assignments for assessment. In addition, during the course of the module, student responses to focused tasks are posted on the Blackboard discussion board with full transparency. Faculty feedback is also fully transparent to the whole class. This practice mimics the manner in which research is conducted. It is the strength of the argument, developed and acknowledged through input from the academic community, that is measured. Many students have to learn to deal with the discomfort that comes from making their nascent argument visible to all. One further benefit of creating a transparent research community is that the members of the class become exposed to the multidisciplinary nature of management research.

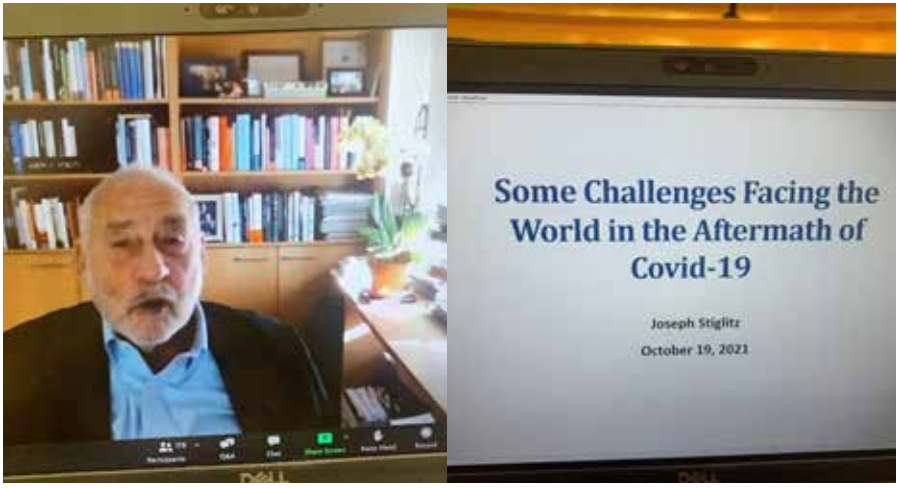
Separating the tasks of preparing an acceptable proposal for the doctorate and learning the skills required to develop this proposal in the MPhil (EBM) enables students to focus first on what is required to develop a sound literature review and familiarise themselves with possible research designs to consider when researching their chosen phenomenon for the doctorate.

Virtual MBA Global Module

Colonel Terry Virts

GIBS had an amazing offering for all MBA students to attend a virtual three-day MBA Global Module. Live and dynamic conversations were held online with leaders from across the globe. The sessions gave the students a valuable platform to connect with industry leaders, thought leaders, and a wider global business community.

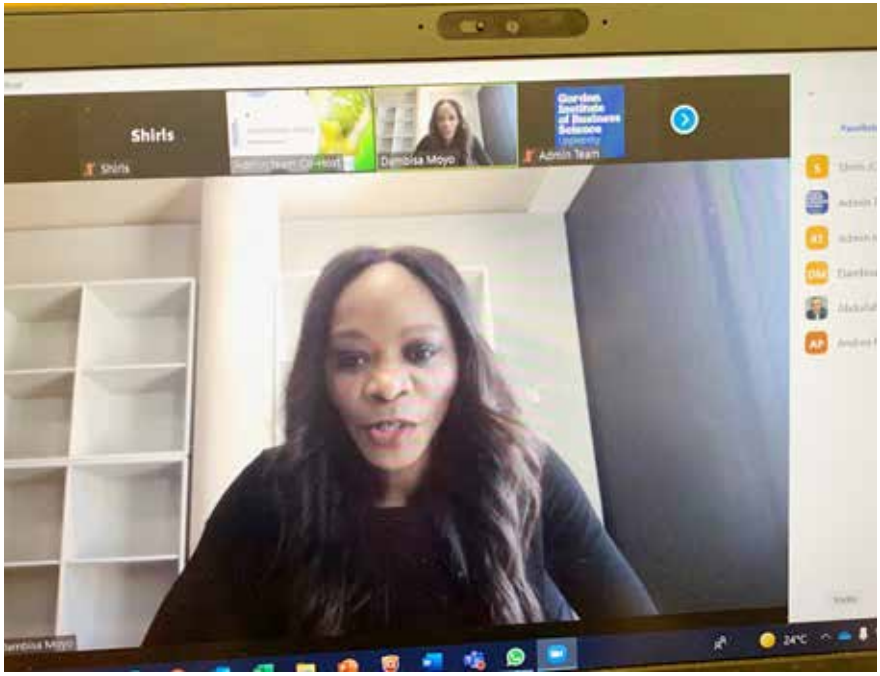
The days were broken down into sessions, which included business sessions, immersive sessions, tales of the world, and anchor speaker sessions. Students had the opportunity to engage with high-level speakers from across the globe such as Professor Joseph Stiglitz, Dr Dambisa Moyo, Peter Van Kets, Colonel Terry Virts, just to mention a few.



