



TEACHING AND LEARNING REVIEW 2019

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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 the University'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

Prof Tawana Kupe

As Vice-Chancellor and Principal, I am frequently scheduled to address important gatherings across the campuses, from welcoming day for first years to #ChooseUP day; from the launch of new cohorts for the Michael and Susan Dell Foundation or the MasterCard Foundation Scholars programmes to graduation ceremonies; from the opening of the University Social Responsibility exhibition that showcases our community engagement partnerships to the opening of the Flexible Futures conference or the launch of our first cyber staff member, Libby, in the library; from meeting new staff at the academic orientation to presiding over the prestigious Academic Achievers' Awards event that showcases the research and teaching achievements of academics. The golden threads through this rich tapestry are teaching, learning and student success initiatives, on the one hand, and the academic successes of lecturers on the other.

If one asks people about their experiences of good teaching, they will almost invariably make the claim that good teachers (or lecturers, in the case of universities) care about their students and about their disciplines. This is true of THE UP WAY.

Lecturers reveal their passion for their disciplines in the way that they:

- teach, which involves:
 - communicating with students to interest them,
 - engaging them in activities that will imbue them with the same love of the discipline,
 - exposing them to resources that will enhance their comprehension of the discipline,
 - inducting them into the science of the discipline and its research methodology,
 - using the most appropriate technology, and

- assisting students to understand how they can use what they are learning as they progress to postgraduate studies or the workplace; and
- contribute to the advancement of their disciplines through research.

Lecturers show that they care for students and their success through their teaching and research. They are also supported by a range of robust student support and development initiatives: from tutors, who make the discipline more accessible, to advisors, who encourage a growth mindset and share study, examination-preparation, time-management and stress-management skills. Students are continually encouraged and supported to perform at their best and graduate in minimum time. Students are urged to take responsibility for their own success and make optimum use of all the facilities available on the different campuses to assist them.

The University has, over the past five years, encouraged a more evidence-based approach to teaching and student success. Part of the initiative involves the scholarship of teaching and learning. Lecturers receive grants to investigate aspects of their teaching or assessment to understand better what leads to success and implement plans to change outcomes for students in particular modules. Data-based institutional research has been promoted by the provision of dashboards derived from institutional success data as well as analytics dashboards embedded in the use of the learning management system, clickUP, based on Blackboard Learn. In 2019, a very successful team- and data-based module review process was launched for at-risk modules in all faculties, including the use of data from analytics resources for decision-making.



Prof Kupe, Vice-Chancellor and Principal, and the President of the SRC, Mr David Kabwa, at Welcoming Day

At the University of Pretoria (UP), student success is seen as much more than marks. To support successful transition to the University, mentoring is offered to students in their first semester as well as in the residences. During the course of their studies, various cultural, sporting and leadership opportunities are offered that contribute to the enjoyment of being a student – what is known as ‘student life’. Residences also pride themselves on being places of both living and learning. The University constantly monitors the uptake of its graduates into the workplace as well and has, since 2017, provided additional, free Ready for Work (R4W) tutorials online to help students transition successfully to the world of work. During 2019 all modules were reviewed and updated and new modules developed to address emerging issues in the world of work, including artificial intelligence and the gig economy.

Success of academic staff is promoted through an induction programme for new lecturers, online teaching resources prepared by the Department for Education Innovation as well as their faculty-specific and priority courses on teaching and the use of technology, faculty-based peer enhancement of teaching,

and opportunities to attend teaching-oriented conferences. We start by appointing the most highly qualified staff in their fields and then build from there. The promotion system requires and rewards evidence of good teaching. Faculties make teaching awards annually, as does the University.

Our students are taught in the context of a University that valorises research and inquiry-led learning. Each academic embodies dedication to and innovation in teaching and research. We see interesting intersections and connections in these two skills that can strengthen both teaching and research.

We shall continue to do things THE UP WAY through excellent teaching; robust student support and development, research and learning opportunities; innovative problem-solving; and impactful engagement in our communities and with each other. We shall live as kind, respectful, ethical and caring people who understand that what we do today has an impact on our future.

Professor T Kupe
April 2020



Prof Norman Duncan

Foreword by Vice Principal: Academic

Prof Norman Duncan



As the higher education sector in South Africa faces several daunting challenges, including the impact of the COVID-19 pandemic on teaching and learning, particularly for students from under-served and under-resourced contexts, it is useful to reflect on the achievements of the University of Pretoria in respect of teaching and learning during 2019. It is through reflecting on our past achievements and the general resilience of the higher education sector in South Africa that we can draw strength to engage with the challenges of the present and the future.

During 2019, the University of Pretoria recorded several very encouraging achievements in the teaching and learning domain. Chief among these were the contributions of our Department for Education Innovation (EI). Under the leadership of its (then) newly appointed Director, Prof Gerrit Stols, EI introduced an inspiring revised teaching and learning model for the University. Titled *Teaching and learning THE UP WAY*, this model catapulted the University's established teaching and learning approach to a new level. In keeping with the hybrid approach to teaching and learning formally adopted by the University in 2014, this revised model, in essence, provided a more clearly articulated sequence of activities for optimal teaching and learning. Specifically, the model requires students to prepare in a more focused manner for lectures, complete pre-lecture assessments, engage in class and complete various post-lecture activities. It aims not only at enhancing the University's student academic success rates but also at encouraging greater levels of independent learning, self-sufficiency and critical thinking.

Additionally, during 2019, EI started the process of synchronising the University's extant teaching development programme with the *National framework for enhancing academics as university teachers*. Approved in 2019 by the Department of Higher Education and Training, the framework aims at synergising academic staff development endeavours nationally. The value of EI's initiative to synchronise the University's teaching development programme with the national framework is, of course, that it strengthened and foregrounded the University's focus on teaching as a critical element not only in student success but also in the make-up of research-intensive universities.

Within the ambit of the University's flagship Tshebi Teaching and Learning Data Analytics initiative, EI also initiated the manifestly innovative Tshebi high impact modules (HIMs) project in 2019. Following a holistic evaluation of a number of HIMs, the project provided targeted interventions in various faculties to increase the success rates for these modules. The project achieved a number of noteworthy successes.

The 2019 academic year saw another significant advance in the teaching and learning field at the University with the establishment of the division, Comprehensive Online Education Services (COES). Launched under the leadership of Prof Linda van Ryneveld, its primary objective is to spearhead the conversion of selected high-demand face-to-face programmes into fully online programmes. These will be offered from mid-2020 under the brand UPOnline.

A project that is of particular interest to me, the Ready for Work (R4W) programme, showed record enrolments during 2019. Consisting of a number of free online learning 'packages' aimed at equipping students with additional work readiness skills that cannot be catered for in their formal degree programmes, R4W is designed to enhance our graduates' employability. It also aims to provide them with the wherewithal to establish themselves and succeed in the world of work or the world beyond University.

Also in 2019, a project initiated in 2014 to convert large under-utilised spaces in buildings into student-friendly social learning spaces received a significant boost with the completion of truly state-of-the-art student social learning spaces in the HW Snyman and the Basic Medical Sciences (BMS) buildings on the Prinshof Campus and the Information Technology (IT) Building on the Hatfield Campus. The refurbishment of the old *Oom Gert se Plek* also reached completion in 2019. Now re-named *Akanyang*, this multi-functional building offers a uniquely flexible social learning space for students from various faculties. Of course, the true value of these spaces goes beyond aesthetics: they offer countless students who do not have access to suitable study environments at home or where they lodge, great spaces in which to work when they are not in class.

Social responsibility is not only a key University value. Through its operationalisation in the University's community engagement programmes, it also constitutes a core element of the aforementioned hybrid approach to teaching and learning. This approach incorporates a methodology that allows for a balanced mix of teaching and learning online, in class and in the community. This is to enhance the quality of teaching and learning and consequently student success. In 2019, the University was a lead partner in a successful international awareness campaign organised under the aegis of the University Social Responsibility Network (USRN). The campaign's primary objective was to highlight the importance of university social responsibility as a means of enhancing university students' education, as well as to improve the quality of life of particularly under-resourced and under-served communities.

The achievements listed above cut across faculties. Individual faculties of course also recorded a range of unique achievements that warrant mention. These include the following:

- The Faculty of Engineering, Built Environment and Information Technology established or further developed various initiatives related to the harnessing of artificial intelligence as a means of improving the quality of teaching and learning. During 2019, it also consolidated its leading role in advancing the University's social responsibility endeavours.
- Similarly, the Faculty of Health Sciences extended the reach of its community interventions in the service of both teaching and learning and the provision of healthcare to under-served communities. The impact of its community engagement initiatives was once again significant.
- The Faculty of Education launched its Coding and Robotics Club and the innovative and impactful Student Engagement and Support Office (SESO) in 2019. Guided by the dictum, 'You cannot always help everyone, but everyone can help someone', SESO established a solid platform for the support of students.
- The Faculty of Economic and Management Sciences continued its leading role in innovation in teaching and learning, particularly at the interface between the University, on the one hand, and the public and private sectors on the other. Unsurprisingly, given its long-standing history of teaching excellence, it once again garnered several awards for teaching, as indicated in this Review.
- Innovative teaching was achieved in the Faculty of Law where lecturers sought to engage students in understanding complex issues through involving them in game-based approaches, among others.
- The Faculty of Humanities significantly bolstered the University's curriculum transformation endeavours through organising and hosting the hugely successful international conference, *Unsettling paradigms: The decolonial turn and the Humanities curriculum: Prospects, practice and interventions* in July 2019. Furthermore, its strong focus on student well-being contributed in no small measure to the University's increasing prioritisation of student wellness as an important determinant and consequence of student success.
- Student wellness also constituted a key focus of the Faculty of Theology and Religion during 2019. As part of its endeavours to professionalise and prioritise academic teaching as a key contributor to student success, it hosted a signally successful Teaching Leggotla as well as two teaching capacitation events in August and October.

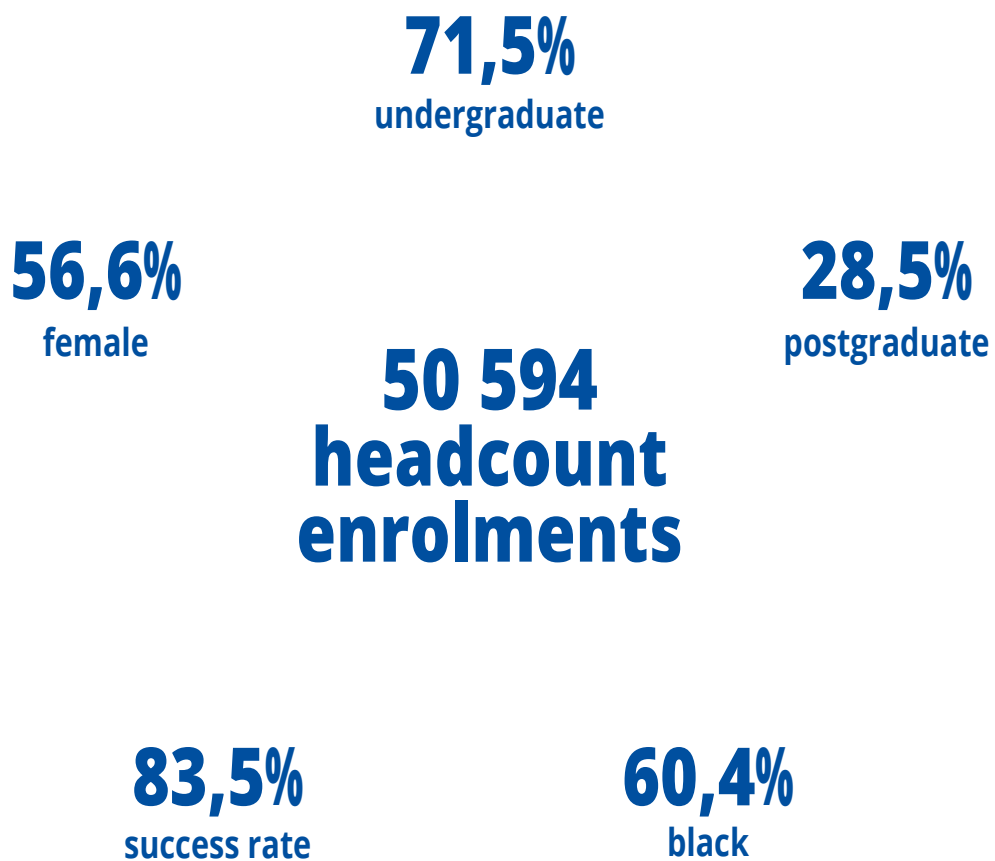
- The Faculty of Natural and Agricultural Sciences also focused on further developing academics as teachers through a series of capacity-building platforms labelled 'Soapbox', 'Toolbox' and 'Chatterbox'. Highly impactful, these forums significantly augmented the Faculty's reputation for innovative approaches to enhancing the quality of teaching.
- The Faculty of Veterinary Science enrolled its 100th cohort of veterinary science students in 2019 and capped the year with high student success rates. A testimony to the exceptional quality of its training is that its graduates remain highly sought after in South Africa and internationally.
- The University's Mamelodi Campus celebrated 10 years of successfully offering a range of extended curriculum programmes.
- In 2019 the University's Gordon Institute of Business Science (GIBS) was once again ranked in the top 100 business schools for its executive MBA by the influential *UK Financial Times*. This was but one of a number of accolades received by the school for its academic programmes and its international standing.