Professor Stiglitz

Students were given exposure to different markets and were able to reflect on South Africa and the country's problems and opportunities. They could consider the critical issues shaping the world around us. They were exposed to a variety of organisations, looking at their origins as well as their current and future competitiveness. The speakers discussed best practices and some unorthodox approaches they followed to stay relevant and competitive in their markets.

Students were able to recognise cultural diversity and the impact it has on business and decision-making, as well as understanding the role and responsibilities of business leaders within the developed and emerging market context.



Dr Dambisa Moyo

MPhil with Specialisation in Change Leadership

In September 2022, GIBS launched the first iteration of the Master of Philosophy programme with specialisation in Change Leadership (MPhil CL). This programme, which consists of five core modules, four electives and a research component, brings together organisation-oriented effective change leadership content with a deep focus on more personal competencies. This master's degree focuses on change leaders involved in the future world of work and the intricacies of organisational leadership for sustainability.

The objective of the programme is to develop senior change leaders who are human-centric and can drive change in a wide range of organisations and a variety of situations through adaptive leadership skills and capabilities. The course also introduces students to advanced research while sharpening their skills to approach organisational change from a commercial and social perspective, thus helping them understand why change takes place and how to manage it. This is a research-intensive course focusing on effective change leadership and may articulate into a PhD.

The students on the current programme are business managers and leaders who are looking to develop a deeper understanding of management and organisational change to encourage responsible and sustainable business. This programme will equip them to manage the strategic view of the organisation while also understanding the tactics and tools required to create sustainable change at all levels.

By the end of 2021, the students had completed four of the five core modules and will be completing their final core module in April 2022, after which they will complete their electives (June–September) while working on the integrated research project, which will lead to the completion of the programme in March 2023.

Enterprises University of Pretoria

Building Vital Skills for the Future of Work

Enterprises University of Pretoria (UP) offers a diverse life-long learning solution in various modes of delivery, which continue to provide more companies and individuals with access to upskilling and reskilling opportunities offered by the University of Pretoria.

Today's challenging business environment serves as a reminder to organisations that talent management, which involves appropriately deploying employees' skills to maximise performance, is a critical function. The world is changing rapidly, and organisations will rise or fall based on the strength of their employees. Organisations must ensure that their employees are well-trained and equipped to deal with emerging changes.

In the past two years, successful innovative organisations have approached skills building in a more integrated way and are quietly gaining an edge on rivals. Skills that these organisations are prioritising are increasingly focused on developing social, emotional, and advanced cognitive skills. Skills building is more prevalent than it was prior to the pandemic, with 69% of organisations doing more skills building now than they did before the COVID-19 crisis (McKinsey.com).

While the specific skills considered '21st-century skills' vary from person to person, place to place, or school to school, the term does reflect a general—if somewhat loose and shifting—consensus that almost always includes references to critical thinking and reasoning, as well as creativity and innovation. Future thinking is a fresh perspective that goes beyond strategy. Skills audits and annual workplace skills plans (WSP) can result in a complete realignment of an organisation's strategy, operations, workforce configuration, and skills requirements.

A WSP is an important tool for assisting organisations in addressing their learning and development needs. The WSP requires organisations to identify their skills priorities in accordance with their business strategy, identify the subsequent skills gaps that exist within their workforce through a training needs analysis, and develop or search for the best learning solutions for their employees' career goals.

During 2021, Enterprises UP was a strategic partner to many institutions in both the public and private sectors in the crafting and execution of customised WSPs to meet their organisational goals. Enterprises UP provided 884 training opportunities during the year, which were attended by more than 13 000 individuals representing companies and institutions from all sectors of the economy.

The following are some of the highlights of 2021:

Celebrating the Programme in Blasting Engineering

Successful participants in the Blasting Engineering programme

The programme in blasting engineering has been running for eight years and has been well-received by the industry. The objective of the programme is to develop the delegate's abilities in the six cognitive levels, namely, knowledge, comprehension, application, analysis, synthesis, and evaluation. The programme covered the basics of commercial explosives and the advanced application in both underground and surface mining environments. During the programme, delegates were introduced to the impact of fragmentation on the mining cycle, specialised blasting practices and the effect of blasting on the environment in more detail. The course further covered the assessment of drilling and blasting practices, downstream effects of blasting outcomes, safety in blasting, and legislation.

Creating a Winning Culture in Government One Webinar at a Time

Winning culture webinar

Enterprises UP, together with FranklinCovey South Africa, held a successful 'Mindsets, skillsets and toolsets for building a winning culture in government' live webinar, which was hosted by renowned leader and businesswoman Marlinie Ramsamy, CEO of FranklinCovey South Africa. The two-hour virtual session was one of many proactive interventions by Enterprises UP in creating future-fit organisations rooted in empowered leaders. Over 40 attendees from various management levels within government attended this motivational session with the common objective of tackling the mandated priorities of the South African government in 2021.

Potato Pathology Course Gains Traction from International Delegates

This unique course in southern Africa has proved to be a popular training offering among prospective delegates. The course attracted interest from around the world from professionals in the potato industry working as seed certification officials, growers, farm managers, and technical advisers. Pamila Hacker, one of the 12 registered Australian delegates, shared her experience during her journey: 'The course was fantastic. The information I retained and the information that I can pass on to the Kangaroo Island growers is just outstanding. We are dealing with powdery scabs this growing season, and the data acquired I can pass on to them gives an alternative option and a reason why they have had a bad outbreak this year'.

Continuation of a Fruitful Partnership with Toyota SA

The South African taxi industry is one of the largest and most viable industries and continues to grow exponentially. It has supported thousands of people and contributed to the employment of many as drivers and marshals, who have also, in the process, accumulated experience in the business and operations of managing the industry. In 2016, UP and Toyota SA identified a gap in the skills of the various role-players and the constantly evolving sphere in which the industry operates. This prompted a long-term partnership and investment in the development of the industry through skills interventions that will benefit the competency of various role-players. The evident success of the training programme between 2016 and 2018 led to the recommencement of the programme for 2019–2021, with registrations in Gauteng, Western Cape, Free State, KwaZulu-Natal, and Mpumalanga.

Taking Flight with Innovative Drone Courses

In collaboration with Drone Safety and Legal (PTY) Ltd, three courses were designed: Introduction to Drones in Sustainable Mining, Introduction to Drones in Precision Agriculture, and Introduction to Drones in Inspection of Civil Engineering. The curriculum covers the following:

- Understanding the basics of land survey and photogrammetry accuracy principles (ground control)
- Identifying and selecting the most appropriate drone and sensor for aerial surveying
- Planning nadir and oblique flights
- Understanding basic image processing software to generate and visualise aerial survey outputs (orthomosiacs, DSM, 3D models and contours)
- Basic hardware maintenance and care procedures
- Basic industry terminology and understanding

Drone Safety and Legal is responsible for the Remote Pilot License (RPL) training, and the South African Civil Aviation Authority is responsible for issuing RPL licences to successful candidates.