It has to be acknowledged that these achievements would not have been possible without the commitment, expertise and hard work of our Deans, Deputy Deans (Teaching and Learning), directors of professional and support services and academics at the 'chalk face'.

Given that many of the achievements listed above were attained in less than ideal circumstances (including a faltering economy that has had a direct impact on the university sector, high levels of inequality in South African society and increasingly high levels of student poverty), they should inspire us to manage the obstacles to effective teaching and learning that are bound to confront us in future, particularly the obstacles that will result from the COVID-19 crisis currently paralysing the world. However, as Professor Ahmed Bawa, the CEO of Universities South Africa (USAf), recently cautioned, whatever strategies we employ to deal with these impediments, we should endeavour to ensure that none of our students' access to a quality education is impeded in the process. Our achievements will be significantly diminished if we do not offer every student enrolled at the University a fair chance of success. Indeed, it is incumbent on all of us to strive constantly to ensure equality of access and success, in addition to the provision of the sound quality of education that over the years has become one of the hallmarks of the University.

Professor NTF Duncan
April 2020

Student Data 2019 – Institutional



Teaching and Learning Priorities 2019

Academic staff success

Developing, acknowledging and rewarding sustained high performance and innovation in teaching

The Department for Education Innovation and other stakeholders in the University, under the leadership of the Education Innovation Director, Prof Gerrit Stols, mapped the continuing teaching development programme at the University of Pretoria to *A National Framework for Enhancing Academics as University Teachers*, approved in 2019 by the Department of Higher Education and Training, with the aim of aligning academic staff development activities across the country. It has six focus areas:

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

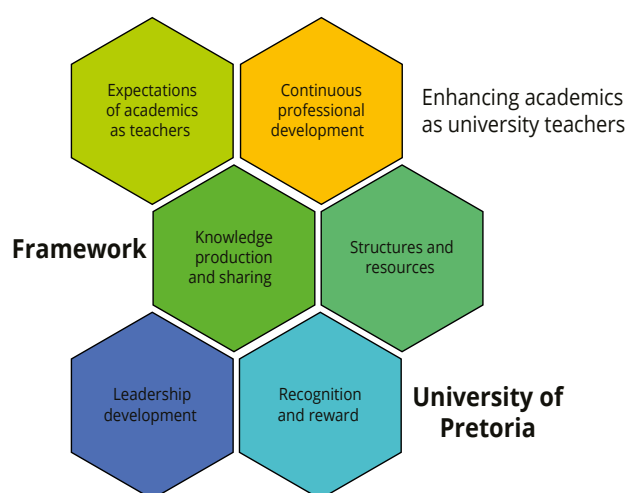


Figure 1: Framework for enhancing academics as university teachers

Some of the University's achievements in relation to each focus area in the framework are discussed below.

Enable continuous professional development for university teachers

Opportunities for academics to access professional development



Staff of Education Innovation: Ms Detken Scheepers, head of E-Education; Prof Gerrit Stols, Director; Mr Dolf Jordaan, Deputy Director E-Learning and Media Development with the Executive Director: Finance, Prof Carolina Koornhof

activities are considered to be a lead indicator for improving the quality of teaching. The Department for Education Innovation's teaching development activities therefore have an impact on the quality of teaching at the University of Pretoria.

The e-education unit in Education Innovation offered priority courses related to the use of the educational technology software used by the University to support the hybrid approach to teaching and learning. Courses focused on the educationally sound use of the learning management system, clickUP; facilitation of online learning; using Turnitin to detect possible plagiarism; using the e-assessment system, QuestUP to conduct accountable assessment; and the potential of new technologies. The 42 sessions scheduled for the priority courses were attended by 566 staff members. The Faculty of Health Sciences had the highest number of attendees for 2019 (137), followed by the Faculty of Humanities (80).

In addition to the priority courses, instructional designers presented 14 departmental training sessions on request to more than 130 staff members. Students who were appointed to support learning also received training in the use of clickUP. In 2019, 40 assistant lecturers in the School of Information Technology were trained to use clickUP and 100 tutors in the Faculties of Economic and Business Sciences, Humanities, and Natural and Agricultural Sciences received training to facilitate online tutorial sessions.

The Education Consultant (EC) Unit in Education Innovation also offers a range of opportunities for academics to improve their teaching and assessment. ECs are each linked to a specific faculty and work closely with the deputy dean/head of teaching and learning in that faculty, devoting some time to community of practice development and some time to faculty-specific activities. Since 2016, the approach has moved from generic, inter-

faculty priority courses to faculty-based training. Two priority training courses continue to be offered to students: Innovil (39 participants, assistant lecturers from the Faculty of Engineering, Built Environment and Information Technology) and tutor training (556 participants). ECs also presented a session during the first-year orientation programme in their allocated faculties on the University's hybrid approach to teaching and learning.

The faculty-based training was implemented by the ECs according to faculty or departmental needs and included the following: assessment, curriculum development and review, teaching methods, student engagement, hybrid teaching and learning, teaching portfolios, marking skills training, use of clickers, etc. The training was mostly funded by faculties or departments, where funding was necessary, but coordinated or facilitated by the EC. ECs also helped out with sessions in faculties other than those to which they were directly linked. A total of 1 582 lecturers benefited from sessions offered to the nine faculties and the Mamelodi Campus. As the unit has only ten staff members, they were very busy indeed.

Faculties sometimes have additional induction programmes for new staff. Health Sciences has run such a programme for many years. Economic and Management Sciences started the Teaching and Assessment Principles (TAP) Empowerment Programme for their newly appointed lecturers in 2018 and have run it successfully since then. For 2020 they will follow a hybrid approach whereby they will have a few in-house, customised sessions for their faculty's staff, while the rest of the training interventions are prescribed to new staff members from the bouquet of available CPD courses for UP as a whole.

Establish and maintain university teacher development structures, organisations and resources

The University has a variety of structures offering development to academics, key among them for teaching being the Department for Education Innovation, which in 2019 provided training and support for face-to-face and online teaching and tutoring as well as teaching with a variety of media. Lecturers and students were also supported in the placement of students in sites of learning other than campus facilities such as the workplace and communities. Members of the department also led the way in the development and implementation of learning and learner analytics to inform decision-making about student success interventions. The department supported learning and student success more directly through the administration of various donor-funded, wrap-around grants; the coordination of the faculty student advisors (FSAs) as a community of practice; organising face-to-face and online orientation for first-year students; and running the Finish Line is Yours (FLY@UP) campaign for minimum time to completion.

Other structures that supported lecturer development were the Department of Information Technology Services, which offered

free IT-related courses; the Department for Human Resources with face-to-face and online interventions, such as providing free access to Lynda.com for just-in-time online learning; and the Department of Library Services that offers programmes and other services to staff and students.

Ensure that academics are recognised and rewarded for the work that they do as university teachers

The following people received institutional Teaching and Community Engagement Awards at the Academic Achievers' Awards event in 2019. In the faculty narratives, winners of teaching awards are also noted. All faculties were encouraged to give awards for excellent teaching to their staff because awards work best when there is a system across the institution to recognise teaching excellence. Lecturers' morale is impacted by the recognition and acknowledgement accorded to winners and runners-up. Fellow lecturers are made aware of good practices. Such awards promote innovative practices and student-focused teaching. Winners of faculty awards can be nominated for the institutional Teaching Laureate awards.

Teaching excellence laureates

Innovations in teaching accounting



A winning team: Elna Verster, Jaco Bezuidenhout and Marchantia Pollock

The FRK 311/321 team (Elna Verster, Marchantia Pollock and Jaco Bezuidenhout), from the Department of Accounting, won the Teaching Excellence Laureate Group Award for their innovations in teaching and learning over the past five years. The team has an interest in accounting education research and a passion for the use of evidence-based approaches in the development of students' technical knowledge, alongside the development of relevant and contemporary skills that are required to thrive in the Fourth Industrial Revolution.

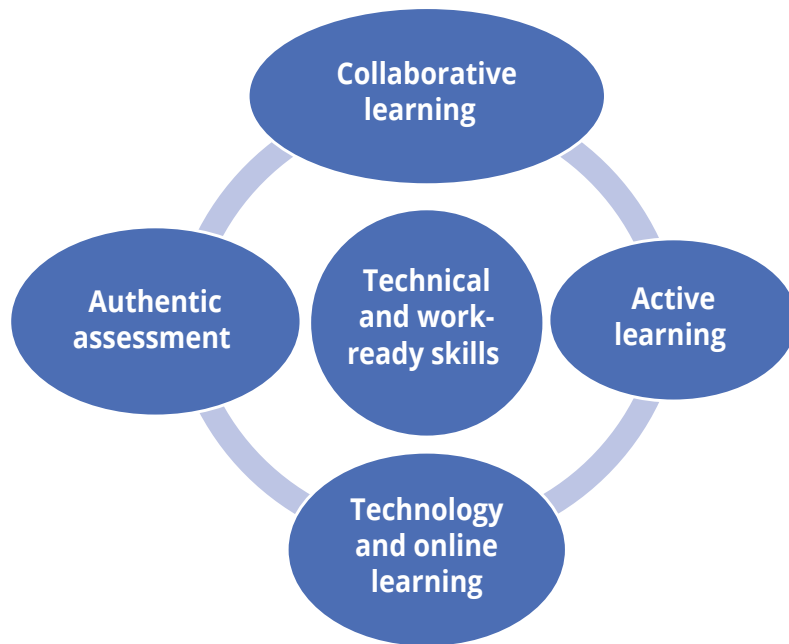


Figure 2: Active and collaborative learning approaches

The teaching philosophy of the team is built on the belief that students' learning is driven by the measure of their active involvement in the learning process. They also believe that assessment drives learning and that collaboration in assessment, authenticity in assessments and feedback in the assessment process are beneficial to student skills development and student learning outcomes.

In order to create a learning environment that embraces a holistic approach to the development of both the technical content knowledge of accounting together with contemporary employability skills, the team combines the use of technology with innovative teaching that embraces a combination of active and collaborative learning approaches. The active and collaborative learning approaches are enhanced with assessment-driven learning and an extension of the classroom into an online learning platform that is built on the premise of a blended-learning environment. Below is a visual representation of their teaching and assessment strategy.

Innovations that have formed part of their teaching and assessment strategy include the production of over 200 videos that allowed a flipped classroom model

to be introduced as from 2015. During 2016, the flipped classroom model was enhanced with online formative CBT tests that improved the viewing statistics of the videos. The active and collaborative elements of the strategy were designed in 2017, at which time the team implemented the 'Learn through Teaching' collaborative project, authentic online learning opportunities that involved real company financials and the virtual attendance of students at an actual CPD seminar hosted by the South African Institute of Chartered Accountants.

The team also introduced the use of an online immediate feedback application in class during 2018, which facilitated whole-class participation. The team further added to their learning environment by creating interactive QR code lecture structure documents, authentic assessments and an online 'tutor in my room' platform. Lastly, the team also introduced the use of IF-AT (immediate feedback assessment tool scratch cards) assessments that not only allow for collaborative learning but also assist in providing formative feedback to students during a summative assessment process.

The team received the Faculty of Economic and Management Sciences' Teaching Excellence Awards in both 2016 and

2019 and also received a commendation from HELTASA at its conference held in Makhanda (Grahamstown) in November 2019 for its contribution to teaching and learning in higher education. The team showcased its innovations at the Flexible Futures conferences hosted by the University of Pretoria in October 2018 and September 2019 as well as the South African Accounting Association's conference held at Nelson Mandela University in December 2018.

Their trajectory towards the pinnacle of teaching excellence is far from over and, in the words of Winston Churchill, 'this is not the end, this is not even the beginning of the end, it might perhaps just be the end of the beginning'.

Innovative teaching strategies for a new generation of learners



Dr Riana Steyn promotes innovation for student learning

As the Fourth Industrial Revolution (4IR) repaints the picture of society in its entirety, South African universities need to adapt their teaching and learning strategies. Dr Riana Steyn, a

senior lecturer in the Department of Informatics, has embraced this challenge by examining innovative ways to approach a new generation of learners, known as Generation Z, in order to promote successful student learning.

This new generation of students, who represent those currently enrolling for study programmes at university, are clip thinkers and process data at an enormous speed. (A clip thinker is used to receiving information in small segments, often from a screen and often in a narrative style, and such a person has a limited attention span.) They regularly face the choice of deciding what information is relevant to their situation, and will Google until they find the information they need. This challenges lecturers to use new technologies to their advantage.

Dr Steyn was recognised for the exceptional contribution of her teaching philosophies to teaching and learning at the University of Pretoria by being awarded the annual Teaching Excellence Laureate Award for 2019. She also received the Award for Innovation in Teaching of the Association for Information Systems (AIS) at the International Conference on Information Systems, held in San Francisco, California, in December 2018. Her expertise in the field of innovative teaching and learning practices has also been acknowledged through her appointment to serve on the international Task Force on Microcredentials on Higher Education of the AIS.

The research that led to her nomination for these awards was focused on adapting her teaching approach by adopting innovative teaching styles, technologies and techniques. This led to the development of an interactive resource using strategies that were focused on research and understanding why it is necessary to approach educational research in a different way to what has been done in the past.

Dr Steyn continues to supervise postgraduate research on a number of related topics that can contribute to

enhanced teaching and learning. Three research studies, in particular, can be highlighted in this regard.

The first involved connecting Generation Z information systems students to technology through what is known as the task-technology fit theory. This study, conducted in collaboration with Prof Carina de Villiers, Joyce Jordaan and Tshegofatso Pitso, investigates how an interactive e-resource can be used to increase students' performance for a specific information systems assignment. The objective of the study was to determine if one could create a resource that really talks to Generation Z students in the way that they prefer to learn and that could increase student performance. This study investigated the usefulness of a self-created e-resource for systems analysis and design through the lens of the task-technology fit theory by means of an interactive resource. This theory states that one of the strongest indicators for individuals to use technology is if there is a system/work fit. In other words, whether students will use a system is determined by the reason they want to use the system. The theory further states that a user should willingly use technology for a specific task before one can say that it is effective. The findings of this study revealed that Generation Z students rely heavily on their peers for assistance. Therefore, as academics, one needs to understand the dynamics of this generation and how they prefer to study. One should then create content and tools that allow them to broaden their knowledge and become lifelong learners. The study concluded that higher education institutions should become more student-centred and less lecturer-centred.

The second study involved enhancing technology transfer through entrepreneurial development, making use of practices from innovation spaces. The aim of this study, conducted in collaboration with Sean Kruger, was to show how mechanisms such as innovation spaces can be used to support entrepreneurs by enhancing their ability

to seize opportunities of high value. This can be attributed to the development of new-generation technologies that stem from the 4IR. The findings of this study revealed that technology transfer continues to play a pivotal role in the emerging technological paradigm, where strategies to address disruptions of 4IR require coordinated activities. This is particularly relevant to academics involved in teaching high-technology subjects, such as those in the Faculty of Engineering, Built Environment and Information Technology.

The third study examined a student-lecturer partnership in design, which entailed evaluating a co-creation practice and sharing the findings within the context of South African higher education. This study was conducted in collaboration with Dr Adriana Botha of the Department for Education Innovation. It took the point of departure that the creation of content in higher education has long been considered a faculty responsibility. However, a drive towards inclusive curriculum transformation has emerged. The study therefore explored the design of a co-created resource by postgraduate students, which relied heavily on effective teamwork skills. This allowed a partnership for quality assurance to develop between the lecturers and the students. Teamwork, as part of the co-creation of educational resources, is considered a critical skill for socioeconomic development. The resources that were developed took account of internationally recognised principles for designing multimedia for e-learning, with the content informed by an internationally recognised project team development process.

The contribution of Dr Steyn's research to the body of knowledge on strategies to enhance access and successful student learning for a new generation of learners is not only of value to the discipline of information systems and the Faculty of Engineering, Built Environment and Information Technology, but to teaching and learning in the higher education sector as a whole.

Community Engagement Award

Supporting civic engagement and participatory development



Dr Carin Combrink: Unit for Urban Citizenship

Dr Carin Combrink is a senior lecturer in the Department of Architecture. Her field of research is rooted in the role of architecture in community development, with an interdisciplinary view towards social innovation and urban citizenship.

Universities, as hubs of influence in particular geographic areas, have become synonymous with the notion of anchor institutions. The role that universities play as anchor institutions contributes significantly to both student success and community upliftment through the establishment of inclusive physical and social environments.

The University of Pretoria has, in recent years, embraced its role as an anchor institution in the areas directly surrounding its campuses. The Mamelodi Campus has embraced this call to action from a strategic perspective through a range of collaborative efforts. One such initiative is the Mamelodi Community of Learning Collaborative (MCLC), which is the result of the long-term collaboration between Mamelodi Campus and Rutgers University–Newark in the USA.

The MCLC focuses on optimising the educational ecosystem of Mamelodi. In accordance with the goals of the MCLC, Dr Carin Combrink has been instrumental in the establishment of the Unit for Urban Citizenship (UUC), a collaborative initiative residing in this department. The UUC aims to support the scholarship of civic engagement and participatory development in the context of a complex, emergent African urbanism. Dr Combrink currently serves as the unit's director.

With this aim in mind, Dr Combrink leads several academic projects that promote social inclusion and expand the footprint

of the educational ecosystem of Mamelodi. For her efforts, she received the University of Pretoria's Community Engagement Award for 2019. The award is bestowed on individuals to recognise community engagement as a long-standing and valued tradition in higher education and an extensive, high-impact practice in teaching at UP.

The UUC has engaged with role-players throughout the educational pipeline. These include early childhood development (ECD) centres, the Mamelodi Campus after-school programme, the Tsako Thabo High School and Mamelodi Campus itself. First-year to master's-level students in architecture, in particular, have undertaken projects in support of the goals of the MCLC.

In 2018, the UUC began to facilitate an interdisciplinary community-based project in which students enrolled for the extended-curriculum programmes on Mamelodi Campus are required to engage with an assigned ECD centre in the Mamelodi community to address a management-related problem for the students' business management module. Through this project, students can see the inter- and transdisciplinary links between their subjects, and can contribute to solving real-world problems in the Mamelodi community.

The broader ECD centres project is ripe with opportunity for collaboration, and has included work with the Faculty of Economic and Management Sciences, the Department of Family Medicine and the Department of Speech-Language Pathology and Audiology.

The UUC focuses on projects with the capacity for horizontal, interdisciplinary integration, in addition to the vertical alignment of curricular engagement. To encourage a culture of participation in its graduates, students in the Department of Architecture are encouraged to engage in meaningful community-focused projects early in their academic careers. In this regard, first-year architecture students are tasked with proposing and designing play equipment that would assist young learners in their development of skills related to science, technology, engineering and mathematics (STEM). The outcomes of these designs are assessed by a panel of examiners, including Dr Martina Jordaan, who directs the community-based project (JCP) module in the Faculty of Engineering, Built Environment and Information Technology. The most successful projects have been shared with JCP groups, who are in the process of constructing the equipment on the Mamelodi Campus.

At school level, a recently completed professional master's thesis under Dr Combrink's supervision investigated a co-design process in the development of architectural design outcomes. As part of an academic module in which students are introduced to the principles of development practice, third-year architecture students participated in co-design workshops with learners in the Mamelodi Campus after-school programme. The assignment required the students to design a pedagogical game that must respond to games with which the learners are already familiar.

As part of the MCLC, postgraduate architecture students are also involved with Tsako Thabo High School, where they engage in mapping and participatory research that is required towards the development of community action planning strategies, urban visions for the area and proposals for architectural interventions to the existing school buildings. Through the interactive processes, significant challenges and opportunities have been identified, ranging from concerns around bullying, social stratification and harassment, to the recognition of dreams, aspirations and artistic talent among the learners.

At present, Dr Combrinck consults with the City of Tshwane Metropolitan Municipality's Department of Safety Promotion through the Urban Upgrading Programme, and serves on the Hatfield Precinct Plan Advisory Committee, the MCLC, the Department of Higher Education and Training's University Staff Doctoral Programme in Community Development, as well as the Moreleta Development Forum.

Advance university teaching through leadership development

The role of the deputy deans/heads of teaching and learning

The continuity, development, integration and success of the teaching and student success initiatives at the University rely to a significant extent on the community of practice (CoP) constituted by the deputy deans/heads of teaching and learning. The CoP met five times in 2019 with the Vice-Principal: Academic to explore current practices and strategic directions for teaching. Artificial intelligence and the future of work were two of the trends explored. Ideas on the support and development of high flyers, or high achievers, were also incubated. Sharing of practices enhances the ability of these heads of Teaching and Learning to solve issues that might be impinging on teaching and student success in their faculties as well.

Other issues discussed were the new teaching model; the hybrid model, particularly the integration of the clickUP and PeopleSoft grade centres; the development and use of open educational resources; lecturer attributes and lecturer success; graduate attributes; awards; the appointment of external examiners, and the R4W programme.

The CoP also reflected on the demands of the role of deputy deans and the formalising of their portfolios. On the one hand, they teach, supervise and do research, and on the other, they serve on numerous University and faculty committees relating to teaching, assessment, student success, use of data for decision-making, and so on. They also use and monitor the use of the University Capacity Development Programme funds that support both student and staff development, among other things. One intervention that needs to be mentioned is that deputy deans were also directly involved in the offering of ECPs at Mamelodi Campus, namely Prof Johan Oberholster of Economic and

Management Sciences and Prof Marietjie Potgieter of Natural and Agricultural Sciences. Their attention to extended programme students is a substantial and important additional factor affecting their available capacity.



From left to right: Prof Sandy Africa, Humanities; Prof Dietmar Holm, Veterinary Science; Prof Johan Oberholster, Economic and Management Sciences; Prof Alta van der Merwe, Engineering, Built Environment and Information Technology; Prof Norman Duncan, Vice-Principal: Academic; Prof Vanessa Steenkamp, Health Sciences; Prof Monray Botha, Law (Acting); Prof Jaco Beyers, Theology and Religion; Prof Paulette Bloomer, Natural and Agricultural Sciences; Prof Salome Human-Vogel, Education

In 2019/2020 some of the deputy deans/heads ended their terms. Prof Dianne Manning of Health Sciences retired and was succeeded by Prof Steenkamp. Prof Hennie Stander retired and was succeeded by Prof Africa. Prof Marietjie Potgieter of Natural and Agricultural Sciences was succeeded by Prof Bloomer. Prof Ernest van Eck of Theology and Religion was succeeded by Prof Beyers. Those whose terms ended performed sterling work to promote teaching and student success in their respective faculties over a number of years, each serving two terms.

UP Management Induction Programme

The Department of Human Resources under Dr Louw Botha has run a UP Management Induction Programme (UPMIP) annually for some years, usually twice a year. It is partly online and partly face-to-face, a hybrid programme presented in collaboration with Enterprises UP. Learning material is available on clickUP (HOD

101). Newly appointed or promoted deans, deputy deans, school chairs and heads of academic departments, as well as directors, deputy directors and heads of units of support departments, at Level 5 and above, are the target. In 2019, 21 academic members of staff and 26 professional services staff participated.



The aim of the UPMIP is to enhance UP-specific management, competencies and institutional knowledge. The programme topics in 2019 were: higher education legislative framework and governance structure; identification and management of risks; teaching and learning excellence; continuing education at UP; managing to achieve research excellence; managing intellectual property and fund raising; information management; managing towards service learning; financial management and principles; performance evaluation; development management; operationalising UP's strategic intent; transformation and change management; diversity management principles and practice; labour legislation framework; HR policy and processes; and conditions of service.

For teaching it is important to convey the message that, as heads of departments, academics have to move from teaching to managing teaching through performance management as well as opportunities for development as teachers – through the Department for Education Innovation, peer learning at meetings and teaching events and conference attendance. Mr Dolf Jordaan, Deputy Director: Education Innovation, presented 'Management towards teaching excellence'. He addressed the following

questions:

- How do you manage towards achieving excellence in teaching?
- How do you motivate lecturers who have been in the classroom for many years?
- How do you provide mentorship and support to new lecturers?
- What resources are available within the University to support you to improve the teaching in your department and the linked institutional key performance area of student success?

The presentation covered the services of Education Innovation and major UP teaching and learning initiatives such as FLY@UP, the hybrid approach, the data-based decision-making approach and the new teaching model.

UP Leadership Programme

The UP Leadership Programme (UPLP) is presented by UP's Gordon Institute of Business Science (GIBS). It is a hybrid programme with three days of contact at GIBS. All deans, deputy deans and school chairs (HoDs), as well as directors and deputy directors of support departments are eligible. In 2019, 16 leaders participated.

The aim of the UPLP is to enhance generic leadership skills, competencies and institutional knowledge within the context of the University's Management Model. The programme topics deal with transformational leadership to gain insights into effective leadership (as required in the University's management model), to enhance personal leadership competencies through profiling and shared experiences, and lastly, to initiate an ongoing leadership plan for further development. A tailored 360-degree assessment process, designed specifically for the programme, forms a core part of the experiential learning process.

Programme for Academic Leadership

The Programme for Academic Leadership is offered by GIBS but also includes some services from Common Purpose and the business school of the University of the Witwatersrand. Deans, deputy deans, school chairs and heads of academic departments are all eligible but it is a selection programme with limited spaces, so nominees are expected to submit their CVs. Only 16 were selected the last time it ran. It involves ten contact days.

The aim of the programme is to equip senior academics with academic leadership knowledge and skills, in order to assist them to be effective in their career progression and to provide a foundation for developing a strong academic leadership career. The programme focuses on exploring the impact of global change, the role of universities in emerging markets and the implications thereof for tertiary educational institutions, in order to broaden perspectives and the development of strategies for future roles in educational leadership through the following themes:

- Understanding one’s personal leadership role in the context of globalisation and South African realities
- Defining a career development strategy that balances managerial requirements while maintaining a research programme
- Crafting a strategy for personal leadership and team development, inter alia through the use of 360-degree leadership feedback reports and coaching
- Understanding and developing skills in leading transformation and valuing diversity
- Understanding the role and methods of performance and talent management in the knowledge economy (with an emphasis on mentorship)

- Developing skills in leadership and leadership communication through media training
- Understanding how to establish or use collaborative mechanisms in research and research communities

In addition to the contact sessions, there is a team-based assignment on problems identified within the University.