Using a drone in the working environment

International Best Practices

All eight South African metros, represented by 24 officials, participated in the Public Finance Management for Development: Challenges to New Agenda under COVID-19 programme. This partnership between the Japan International Cooperation Agency (JICA) and the National Treasury's Intergovernmental Relations aims to maximise available financial resources for improving basic service delivery in South Africa.

Programme topics included 'Public administration', 'Public finance', 'Urban development', 'Public–private partnership', 'Disaster management and resilient infrastructure', and 'Local economy and recovery'.

Subject matter experts from Japanese government entities, municipalities, and academic institutions shared best practices with the South African delegates through videos, online live discussions, and workshops. During the live session conducted in Japanese, a translator was available to interpret. An observational tour to Japan is planned for 2022.

Training Technical and Vocational Education and Training (TVET) College Graduates in Hydrogen Fuel Cell Systems

'We need to save this planet, especially in terms of climate change and clean energy for sustainable living'.—Professor Sunil Maharaj, Dean: Faculty of Engineering, Built Environment and Information Technology

The Short Introductory Course on Hydrogen Fuel Cell Systems aims to develop hydrogen and fuel cell technologies, with a focus on beneficiating the platinum group metals resource base that South Africa possesses. The training is funded by the EWSeta and DSI and facilitated by Bambili Energy as part of implementing the Cabinet-approved Hydrogen South Africa Strategy through a 15-year research, development, and innovation programme.

Work-ready Graduates

Collaboration between Enterprises UP and the CSO in the Department of Enrolment and Student Administration continues in an effort to optimise the Ready-for-Work (R4W) programme for UP students.

Approximately 44 PODs structured into six packages are currently available. (A POD is a professional online development module/tutorial offered through Enterprises UP.) Four packages deal with general skills, one focuses on faculty-specific skills, and one introduces students to AI as a field and then offers some trends, debates and insights into the use of AI in each faculty or profession covered by the faculty. UP students are eligible to enrol for the PODs free of charge for the duration of their studies and for two years following their exit from the University. During 2021, the R4W programme recorded 2 863 student enrolments.

The CSO requires students for whom they find temporary work at the University to complete some of the modules. They also refer graduates not in employment within six months of graduating to the R4W programme. In addition, they offer face-to-face group and individual training, opportunities for employment and internships, career fairs, and links to employers.

The R4W programme was among the reasons the CSO was awarded for the Best Work Readiness Initiative at the 2021 SAGEA Awards.

Enterprises UP also presented the programme commercially to Mintek, Growthpoint Properties, and First National Battery.

In addition to readiness for formal employment, entrepreneurship and the concept of self-employment are promoted by providing students with free access to the online module in entrepreneurship. During 2021, 946 students actively participated in this programme.

A goal for 2022 is to market both the R4W and entrepreneurship modules aggressively. Consideration will also be given to collaborating with regional universities to grow the number of PODs available and for their use as an open educational resource for university and even TVET college students.

Entrepreneurship Development in Higher Education conference registration

Conclusion: Reimagining UP

In 2020 and 2021, the University was engaged in reimagining teaching, learning, assessment, student support, and research in the digital space. With the relaunch of the Curriculum Transformation Framework in 2021, there was a renewed focus on reimagining the curriculum, a concept that includes how the University delivers its products using technology to enhance student success. People also started to consider reimagining the structures of the University, such as faculties, in the light of transdisciplinary trends and emerging changes in the world of work.

In August 2021, the Vice-Principal: Academic, Professor Norman Duncan, presented ways of reimagining the University and the rationale for doing so. He started by citing Stephen Parker (2020),[15] who argues that:

> Universities have reached a crossroads. They have to decide whether they want to transform or reinvent themselves to better meet the needs of those that they seek to serve or continue aspiring to function as they had in the past—as though the world had not changed.