Promote knowledge production and knowledge sharing about university teaching and learning

Scholarship of teaching and learning

Research into teaching, known as the scholarship of teaching and learning (SoTL), strives to improve teaching, student engagement and assessment. The evaluation of applications required a large number of staff to be involved, but it did ensure that feasible, quality proposals were supported. More proposals were received than the pool of funding available could provide for, but the Vice-Principal stepped in to fund nine of the 31 approved. The rest were funded from the University Capacity Development Grant. As a result, lecturers improved their understanding of SoTL research goals and methods and used SoTL research data to effect change. In summary, lecturers reported 41 changes in classroom practice in their annual reports on the grants. Lecturers also used their

research results to make presentations at UP (13) and at national (27) and international (6) conferences. In addition, they wrote 17 articles (already in print, submitted, or in preparation).



Exhibitors and sponsors at Flexible Futures V



Prof Duncan welcomes participants to Flexible Futures V

Flexible Futures V conference

The fifth annual Flexible Futures conference was held at the Future Africa Campus on 9 and 10 September. The theme was 'Impactful teaching between bricks and clicks'. The conference provided a forum to address critical issues and challenges confronting the education sector today, particularly in relation to the effective use of educational technology in higher education. It was an opportunity for UP staff to showcase and share their teaching and learning innovations. A total of 275 people attended the conference over the two days. Of the 62 non-keynote presentations, about 90% were UP presenters and approximately the same percentage of registrations was from UP staff. The library exhibited its robot colleague, Libby. Many of the companies

that help the University to sustain its hybrid approach sponsored and exhibited at the conference.

The champion for the conference for the past five years has been Prof Norman Duncan, Vice Principal: Academic. He originally launched the conference to support his hybrid teaching and learning strategy.

The topic of Prof Duncan's welcoming address was 'Preparing our graduates for the era of the Fourth Industrial Revolution'. He stated that the purpose of the conference was to build on previous conferences but also to highlight 'teaching innovation, with a particular focus on current innovations in the use of technology in teaching and learning', in order to address intractable problems

in higher education. He cited Alvin Toffler (1970), futurist and author of *Future shock*, saying that we need to teach our students 'how to learn, unlearn and relearn. Tomorrow's illiterate will not be [those] who can't read; [it] will be [those who have] not learned how to learn'. He emphasised the need for lifelong learning throughout his presentation. He mentioned a number of other UP graduate attributes relevant to 4IR such as adaptability and resilience; independence; mental flexibility; critical thinking; creativity; collaboration skills; intercultural literacy; digital literacy; environmental awareness and ethical orientation. University teachers and systems need to foreground the new competencies and not rely on old paradigms when they need to effect quite radical change.

In opening the conference, Vice-Chancellor and Principal Prof Tawana Kupe called for 'emancipatory education that transforms society'.



Prof Kupe opens Flexible Futures V

He addressed the issue of conferences as critical moments of reflection. In this case, he pointed to the need for critical reflection on technology so that universities do not fall into the trap of technological determinism. While they need to prepare their students for the 4IR, they need to focus on the fact that technology adoption is not self-realising. It is subject to human creativity, innovation and shaping. Artificial intelligence (AI) and machine learning are rapid and disruptive, so universities have to prepare students differently to cope with the emerging world of work and the complementarity in the workplace of human and machine. The University of Pretoria wants to provide leadership in digital teaching and learning through critical reflection, not become victim to the rapid and inevitable changes.

The keynotes of this Flexible Futures conference challenged us to think beyond the 'clicks' and 'bricks' in which we operate daily and to redefine how we prepare the future generation for the 4IR. The two keynote speakers were Heather McGowan (USA) and Barry Vorster (PWC), McGowan presenting online.

Heather McGowan of Work to Learn (www.work-to-learn.com) was the keynote speaker on Day 1, using videoconferencing to present. She was ranked by LinkedIn as its number-one global voice for education in 2017. The title of her paper was 'The future of work is learning'. Her basic message was that in the past we learnt to gain employment; in future, we shall learn at work and keep unlearning and relearning. McGowan believes that in the Third Industrial Revolution we learned (once-off) in order to work,

and now, in the Fourth Industrial Revolution, we shall work in order to learn (continuously). She pointed out that technology is changing exponentially but humans change slowly. We shall have to learn and adapt to create new value. There will be continuous change in occupational identity and multiple careers. A student cannot learn what he or she will need to know in the course of such a trajectory from a short period at university. Students need the skill to learn and become lifelong learners. She mentioned how the fastest growing skills needed in the workplace were changing regularly. She noted three trends: atomisation (of work), automation and augmentation. However the future of work is not only about technology, but about leveraging the uniquely human skills that we have, such as high social skills. So her advice was to develop a resilient and adaptive personality; an agile mindset to learn and adapt; and uniquely human soft skills (<https://www.forbes.com/sites/heathermcgowan/2019/09/10/the-workforce-is-calling-higher-education-will-you-answer/#13fcd30b6f6f>). She recommended that students determine what interests them, what drives them, what gets them excited and what their unique abilities are, and then apply their gifts to their purpose. She cited the World Economic Forum's 2016 research captured in *The Future of Work*.



Barry Vorster, a well-known strategist from PricewaterhouseCoopers, delivered the keynote address on day 2, speaking on 'Brains and bots and us' – basically on the future worlds of work. He took into consideration how automation and 'thinking machines' are replacing human tasks and jobs, and discussed redefining the skills organisations are looking for in their workers. Technology is changing business models and is set to re-make the fundamental relationships in a high-stakes game of digital disruption. He reviewed the digital decade from 2006 to 2017, which saw the launch of Twitter and Google becoming a verb, to emphasise that change is not coming – it has been here for some time. He went through the physical businesses that had closed to be replaced by digital businesses (eg Blockbuster closing and the rise of Netflix) and some amazing advances in technology and robotics. He mentioned eight key technologies that were having an impact in 2019: drones, AI, augmented reality, blockchain (for qualification certificates), Internet of Things, robotics, virtual reality and 3D printing. He projected AI development moving from assisted intelligence, to augmented intelligence to autonomous intelligence through machine learning, the latter enabling decision-making by machines.

Four universities – Pretoria, Johannesburg, the Free State and Cape Town – were beneficiaries of a grant from the Carnegie

Corporation of New York to conduct research into the uptake of blended learning during #FeesMustFall. Subsequently, a number of open resources were developed to take the lessons learnt during this period forward. At the Flexible Futures conference, Anneri Meintjies of the University of the Free State launched the open platform for the accessing of resources (www.blendedlearningresources.co.za) and Detken Scheepers highlighted the self-evaluation app developed at the University of Pretoria for lecturers to assess their own maturity in the use of blended learning.

Develop expectations of academics in their role as university teachers

Academic Induction

The Academic Induction is a two-day flagship programme for newly appointed academic staff with an additional component of CPD opportunities. The adapted structure allows newly appointed personnel to plan attendance of CPD courses during their probation period.

The programme is run twice a year; in 2019 it was run in January (64 participants) and June (38 participants). Day 1 has an institutional strategic focus on teaching and research at UP. Day 2 focuses on the individual lecturer and his/her practice as well as how to plan a learning opportunity.

The aims of the Academic Induction programme are to:

- introduce participants to the regulatory environment around research and teaching and the University's strategic research priorities;
- offer participants an introductory and broad overview of the various professional development opportunities available at UP; and
- discuss the teaching and research infrastructures and support mechanisms available to UP employees to enhance their academic career and the University's research productivity and teaching excellence.

Suggested CPD courses are: Learning Theories; Developing Study Guides; Accountable Assessment; Design Rubrics; Design Objective Assessments; and Student Engagement, as well as relevant clickUP courses.

The ECs also conducted eight 'Induction Lite' sessions with individuals who joined UP but had to wait to attend an official induction session. The purpose was to empower the lecturer to be effective from day one.

Feedback is collected on all training to improve the quality of the programmes, including the Academic Induction as the flagship programme. Responses for both sessions were overwhelmingly positive, with more than 97% of attendees indicating that the objectives had been fully or partially achieved, among other items.



Faculty-based peer-enhanced improvement of teaching

Peer review or enhancement of teaching is a trend internationally. Who better to create expectations of quality teaching than fellow academics? Faculties all received funding from the University Capacity Development Grant to fund faculty teaching events and sponsor academics to attend conferences focusing on teaching in particular disciplines or generally. The desired outcome is that lecturers and academic managers in faculties are aware of innovations in teaching and assessment and more widely.

The following examples give an idea of how each faculty used its allocation for teaching events.

Economic and Management Sciences

The focus of a number of brownbag events was mainly on hybrid teaching and learning. The TAP Empowerment Programme, providing focused professional development for newly appointed staff members, started in 2018 and was further refined in 2019. In addition, a number of staff members responsible for the assurance of learning for the pending Economic and Management Sciences accreditation with the Association to Advance Collegiate Schools of Business, attended an Assurance of Learning Conference in Dubai.

Education

The Faculty of Education presented its third Annual Teaching and Learning Day on 14 May 2019. It was hosted by the Department of Humanities Education, with the theme 'Theories of teaching and teaching theories'.

Engineering, Built Environment and Information Technology

Engineering, Built Environment and Information Technology staff's capabilities to support students and work towards higher throughput using more effective teaching methods were enhanced

through a number of formal and informal opportunities. Both local and international presenters were part of the programme of activities.

Health Sciences

The Annual Teaching Symposium focused on 'Inter-professional education and collaborative practice', a topic of great importance to improvement in healthcare delivery as it emphasises teamwork among those providing care. Eleven brownbag lunches were held during the year on a range of topics, but with a particular focus on technology-enhanced teaching. Attendees at the symposium and brownbag lunches were exposed to a range of new ideas, which are now being incorporated into renewal of teaching and revised curricula. The HPCSA accreditation panel for the MBChB degree, which visited in September, was very impressed with the dedication to curriculum transformation and reorientation of the teaching model.

Humanities

The Humanities Teaching and Learning Discussion Fora discussed factors that influence student motivation and how these link to their willingness to learn; the hybrid approach, including the use of the app developed at the University for lecturers to assess their own maturity in the approach; and teaching students with disabilities and mental health problems. The interesting and varied opportunities gave Humanities' academics the chance to showcase their achievements.

Law

Workshops were held on the key areas of the new LLB curriculum and curriculum transformation. Lecturers working on the LLB were better informed about the next steps they should take in implementing the programme. The UP LLB was one of the few accredited by the CHE after the national review, but there were still areas that needed improvement.

Natural and Agricultural Sciences

Events included:

- a series of five FLY@NAS brownbag lunch presentations by experts (attendance n=206). Lecturers became more aware of factors that influence learning – two seasoned lecturers shared their craft, and several lecturers presented their experiments with alternative assessment and their use of the tools from Blackboard. The last event of 2019 celebrated teaching excellence. All the prize winners shared the highs and lows of their careers;
- 34 sessions aimed at CPD of lecturers (n=460); and
- five departmental workshops on teaching and student performance, ie in mathematics, statistics, geology and the Department of Geography, Geoinformatics and Meteorology.

Two editions of the *T&L@NAS Bulletin* that was launched in 2018 were published. Faculty of Natural and Agricultural Sciences lecturers and support staff, and staff beyond the faculty, learnt more about best practice.

Theology and Religion

The faculty was able to ensure 100% attendance of their academic staff at two training events on 'Prior knowledge' and 'Decolonised curriculum', as well as the Dean's lekgotla where curriculum transformation was a major focus. This type of attendance develops a common understanding of curriculum and teaching practices within the faculty. All departments in the faculty have been requested to re-assess teaching material from the perspective of being contextual, relevant, Africanised and decolonial.

Veterinary Science

The focus for the 2019 year was communication skills within the veterinary curriculum, and how this impacts on professional wellness. A series of workshops as well as longer sessions were arranged early in the year, followed by certain curriculum implementations during the rest of the year. Two international collaborators were used to facilitate staff training in this regard, attached to two different SoTL projects.

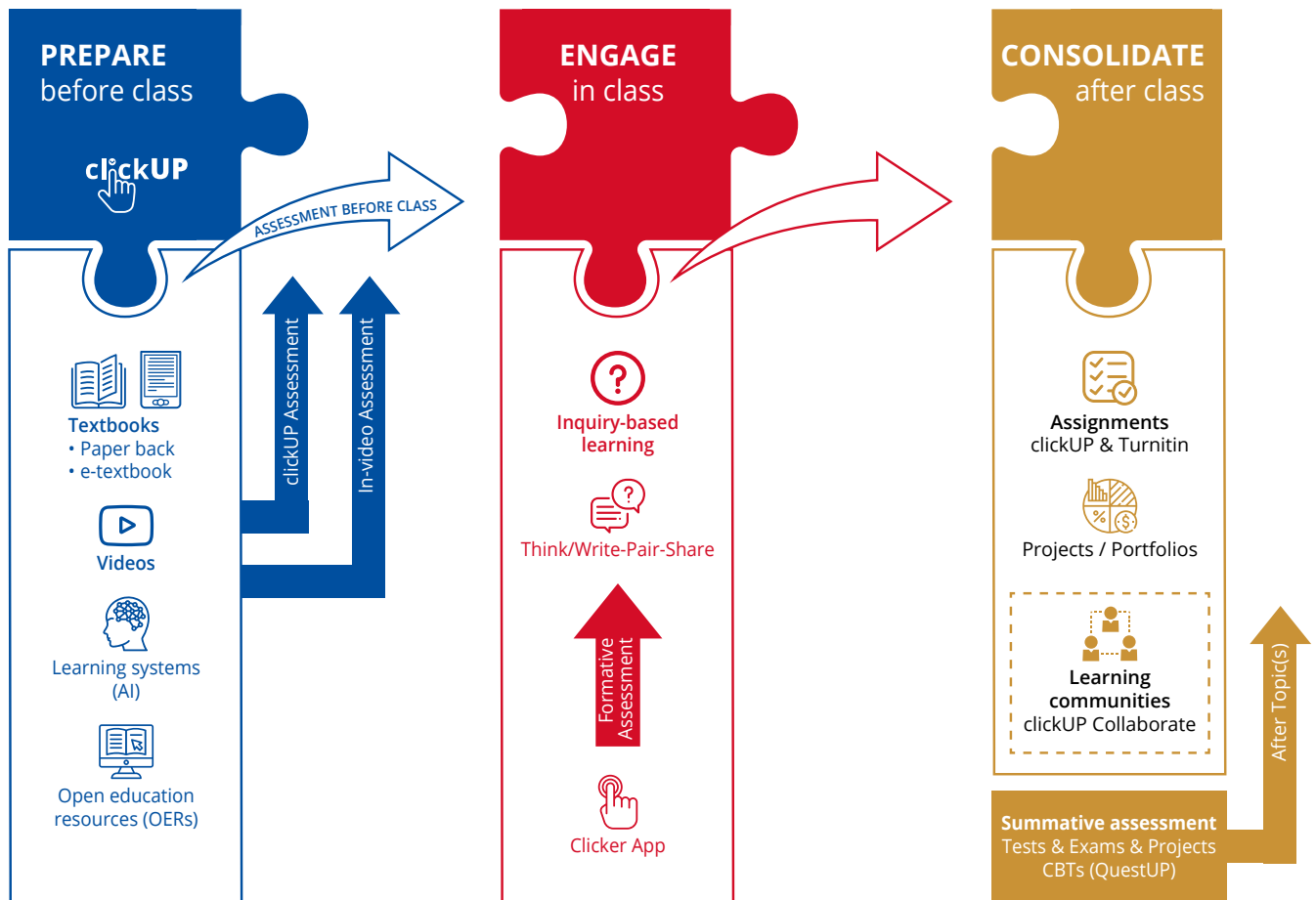


Figure 3 Teaching and Learning THE UP WAY

Innovations in the teaching model

In 2019 the University introduced a new teaching and learning model, namely Teaching and Learning THE UP WAY, to prepare students for their future workplaces. The model requires students to come to class prepared, complete a pre-class assessment, engage in class and complete follow-up tasks.

This model of learning makes teaching and learning more effective by shifting the instructional sequence. This model will prepare the new generation of students to flourish in the world of work. The five main drivers that informed this model are:

1. research into effective teaching and learning;
2. the knowledge and skills our students need for the future workplace;
3. characteristics and learning needs of our current students;
4. the current reality and facilities of the University (eg large class size); and
5. new learning and teaching technologies that are scalable and have a high impact, eg clickUP, in-video assessment before class, and clicker apps to engage all students in the class.

New technologies and AI not only impact on the skills that our students need but create many new opportunities to enhance

and facilitate learning. The University of Pretoria's teaching and learning model gives the students the best of both worlds, online and contact, and will allow the students to succeed both at university and in life beyond university. This model will prepare the new generation of students to flourish in the world of work because it encourages students to take control of their own learning, applying skills, solving complex problems, and in the process developing digital fluency.

The teaching and learning model not only addresses 4IR skills and optimal usage of the latest technology, but it is also suited to a deeper understanding of the characteristics and learning needs of students. This generation is characterised by its ability to assimilate information rapidly and adapt to new technologies. This generation of students works best by being made aware of pre-class resources like videos, reading and research. This allows them to work independently and test themselves with a short online assessment, using clickUP and in-video assessment. By creating an environment for independent preparation for class, we aim to promote and develop self-directed lifelong learners. The assessment before class also provides valuable information for lecturers to build more meaningful lectures, taking into account students' prior knowledge, and address any misunderstandings.

Although the new generation of students seeks information

independently and on-demand, they want human interaction and opportunities to discuss their views and concerns. Inquiry-led teaching and learning models work best for these students. If students come to class prepared, the class time can be used more effectively. During their engagement in class, students will thrive, with more in-depth discussions, detailed explanations and robust debates on topics in the curriculum. Inquiry-led teaching enables students to think, communicate and justify their ideas. It motivates students, stimulates critical thinking and creates opportunities to develop a deeper understanding of concepts.

The University bought institutional licenses for a clicker mobile app and H5P video assessment software. This enables all lecturers and students to use the mobile version of clickers and video assessment software at no additional cost. The use of a clicker app (student response system) makes active student engagement possible even in large classrooms. The feedback from the clickers provides students with instant information about their own understanding of current and prior knowledge. This real-time feedback for students and lecturers can assist lecturers to identify and address any misunderstandings and can help to improve on future class activities to enhance engagement and participation.

Improving the provision and use of e-technology

Hybrid teaching and learning self-evaluation app and field guide

The insights gained through the research into blended learning used during the #FeesMustFall campus closure, supported by a grant from the Carnegie Corporation of New York, led to the development of two resources in 2019, namely the hybrid learning self-evaluation app and the hybrid learning field guide. The research results from the first year of the project revealed that there were varying degrees to which lecturers implement blended/hybrid learning and, where it was not done well, it negatively impacted on students. The data from students highlighted several focus areas that the University must address. The aims of these products are to assist lecturers to reflect upon their existing practices, create a benchmark of their own adoption, and then chart their own hybrid learning development path/process to enhance their students' success.

Four instructional designers developed the content of the hybrid learning self-evaluation app. They used three international quality measurement products (the Blackboard Exemplary Course Rubric, the Quality Matters Higher Education Course Design Rubric and the Blended Learning Calculator of the University of Tasmania) to determine suitable statements for the UP context to guide lecturers through a self-evaluation of their hybrid learning in a specific module. Lecturers from each faculty were invited to test the statements. Their comments informed changes that reflect the contextual differences that are prevalent within the University, and clarification of some of the statements. The final

product uses eight dimensions as a structure for academics to reflect upon their existing hybrid teaching and learning practices, self-identify their own levels within the eight categories, and record these results as a snapshot of a module. The reports generated by the mobile app may also be used during performance appraisals and as part of a teaching portfolio.

The feedback from the lecturers who took part in the testing of the statements also indicated the need for examples of hybrid learning practices for each dimension. This led to the creation of the *Hybrid Learning Field Guide*, which complements the self-evaluation app. Readers of the field guide will find fresh ideas, summaries and descriptions of good practices for each of the eight dimensions commonly found in tertiary hybrid learning environments.

Both products are available under a Creative Commons license and can be accessed via the clickUP help site (<http://eduation.up.ac.za/hybridproject>). Ms Detken Scheepers showcased the self-evaluation app at the 2019 Flexible Futures conference and at meetings held in six of the faculties (Engineering, Built Environment and Information Technology, Education, Economic and Management Sciences, Health Sciences, Humanities and Natural and Agricultural Sciences). It is envisaged that the long-term use of these products will not only create a balanced use of hybrid learning and develop lecturers, but also prepare students better to promote success.

While the focus of the products was on the UP environment, they were also adapted for use by the whole South African higher education sector. Ms Scheepers introduced these South African products, known as the blended learning self-evaluation app and blended learning field guide, to the South African higher education community at the National Convening of Universities, Blended Learning 2019 conference at the Premier Hotel OR Tambo on 30 May 2019. They were announced to all national public and private higher education institutions through various bodies such as SAIDE and the CHE. The link to the resources was also shared with the sponsors, the Carnegie Corporation of New York, for use throughout Africa. The products are available on the Blended Learning Resources website that was created by the University of the Free State (<http://blendedlearningresources.co.za/blended-resources-self-evaluation/>).

Ms Scheepers reported on student perspectives of online/blended learning as an academic continuity solution during #FeesMustFall campus disruptions through a paper presented at the 13th Annual International Technology, Education and Development Conference in Valencia, Spain, on 11 March 2019. An article by Dr Ina Louw and Ms Mpho Thukane detailing the research findings for the Faculty of Natural and Agricultural Sciences is in press for the *Journal for New Generation Sciences*.

E-assessment

The hybrid model at UP includes the use of various electronic

assessment opportunities for students to enable regular assessment of and feedback on formative and summative assessment. The University uses various systems to enable this core function, namely QuestUP, clickUP, Turnitin, assignments tools of e-publishers, and CompAssess.

It is essential to develop students' computer literacy skills to enable them to learn in a hybrid learning environment and ultimately function effectively in their future places of work. The University lays a foundation for all first-year students through the Academic Information Management (AIM) modules. Students' computer skills are evaluated automatically during assessments using the CompAssess system. The 44 assessments created in the system in 2019 made 37 555 assessment submissions possible.

QuestionMark Perception, known as QuestUP at the University, is used for summative objective assessment. This system supports secure objective assessment through the creation of reusable question banks and automated marking. During 2019, the system was used to set up 1 012 assessments that enabled 138 983 individual student assessments to be written across five campuses.

Lecturers also use several tools within clickUP to administer a variety of assessment formats through the grading of various online activities, eg discussions, blogs, wikis and journals, managing submission and marking of assignments, and setting objective assessment items through the tests. Lecturers created 13 255 assessment opportunities in 2019 that resulted in 1 580 099 graded assessment items in clickUP. Using the quiz tools in clickUP in a formative way as preparation for an upcoming class supports UP's teaching model.

Turnitin is used to verify the originality of student work through detection of similarity of assignments with other documents. The resubmission function

in Turnitin allows students to develop their academic writing through the similarity check and report, as they learn how to paraphrase, summarise and cite documents as part of an academic argument. The use of Turnitin has been growing year on year in modules, with 5 639 assignments created during 2019 that resulted in 220 478 assignment submissions.

Publishers of various textbooks, eg Cengage, McGraw Hill and WileyPlus, provide electronic assignments that enable formative assessments that students use during their learning process. These valuable learning tools aided students to submit 701 589 formative assessment assignments during 2019.

Fully online programmes to extend the University's national and international reach

Flexibility matters

The UP Online Project

In 2017, the University of Pretoria Senate approved the inclusion of fully online programmes as a component of the University's programme and qualification mix. The University then entered into an agreement with Higher Education Partners South Africa (HEPSA) to give momentum to this new venture, thus putting the University on a path towards offering fully online programmes to the ever-growing number of students who recognise UP as their preferred choice of higher education institution.


 The logo for UPI Online features the letters 'UPI' in a bold, blue, sans-serif font. To the right of 'UPI' is a red circle containing a white power button symbol (a vertical line with a semi-circle at the top). To the right of this symbol is the word 'Online' in a red, sans-serif font.

A new division, Comprehensive Online Education Services (COES) was established under the leadership of Prof Linda van Ryneveld, to drive and support the process of converting certain high-demand face-to-face programmes into a fully online

modality. Some new programmes and specific gateway modules were also targeted for distance delivery in a fully online mode. In 2019 the unit focused on the programmes that would be launched in late 2019 and early 2020.

The fully online teaching model is vastly different from the University's traditional offering. For a start, there are six intakes per year, instead of the normal single intake in January. Online students complete one module at a time, instead of the normal parallel offering of a cluster of modules. Each module is offered in blocks of eight weeks and is assessed continuously. This means that a student completes the entire module, including its summative assessment, by the end of the eight-week period. It is worth noting that students only pay per module, meaning that working students will be able to afford their studies with greater ease. Despite all these differences, one thing remains the same: students who graduate from these fully online programmes will have a fully-fledged, accredited academic qualification from the University of Pretoria behind their name, similar to any other face-to-face UP graduate.

HEPSA supported the initiative in a variety of ways: for example, with marketing of the fully online programmes and recruitment and retention of students.

Benefits to the University

With universities constantly facing challenges and restrictions on how many students can physically be accommodated on campus, the fully online study option helps to alleviate issues relating to on-campus space. With the fully online programmes, there is no additional strain on UP's current facilities and physical environment while, at the same time, the University is in a position to respond positively to the growing need for access.

In terms of international visibility, this initiative is in line with the University's vision for 2025 as this mode of delivery will open the borders of the country for international students. It is hoped

that fully online programmes will have a positive impact on our international rankings, thus growing the UP footprint and improving the brand beyond the borders of South Africa. The unique teaching model also allows for new opportunities for scholarship of teaching and other research activities.

The UP Executive is excited about the new route, as it is important to open up the scope of UP's reach and access, as well as to provide new opportunities for additional income.