Professor Duncan then summed up the University's current modes of instruction and discussed one future option:

Table 8: University of Pretoria's current modes of instruction

Teaching models	Scope
Model 1: Hybrid (ie, a combination of complementary face-to-face and online activities)	All undergraduate and honours programmes and coursework master's
Model 2: Emergency bichronous online teaching (ie, a mix of synchronous and asynchronous)	All undergraduate and honours programmes and coursework master's, in emergency situations when access to campuses is restricted
Model 3: Fully online model (with block scheduling)	Programmes with huge demand nationally or internationally: o Short courses by Enterprises UP o PGDips offered by COES
Model 4: Distance education model	Programmes aimed at employed teachers studying part-time

The models could evolve in future to become a HyFlex[16] model that combines elements of Models 1 and 2 in the table (ie, elements of the hybrid and bichronous online models). Students would have the choice to attend lectures in person or online (synchronously or asynchronously) or a combination of both, as it suits them. The University has the technological infrastructure for online delivery; it has ensured that students have access to technology and data, and it has trained its staff to work on the learning management system. However, for the HyFlex model to operate effectively, classroom technology will have to be upgraded significantly to give students choosing to study online an equivalent experience to students in the classroom.

In reimagining teaching and learning, Professor Duncan stated that the goal would be 'Re-thinking, revising and re-calibrating our modalities of instruction'. That strategy would allow the University to:

- improve student success rates—at and beyond the University—through a digitally-enhanced teaching and learning strategy;
- enhance elements of global connectivity and engagement in all degree programmes where this does not exist;
- improve cost efficiencies through an intensification of UP's student success (FLY@UP) drive; and
- enhance students' preparedness for postgraduate studies and their readiness for the future of work.

The Department for Education Innovation prepared a document on digitally-enhanced teaching and learning towards the end of 2021 that will guide the University's strategy: 'UP Teaching and Learning Resourcing Plan: 2022–2026: A REIMAGINED teaching and learning strategy'.

Professor Duncan cited Professor John Dewar, Vice-Chancellor of La Trobe University (Dewar nd):[17] :

> Universities of the future will offer you access to learning in real time, from anywhere. Your flexible learning experience will be available on-demand, 24/7 and will be tailored to what you want to achieve. And you'll be able to study in multiple modes, switching seamlessly between on-campus, blended, or wholly online, to suit your lifestyle and fit study with your work and other activities.

A digitally enhanced strategy will require skilled staff and students, enhanced data literacy and management, increased output subsidy from DHET through improved student success, use of all the digital competence in the University in EI (instructional designers, clickUP and QuestUP 2.0) and COES (UP Online), a student-for-life strategy, ways to eke out the UCDG, and external funding.

When it comes to reimagining faculties, Professor Duncan suggested that the University might need to consider:

- the composition of faculties;
- the reintroduction of schools in large faculties, where these do not exist; and
- the centralisation of certain faculty services that will facilitate transdisciplinary endeavours.

These measures would potentially also have operational and cost efficiency advantages.

Transformation of the curriculum and institutional culture will continue in an effort to give each student and member of staff a sense of belonging. They will feel they are respected, accepted, and valued, including in the curriculum, and that their diverse backgrounds, needs, and voices are included.

15 Parker, S. (2020). The future of higher education in a disruptive world. https://home.kpmg/xx/en/home/industries/government-public-sector/education/the-future-of-higher-education-in-a-disruptive-world.html).

16 HyFlex was first used by Dr Brian Beatty at San Francisco State University in 2010 in response to student needs. See Educause. (2020). 7 things you should know about the HyFlex course model. https://library.educause.edu/resources/2020/7/7-things-you-should-know-about-the-hyflex-course-model.

17 Dewar, J. (nd). What will universities of the future look like? https://www.latrobe.edu.au/nest/will-universities-future-look-like/.

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