Benefits for lecturers

Given the tension between teaching, research and multiple other responsibilities, many lecturers feel the burden of time constraints on a daily basis. The fully online mode of delivery has the potential to free up time that can be put to good use for academics to either pursue further studies, to do their own research or to supervise postgraduate studies. Once the online teaching materials have been developed in full, the main part of the 'teaching' has been done. The online facilitation is then structured to run for a period of eight weeks and can be supported by teaching assistants who are called online facilitators.

The online teaching model requires rethinking the nature of the face-to-face modules, and an adaptation of the content and teaching strategies to support students in a distance-learning environment. As such, lecturers need time and support to create their fully online modules.

Academics who were interested in this mode of teaching were supported as follows:

- Funding was available for lecturing relief of the subject matter expert in the department. Funding could alternatively be used to outsource the development of the fully online module: for example, to a retired professor, or a peer in the field. No staff members were paid extra for development work in their personal capacity.
- The unit followed a highly structured timeline for the development of the online modules. If followed diligently, a fully-fledged, pedagogically sound online module could be developed systematically over a period of 16 weeks (around one semester).
- A team of expert HEPESA and COES learning designers provided personalised training and support for each academic involved.
- Access to videographers, programmers and multimedia specialists was provided in case a lecturer wanted to develop something more complex or interactive.
- Once the modules are offered, seed funding will be available for the appointment of online facilitators (at a ratio of 50:1). Seed funding is available for the first year, or until such time that the programme is self-sustainable, whichever comes first.

Benefits for students

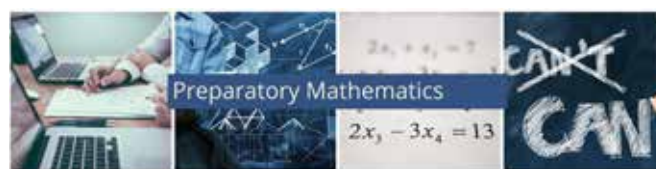
Offering fully online academic programmes opens up the UP brand to students who would otherwise not have been able to study at the University. Students enrolled in fully online programmes select this modality because they seek the flexibility provided by online programmes. For example, students who are working full time or need to stay home to raise children may find the fully online mode of delivery particularly attractive. Also, international students and anyone who would previously have been put off by the geographical distance between themselves and the University are now able to obtain a UP qualification. The obvious benefit with the upcoming fully online study option is that students are not required to attend lectures on campus and are able to conduct their studies online, in a semi-synchronous manner, from anywhere in the world. The quality of, and recognition for, the fully online qualifications is exactly the same as for the programmes that UP is currently offering in the traditional contact mode of delivery.

Programmes developed in 2019

The first programme to be offered fully online will be the Postgraduate Diploma in Public Health from the Faculty of Health Sciences, with registration opening in March 2020.

The second fully online programme to launch will be the Postgraduate Diploma in Public Management from the Faculty of Economic and Management Sciences. Applications for this programme will open in April 2020.

Fully online preparatory mathematics short course



Preparatory mathematics online

Based on their NSC results, prospective students who come to university to study mathematics-intensive degrees usually believe that they are well-prepared for the challenges associated with first-year mathematics. However, the reality is that they are, more often than not, underprepared. Whether this is a result of years of behaviouristic drill and practice-type teaching with limited focus on insight and higher-order learning or not, the reality is stark: students enrolled for mathematics-intensive bachelor programmes (eg all BEng and some BSc, BCom and BEd programmes) struggle to cope with university-level mathematics in their first year of study.

In an attempt to address this issue pro-actively, the Department of Mathematics and Applied Mathematics in the Faculty of Natural and Agricultural Sciences and COES joined forces to develop a fully online, open preparatory mathematics short course for

prospective students in engineering and other mathematics-intensive programmes. The purpose of the joint venture was to address the gap between school-level and university mathematics (eg logarithms), and for prospective students to use their performance in the short course as a benchmark of their own readiness for university mathematics. From the perspective of the University, the results also served as an early record of students' readiness and allowed for pro-active interventions to be put in place wherever there was a need.

In December 2019, more than 2 000 students who had been provisionally accepted into BEng and mathematics-intensive BSc programmes were invited to take the free, fully online short course in the holiday period before classes started in February 2020. At the beginning of the course, students were asked to write a calculus readiness test. This test provided students with an indication of their own levels of mathematical competency and alerted them to the gaps in terms of the prior knowledge that they needed to be successful at university level. Students who scored below 60% were strongly advised to complete the fully online preparatory mathematics short course before the academic year began. Even if they achieved a fair mark, they were encouraged to take the course to improve their proficiency.

The short course provided students with the opportunity to revise the mathematical concepts that have been identified as problematic. They could work through the theory, watch video explanations, do exercises and complete tests after each theme. During the official orientation week of the University in January 2020, students wrote the calculus readiness test again, this time under the usual controlled conditions, using optical scanner forms. Students then received feedback on the test during their first week of class. Where necessary, students who were at risk were offered further support.

Participation in this voluntary initiative was higher than expected, and from the initial data it is evident that prospective students benefited from doing the fully online short course. The Department of Mathematics and COES intend to analyse the data thoroughly and keep track of students' mathematics performance during the first year to monitor the extent to which the short course affected their success at university level.

Responses received from an online survey on the usefulness of the course were overwhelmingly positive.

- *Yes, it gave a good indication of where a gap in your knowledge exists and provided you with the info to fill the gap.*
- *For any student who still struggles with certain basic mathematical concepts, or students who would simply like to refresh the mathematical skills obtained in high school, the preparatory course is helpful.*
- *I left high school a few years ago so this course provided excellent information to revise and learn the tips. It really helped to start my first university maths at the required level. I determined my own pace and all fundamental maths concepts were presented in a very informative way.*

- *I liked that it re-introduced me to basic rules first, then it went on to show me how to solve more complex problems. I think that the course was perfectly constructed to thoroughly understand mathematics and it helped me identify the mistakes that I used to make.*

The Department of Mathematics intends to leave this fully online short course open as a resource to first-year students so that they can come back and revise concepts throughout the year, should there be a need.

Up-scaling the extent of data-based decision-making

An evidence-based approach

An evidence-based approach has become one of the strategic foci for many higher education institutions globally and in South Africa. According to an article published in *Campus Technology*, a culture of evidence is the outcome of a deliberate strategy to make decisions through the analysis of data (Tracey, 2008: 1). This implies that there is a routine practice of using data to inform decision-making in a continuous cycle of improvement. Authors of the Research and Planning (RP) Group refer to a culture of inquiry, which relates to the exploring and scrutinising of the information to understand its meaning and implications for practice (Chaplot, Booth & Johnstone, 2013). The University of Pretoria joined the Siyaphumelela project in 2015 with a number of national institutions, funded by the Kresge Foundation, with the goal of developing data-analytics capacity and strengthening and fostering an already functional evidence-based approach to student success. The Siyaphumelela project therefore afforded UP the opportunity to integrate many of its approaches through institutional fora and strategic projects targeted at improving student success: namely, the FLY@UP campaign to promote minimum time to completion, the development of a data-analytics task-team, and various developmental opportunities to train staff on institutional data platforms. The two entities on campus to facilitate an evidence-based approach were the Department of Institutional Planning and the Department for Education Innovation, particularly its Higher Education Research and Innovation Unit, headed by Dr Juan-Claude Lemmens. Together, these entities steered the data and knowledge needs of the institution.

References

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Tshebi

Tshebi, the data analytics committee, continues to flourish and to train deputy deans of teaching and learning in the use of analytics reports and dashboards. The committee was also the platform for faculties to report on the outcomes of the new team and data-based approach to module review in 2019.

The Tshebi team, focused on data analytics, met every third Monday. The focus areas addressed were:

Tshebi HIMs project

The purpose of the project is to provide a holistic evaluation of high-impact modules (HIMs) with targeted interventions to increase the module success rate. A variety of data sources was used: CLASSE; cluster analysis; FGIs technology: Blackboard A4L and Predict; PowerHEDA; and Tableau. During the meetings of the review teams, data were analysed to understand the specific issues that impacted on the performance of that specific module: curriculum, assessment, policies and practices, support services, communication, students and lecturers.

Department of Institutional Planning presentations using PowerHEDA

Cohort analysis and undergraduate student success, UG admission management for new students on PS, FAQs with regard to HEDA data.

Student success presentations

The following topics were addressed: STARS and nudging; cluster analysis; evaluation of FSAs; SASSE, LSSE and CLASSE; online application and registration; new UP Readiness Survey; data analytics for UP residences; course pathway recommendations; R4W; and student entrepreneurship initiatives.

Learning analytics

There were two focus areas: the Blackboard Predict pilot project and the Mamelodi Campus learning analytics project.

Student well-being

Qualitative research into student well-being and the characteristics of successful students continued under Prof Irma Eloff.

The Tshebi-led team approach to module review using data from the Bureau for Institutional Research and Planning (BIRAP) and Blackboard to support decision-making was the main focus of activity in 2019. The HIMs project focused on holistic pathway analysis of undergraduate modules with a pass rate of less than 75% and enrolment of more than 500 students.

- Six task team meetings were held in the first semester, covering nine HIMs.
- Ten task team meetings were held in the second semester, covering ten HIMs.
- CLASSE was administered in nine modules in the first semester, including feedback on the results with possible actionable items for the lecturer.
- Focus group interviews were held with students from four modules.
- Additional data were sourced for various modules.
- A survey was administered to students who discontinued modules before the examinations.

- Additional meetings were held by most lecturers to learn more about Blackboard Predict and the improved use of clickUP.
- The ECs from Education Innovation supported the lecturers with issues on assessment, constructive alignment, etc, as required.
- Representatives from eight modules gave feedback to the Tshebi committee, and the issues raised there are in the process of being actioned.
 - These include module prerequisites, summer and winter schools, and the impact of service programmes on module performance.
- Table 1 below provides some data on the outcome of the application of a team- and data-based approach to module review and improvement (average improvement 13,3%). The modules are identified per faculty rather than according to a specific module code.

Table 1: Improvements from team- and data-based reviews of at-risk modules

	Students	Lecturers	2018 %	2019 %	Improvement %
1st semester					
HUM 210	555	5	58,9	79,6	20,7
LAW 310	545	2	66,2	86,2	20,0
EDU 111	138	1	65,2	71,0	5,8
EMS 210	1 258	2	66,1	86,3	20,2
EMS 310	582	2	68,2	71,0	3,5
LAW 310	630	2	57,7	68,9	11,2
2nd semester					
LAW 320	635	2	60,2	74,8	14,6
EBIT 122	1 929	2	39,4	57,0	17,6
EBIT 122	540	1	41,7	74,3	32,6
EBIT 123	853	2	52,5	59,0	6,5
NAS 220	375	3	43,7	48,5	4,8
NAS 261	205	6	35,1	74,4	39,3
NAS 166	588	2	44,0	55,9	11,9
NAS 164	533	3	68,3	81,1	12,8
HUM 120	690	2	69,4	84,4	15,0
HS 161	206	2	66,5	79,0	12,5
HS 120	155	3	85,8	92,5	6,7
EMS 100/101	588	4	66,0	72,8	6,8
VET 200a	198	5	90,9	94,7	3,8
VET 200b	202	8	91,9	89,9	-1,2

HUM: Humanities, EMS: Economic and Management Sciences, ENG: Engineering, VET: Veterinary Science, HS: Health Sciences, EBIT: Engineering, Built Environment and Information Technology, LAW: Law, EDU: Education, NAS: Natural and Agricultural Sciences

Data for official use, HEMIS data, are captured by various data 'custodians' and aggregated by BIRAP, which keeps all data and shares them with the Executive, with other members of staff through dashboards, and with the DHET. BIRAP continued to expand and refine the undergraduate student success dashboards with additional reports to address requirements of academics.

LMS dashboards were refined for deputy deans and students, and dashboards introduced for academic heads of departments. The dashboards provided descriptive data for HoDs to monitor students' formative progress as well as the level of LMS usage. Analytics for Learn data show that first-year students above the third quartile of clickUP users outperformed those below the second quartile by 16,6% on average in 2019.

Predictive analytics

Predictive analytics looks for indicators that show that a student might be at risk in the future because of performance or behaviours.

Bonus grant and nudges

The University has been working with the Kresge Foundation since 2014 on the Siyaphumelela project. As an extension of the project, the Foundation encouraged the five participating institutions to undertake a 'bonus' activity for which they could earn additional funding if it proved to be successful. Dr Lemmens of Education Innovation laid the groundwork to incorporate predictive analytics to identify student with risks related to progression and graduation in minimum time. Dr Lemmens' research showed that the credit-fail ratio of students was a major predictor of not completing in minimum time. The idea was to integrate the information and dashboards to support the nudging campaign. Nudges are messages to students offering support and encouragement. The first nudges were sent shortly after registration, in the grace period for cancelling modules, to warn students that they had registered for too few or too many modules, thus putting themselves at risk. They were given advice on how to proceed to rectify the situation. Many followed the advice and made the necessary changes. The second set of nudges was sent after the results of first-semester examinations were available. Students were clustered into high, medium and low risk groups. In all cases there were words of encouragement and advice on the resources available for help, usually the FSAs. The success of the project led to the awarding of the bonus grant. Dr Lemmens also shared the information on the nudging project at the annual Siyaphumelela conference in Johannesburg: 'University of Pretoria: Evaluating the nudging campaign'.

The Faculty of Economic and Management Sciences has been working successfully for the past five years with nudges in its Phafoga Early Warning System. First-year students are sent nudges based on their performance in their first summative

assessment. This has been effective in assisting students to improve.

Blackboard Predict

Mr Jordaan of Education Innovation focused on using LMS data for predictive purposes. The pilot started in 2018. A strategic focus in 2019 was the support of the HIMs project as well as the ABET accreditation in the Department of Informatics in the Faculty of Engineering, Built Environment and Information Technology. Thanks to Blackboard Predict, various stakeholders have technology-enabled tools to make data-based decisions that lead to improved student retention and success. In 2019 more lecturers started to use the student success dashboards embedded in the LMS. For example, the retention dashboard was used by 459 instructors to monitor students based on set criteria. The instructor course analytics dashboards were used by 324 lecturers, while 1 998 users with an instructor role used the grade centre to capture formative grades.



Student success

A student lifecycle approach was adopted in the context of the four stages: namely, connection, entry, progress and completion (Rassen et al, 2013). As can be seen, this model aligns with the institutional goal of student access and success – personally, academically and professionally.



Figure 4: The four stages in the student life cycle

Reference

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Connection

UP as the institution of choice: #ChooseUP campaign

The #ChooseUP campaign forms part of the institutional integrated campaigns managed by the Department for Institutional Advancement (DIA). The #ChooseUP campaign provides the University of Pretoria with an overarching strategy to attract its varied target audiences such as undergraduate students, postgraduate students, international students, funders and industry partners, etc.

The #ChooseUP campaign included hosting the #ChooseUP Information Day for conditionally admitted students and their parents on 17 August 2019. The faculty-focused event coordinated by the Department Enrolment and Student Administration (DESA) provided an opportunity for these students, parents or guardians to engage with the Vice-Chancellor and Principal and deans, as well as to attend information sessions on various programmes and mock lectures, academic and curriculum advising sessions, registration and orientation information sessions, and sessions provided by various support departments.

Nationally, this event won an Excellence Award from the Marketing, Advancement and Communication in Education (MACE) organisation for the second year running.

Differentiated recruitment in various market segments

The undergraduate recruitment strategy emphasised the importance of responsible study and career choices and the employability of students. Various initiatives were used to



#ChooseUP day 2019, Hatfield Campus



#ChooseUP day 2019, Hatfield Campus

achieve this goal, including the annual #ChooseUP Day for conditionally admitted students, the JuniorTukkie Grade 11 Top Achiever Function, the Grade 11 Empowerment Week, the Grade 12 Preparation Conference, the Grade 10 Walk the Talk Day, the Grade 9 learners and parents Information Session, and the Life Orientation Teacher Campus Visit. Emphasis was placed on recruiting quality students from independent schools in South Africa and abroad that offer the Cambridge, IB and IEB qualifications. At the same time, the strategy focused on strengthening relationships with internal/external partners, schools and communities, as well as prospective students, contributing to providing guidance in respect of responsible study and career choices. The Communication Unit within DESA also assisted in providing more focused and better coordinated communication to the prospective and current student markets.

The University continued building stronger connections with schools serving marginalised communities through the JuniorTukkie (JT) programme, and in particular the DESA-JT outreach programme. The DESA JuniorTukkie app is still well received in the prospective students market and reached 18 540 downloads. The newly launched UP Mobile app for students was also promoted through the JT app, and the UP Mobile app now includes a prospective student persona.

At the starting line: Gearing up for university

The University's free, online university preparation course for

provisionally accepted first-year students is entitled 'At the starting line: Gearing up for university'. It has two aims: to address the gap between high school and university by focusing on five educational skills (time management, note taking, study skills, setting goals, and academic reading skills), and to increase the registration realisation rate of provisionally accepted students.

The course was made available again to the 2019 cohort with several changes, which included moving the course from the Blackboard Open education system to clickUP and enrolling all provisionally accepted students via an integration process from PeopleSoft. These changes made it possible for students to familiarise themselves with the software they will use for their studies without having to go through a self-enrolment process.

It was launched to the provisionally accepted first-year students during the #ChooseUP day on 4 August 2018 and remained open until 28 January 2019. A reminder SMS was sent to all first-year students again early in January 2019 to access the course. Each of the learning units was structured to contain an introduction video, information sites and sheets, a quiz, a practical activity and a review of the learning unit. The participants had to complete the quiz and the learning activity and rate the learning activity to receive a badge for a unit. Students could complete the learning units in any sequence.

Completion statistics show that 2 199 students accessed the course prior to registration in January 2019. According to the survey included, students who completed the module found

it worthwhile. The diversity of students and their needs again became clear in the individual learning unit evaluations. While some appreciated the different approach taken to what was done in the school curriculum, others saw it as repetitive.

The course was again marketed to the prospective 2020 cohort at the #ChooseUP day through information included in the presentations to faculties, as well as Z-folds that were distributed at the Hybrid Learning booth.



At the starting line

Entry

Registration 2019

The online registration process commenced on 3 January 2019 for returning students and proceeded without any major incidents. Assisted online registration for first-year students commenced on 10 January 2019 at the Hillcrest Campus. Students were assisted in various areas: career guidance, change of programmes, admissions, registrations, finances, accommodation and international requirements. Students who forfeited their admission were referred to the Central Application Clearing House for possible admission to another university.

Onboarding: Orientation and UPO

Orientation

At the University of Pretoria, orientation of first-year students is considered a critical success factor in attaining Goal 1 of the Strategy Plan's second five-year cycle (2017–2021), that is, to increase access, throughput and success of students. The academic orientation programme for the first-year students falls under the Vice-Principal: Academic, Prof Norman Duncan, and was organised and coordinated in 2019 by the Deputy Director: Academic Development and Support of the Department for Education Innovation, Prof Ana Naidoo.

The development of the academic orientation programme was placed in the context of the four stages in the student life cycle, with orientation being the link between entry and progress.

In order to enhance the impact of the academic orientation week, efforts were made to incorporate each faculty's context by collaborating closely with them during the planning stages of the programme.

The orientation week was aligned to the FLY@UP campaign, in its fourth year of implementation in 2019, and focused on the incoming cohort of students' minimum time to completion. FLY@UP was used as a platform, during orientation, to introduce students to UP resources. This was done through sessions presented by the FSAs. The orientation was followed by generic workshops offered by FSAs to first-year students on various topics. It was compulsory for first-year students to attend at least one workshop. This allowed students to get a taste of what the workshops are like and

to come face-to-face with an advisor knowledgeable about their faculty as well as co-curricular skills important to student success such as study skills and time management.

The aspects forming the foci are **T**ransitions, **A**dvice and academic support, **S**upport information that students will need, **T**echnology and **E**xpectations. Collectively, the initials show that the programme gives first-year students a **TASTE** of UP.

The attendance at the orientation programme has been rising over the last three years. In 2019 efforts were made to position orientation as being necessary for student success. In follow-up research, 6 777 (72%) of the 9 378 first-year students indicated that they had attended the orientation week events.

A total of 4 813 students completed the survey in 2019 and the findings reflected that the planned outcomes of the programme were achieved:

- Students reported that they felt welcome at UP.
- A majority of the students agreed that the academic orientation prepared them for the academic year.
- A majority of the students reported that after attending the academic orientation programme, they were able to adapt to the university environment and could cope with the academic demands of being at university.
- Students agreed that after attending orientation, they knew where to find any form of help when they needed it.

UPO module: Eight-week online extended orientation programme

In addition to the one-week on-campus academic orientation, all students were required to complete an eight-week online extended orientation programme (UPO). Students started their online extended orientation during the orientation week. Topics covered weekly included details of FSAs and other resources, time management and goal setting, academic reading and writing, note taking, study methods, and examination preparation. In 2019, UPO produced a 94% completion rate, with 9 378 students enrolled for the module.

The UPO modules are monitored constantly and students are motivated to engage with and complete the module through regular (weekly) nudges. A nudge is an electronic message of encouragement and advice. Assessments in the UPO module, which encourage student engagement, are concluded within a few weeks of delivering the eight-week content. The resources and tools contained in the UPO module remain available to students throughout the academic year. This resource provides the first-year students with access to academic support and consultation with advisors, who are the facilitators of the UPO module, on academic challenges throughout the year.

Furthermore, in order to fulfil the objectives of the academic orientation programme, and to enhance the fully online UPO module, the FSAs, who are based in faculties, delivered weekly first-year academic support sessions during the first semester. It was mandatory that all first-year students attend at least one workshop.

In addition, UPO provided a resource for those students who, through no fault of their own, were unable to attend the orientation programme.

Wrap-around donor-funded programmes

In many ways, the programmes discussed in this section belong throughout the student journey, enabling entry and ensuring progress and completion. They are placed here because they start with students being able to study at the University because of the bursaries offered. Many other bursaries are offered by generous individuals, family and corporate donors, but these are highlighted because of the wrap-around opportunities provided.

Michael and Susan Dell Foundation

The Michael and Susan Dell Foundation (MSDF) provides support to two different programmes at the University of Pretoria: the Dell Young Leaders programme (since 2012) and the Sikelela Scholars Programme (since 2016).

The Dell Young Leaders programme

The Dell Young Leaders (DYL) programme took on its eighth cohort of 60 students at the University of Pretoria in 2019. This brought the total number of students awarded the Dell Young Leaders Scholarship at UP to 430. Candidates were first-year students on NSFAS and they were provided with financial support for their studies – R150 000 over the span of their degree studies to reduce their NSFAS loans – as well as laptops and wrap-around support, organised by the programme managers who also consulted regularly with each student.



Dell Young Leaders – Launch 2019



The Vice-Chancellor and Principal, Prof T Kupe, Welcomes the Sikelela Scholars, 21 August 2019

The DYL programme has consistently seen success with a high percentage of students completing their degrees and finding employment. A further 51 students completed their degrees at the end of 2019, bringing the total number of students who completed their undergraduate degrees at the University of Pretoria to 191. Of these graduates, 99,5% have either gone on to postgraduate studies or have successfully been placed in employment. The persistence rate continues to track above 95%. In 2019, almost 40% of the active students achieved a GPA of 70% or better.

The programme prepares students for their studies but also for work and life. In 2019 a strong emphasis was placed on initial goal-setting, wellness (including healthy eating, activity, sleep and mental health) and networking with DYL alumni. As part of the work-readiness initiative, students participated in the DYL Business Case Challenge Symposium on 31 August. Mr Katlego Thindisa became part of the

programme team in September, joining the manager, Mr David Thompson.

Sikelela Scholars Programme

The Sikelela Scholars Programme (SSP) is a university completion programme that offers students holistic support that is critical in easing the transition to university, driving progress towards graduation and preparing students for the world of work.

In July 2019, a cohort of 150 new students was recruited into the programme. In December 2019, the first cohort of 70 students completed their degrees.

The programme ran without a manager for the first semester of 2019 until the appointment of Ms Sihle Nontshokweni.

The programme has a number of key components:

- Early warnings for poor academic performance: Bi-annual check-ins were conducted at the beginning of each semester, requiring students to

complete a survey in order to unlock the swipe card provided as part of the programme's financial support. This check-in enabled early identification of students at risk owing to situational and financial issues.

- On-demand employment support: An external company was contracted for its technology product, enabling cost-effective, high-quality, scalable employment support that should improve the work readiness and employment outcomes of the programme's graduates. The application developed for SSP allowed students to upload CVs so they could receive feedback. The platform also has mock interviews, company profiles in their respective fields and valuable tips for the job-seeking process.
- Student wellness: A wellness programme was developed to address persistent mental and physical fatigue – promoting healthy eating, physical activity and sleep hygiene habits.

Ikusasa Student Financial Aid Programme

The Ikusasa Student Financial Aid Programme (ISFAP), a public-private partnership initiative, was launched as a pilot in 2017. Four faculties at the University of Pretoria were selected as the focus was on scarce skills: Engineering, Built Environment and Information Technology, Economic and Management Sciences, Natural and Agricultural Sciences and Health Sciences. At the end of 2019, a total of 268 students remained active on the ISFAP.

The programme has a number of strengths:

- Individual sessions and consultation between project managers and students identify situational issues.
- Peer-group sessions where the stronger students guide and motivate the high-risk students.
- Shared as well as faculty-specific social events build cohesion and a sense of community for students.
- The course on *The 7 habits of highly effective college students* is both popular and successful as it assists students in the process of self-reflection as well as stimulating independent thinking.

Interventions by ISFAP project managers can either be specific or a combination of one of the existing University support structures.

Faculties focused on one-on-one consultations, which included setting of individual goals, academic performance discussions, referrals to advisors and counsellors and learning communities with tutors.

ISFAP national requested that UP have an event foregrounding gender-based violence in 2019. UP-ISFAP hosted an empowering self-defence class for all ISFAP students in response. Students confirmed that the three-hour session gave them more hope and agency to defend themselves.

Workshops were hosted throughout the year, with much the same focus as the MSDF programmes: wellness, stress management, building confidence, emotional intelligence, mental toughness and resilience. Motivational speakers at various social events shared their experiences with students and how they overcame challenges. There was also a focus on work readiness for final-year students.

MasterCard Foundation Scholarship Programme

The University of Pretoria, in partnership with the Mastercard Foundation Scholarship Programme (MCFSP), offers scholarships to high-achieving African students interested in studying at undergraduate or postgraduate levels. Dr Grace Ramafi was appointed as the programme manager in July. Dimakatso Mashigo came on board as the Administrative Officer in January and Lennox Wasara as the Entrepreneurship Coordinator in February.

In 2019, the MCFSP welcomed 63 new students from 13 African countries to pursue their studies at the University of Pretoria. As one outcome of the programme's monitoring and mentorship efforts, a number of scholars received academic achievements, which validated their hard work. To name a few:



Members of the Executive and faculty managements with the 2019 MCFSP cohort

- Jane Akura (MEng Water Resource Engineering) from Kenya participated in the Writing for Impact Workshop held in Kigali, Rwanda;
- Phinda Magagula (MSc Plant Science) from Swaziland presented a poster in a conference organised by Plant Cell and Environment in Glasgow, Scotland;
- Linda Sankhulani (MSc Agricultural Economics) from Swaziland received the award for best student in a shared facility for specialisation and electives (SFSE) from the African Economic Research Council; and
- Emmanuel Adu-Awuku (MEng Chemical Engineering) from Zambia and Letlama Setene from Lesotho (MSc Agricultural Economics), who were students in 2018, continue to receive mentorship on technical and soft skills from Facebook.com. Topics such as introductions, goal setting and professional conduct, among others, were discussed during consultations. They receive mentorship via Zoom on a monthly basis and they are both grateful for the support. The support will continue until the end of 2020.

The MCFSP has provided additional funding for two years, starting in 2019, to enable scholars to activate and augment their social and entrepreneurial projects. Vegetable farming was one such project.



MCFSP students and Community Engagement Vegetable Farming Project

Soil for planting was prepared with the support of Bidvest Turf Company. Tools, accessories and seedlings were purchased from Bidvest. Over 1 000 spinach and cabbage seedlings were planted on two separate days (15 and 30 August 2019). MCFSP partners at the University, Enactus and the Business Unit staff from the Faculty of Economic and Management Sciences and their community engagement students, assisted scholars during the two days of planting.

Parallel to the planting of the seedlings, scholars consulted with the entrepreneur coordinator on a one-on-one basis to support

theory with practice. The virtual incubation programme is another avenue of support for the scholars. Using video training, the scholars were able to access the videos in their own time, at their own pace.

A poster was shared at the University of Pretoria's Entrepreneurship Week showcasing the activities of the MCFSP scholars' entrepreneurial activities. As a result, the scholars sold their produce (spinach) to TuksRes, the University's Food Services Division, which caters for and manages 13 dining halls on campus. The scholars also participated in the University's campaign, 'Healthy living THE UP WAY', an awareness campaign to help staff and students make smarter food choices that are both nutritious and affordable.

Achievements were shared more widely in the following ways:

- a poster on the alumni activities of the project at the 2019 Baobab Summit held in Rwanda, Kigali, 1–4 August 2019; and
- a presentation on community engagement and the entrepreneurship project at the US National Scholarship Providers Association (NSPA) in Minneapolis, on 30 September 2019.

Every year there are a number of scholar-led initiatives. In 2019, the six 2019 scholar representatives, comprising three undergraduates and three postgraduates, divided themselves



into teams. The scholars were given a choice to pick a team in which to participate. The success of the activities by the scholars was a result of this participatory approach:

- Community engagement: The scholars visited Leamogetswe Safety Home for abused and abandoned children in Atteridgeville, west of Pretoria, on 21 July, donating their time, groceries and toiletries, and children's books.
- Tutoring: The programme had twelve tutors who collectively offered free tutoring services to 217 students at the University of Pretoria, including MCFSP scholars. Some of

the modules the tutors helped students with were calculus, statistics, mathematical statistics, microbiology, chemistry, computer programming, accounting, economics and business management. This activity operates on the premise that every student deserves to 'FLY @UP'.

- **Media:** The team was trained by the University Media Unit on how to take good pictures and edit them. The team attends all the programme's events to take pictures, which are stored on the programme's Google drive.
- **Family Day:** MCFSP Family Day was an opportunity to bring both current scholars and alumni of the programme together to share their stories, connect and inspire one another. Through this, they could together find ways and opportunities to achieve more and contribute to the continent by selflessly giving back. The event was held on 17 August.
- **Heritage Day:** The scholars held their Heritage Day celebrations on 21 September. The event showcased the multicultural diversity of Africa as found within the scholar community at the University. Music, food and clothing from different parts of Africa were on display. This event provided a unique opportunity for scholars to socialise and learn more about one another and Africa as a whole. Current scholars participating in leadership and community engagement and who are performing well in academics took to the stage and shared how they manage to do well in these areas. For example, Ms Pilirani Tendai Khoza from Malawi, a master's student in forestry and environmental science, shared her experience as a recipient of the 2019 Mandela Washington fellows programme in June 2019. She was also a recipient of an award from the Queen of England for her contribution to women's empowerment in her home country, Malawi.

Students supported to be 'FIT' for academics and for life

The 'FIT' unit at the Faculty of Economic and Management Sciences at UP supports students and staff funded by FASSET, ISFAP and Thuthuka. The three funding and bursary programmes focus on students studying for BCom (Accounting Sciences) as well as a few other degrees and postgraduate diplomas in the financial sciences field.

In 2019, 307 students were funded and supported by the wrap-around programmes in the unit. The majority of them were undergraduate (232), while honours and postgraduate diploma students (75) made up the remainder.

The support given to ISFAP students (83 of the 307) in the 'FIT' unit will be addressed as part of the separate contribution focusing on the UP ISFAP team.

The use of the financial support provided by the various funders differs marginally between the programmes, but mostly takes care of tuition fees, textbooks, accommodation, food and a small monthly stipend.

The personnel involved in the 'FIT' unit comprise dedicated programme managers, an academic trainee, as well as an administrative staff member. The staff members supported students in 2019 in a wide variety of ways but were mindful to ensure that students remained independent and were thus able to face the challenges of the real world, including the workplace.

One-on-one conversations with students formed the cornerstone of the FIT psycho-social and academic support. Additional weekly, bi-weekly or monthly skills sessions with students (depending on their level of study) inculcated a variety of life and academic skills. The team used Covey's *The 7 habits of highly effective students* as the point of departure for support and development of students. Although students are paired with mentors, strong emphasis is placed on training and directing them towards making use of all the existing assistance UP offers, which includes tutorials, tutors, academic trainees and consultations with lecturers.

The UP Thuthuka section of the 'FIT' unit has been running for more than ten years and is funded by the South African Institute of Chartered Accountants (SAICA) and contributing partners. In similar fashion, the FASSET section is funded by the Finance and Accounting Services Sector Training Authority (FASSET) and has supported students for five years. This section commenced on a much smaller scale where the programme provided only textbooks and academic support to students. Over time, however, this was upgraded to wrap-around assistance, including both financial and academic support from the second year to fourth year.

Students enrolled in these programmes have consistently performed on par with or better than the groups they form part of. Although students experience more challenges during their postgraduate studies, their results in the SAICA Initial Test of Competence (ITC) are on par with comparable unsupported students.

In addition to the excellent overall results mentioned above, two UP candidates were placed among the top ten candidates in the January 2016 ITC. Of the 2 561 candidates who wrote the examination, Ms Azile Nkabinde achieved fourth position (with honours) and Ms Maryna Roesch ninth position. Ms Nkabinde also distinguished herself by being the first Thuthuka student in the history of the programme to achieve a place in the top ten and to pass the examination with honours – another first for UP. The fact that only six out of 2 561 candidates (0,23%) who wrote the examination passed with honours (distinction) makes her achievement even more remarkable.

Mentoring: Supporting students in the transition to university

The STARS Mentorship Programme is about assisting first-year students socially and emotionally, with a view to enhancing their academic performance. The programme is run by the Department of Student Affairs (DSA) under the leadership of

Dr Rina Wilken. It targets only those students who self-identify as at-risk in the Student Academic Readiness Survey (STARS), completed during orientation, and first-generation and rural students. Other students may apply to sign up to be linked with a mentor. An interesting observation is that first-year students who sign up voluntarily tend to be more open to and positive about being guided by a mentor.

The role of the mentor is crucial in the adjustment of the first-year student of university life. A student needs to adapt to university life in a holistic manner, and the focus should not be on academic success only. The reason why students enter tertiary education is to be academically successful. However, academic success can only be achieved when students adapt to university life in a holistic manner. They need to be socially, emotionally and academically 'healthy' to be 100% successful. This is where the STARS Mentorship Programme plays a significant role. First-year students who sign up to become mentees are assisted throughout their first semester to become 'campus-wise' and adapt to the university environment.

UP has a wonderful group of enthusiastic mentors who volunteer their services for free. Most were previously part of the programme as mentees. They receive training and submit regular monitoring reports.

During 2018 and 2019 data were collected on the number of first-year students (mentees) signing up for the STARS Mentorship Programme who stayed in the programme until the August of that year. This information shows that several mentees sign up in each faculty every year and are assisted throughout their first semester until 31 August of their second semester as first-year students (mentees). The fact that they are still on board on 31 August of a specific year indicates that they passed their first semester and did not drop out. Note that the Faculty of Health Sciences runs its own mentorship programme and each first-year student receives a third-year mentor. Veterinary Science students spend their first year on the Hatfield Campus and are included in the Natural and Agricultural Sciences numbers.

Table 2: Data on the 2019 mentee cohorts

Faculty	Signed up February 2019	Still on board 31 August 2019
Economic and Management Sciences	339	332
Education	439	415
Engineering, Built Environment and Information Technology	315	273
Humanities	264	238
Law	120	94
Natural and Agricultural Sciences	280	219
Theology and Religion	69	69

The DSA also trains mentors for the residences as well in other 'pockets' such as the VCDMA Mentorship Programme, the ASABA Mentorship Programme, and The MasterCard Foundation Scholars Programme. All of these 'pockets' fall under the STARS mentorship umbrella.

A pilot survey was conducted with first-year students who made use of mentors trained by DSA. There were 24 questions. There was an excellent response rate as the survey was administered to known students. Overall, the responses were very positive: the overwhelming majority would recommend mentoring to a friend and agreed that mentors cared about their well-being and provided individualised attention, for instance.

Progress

Students' progress relies firstly on their own effort and engagement. Lecturers facilitate that learning in contact and online sessions. Some of their innovative teaching approaches are detailed in the faculty stories in Section B of this publication. All faculties also offer tutoring in a variety of modules. Attendance is not compulsory but those students who attend outperform their peers. Many lecturers use group work extensively, but students also take the initiative to form study groups with peers as well. Some programmes include work-integrated learning and others credit-bearing community engagement. Lecturers also refer students to resources such as the library and the FSAs.

At the University of Pretoria, the minimum time to completion campaign, labelled as FLY@UP, strives to facilitate progress in a variety of ways that are discussed below. Extremely important to the initiative is inviting students to take responsibility for their own progress.

FLY@UP and student momentum

Once first-year students have registered and completed orientation, they start their educational pathway. Vincent Tinto, an international guru on student success since the 1970s, stresses the importance of early momentum and success to student progress. Tinto makes an analogy to Newton's assertion that objects in motion stay in motion to support his argument that students need to be assisted to gain momentum in passing modules in order to ensure that success engenders continued momentum: 'Gaining and maintaining motion is key to student completion' (Tinto, 2013: 1). First-year students can also feel totally overwhelmed once immersed in the hectic pace of lectures and academic expectations; therefore, sustained, visible support is necessary.

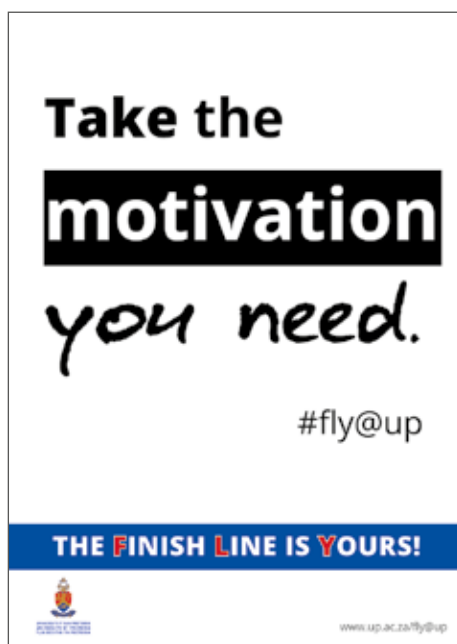
The FLY@UP campaign thus maintained momentum in February, after the orientation period, and continued with regular interventions for the rest of the year.

Reference

Tinto, V. (2013). Isaac Newton and student college completion. *Journal of College Student Retention*, 15(1):1-7.

Invitation to motivation

The first open-air events or activations invited students to 'take the motivation you need' and were held on Groenkloof Campus on 20 February and on Hatfield Campus on 21 February. The focus was on encouraging students to be mindful, sharing the message of FLY@UP, motivating students, making resources available and creating increased awareness around graduating in minimum time. Student FLY ambassadors interacted with students to facilitate the event that was held in partnership with the University's Student Health Services and Student Counselling. Of course, all students, not just those in first year, were welcome to participate.



FLY@UP poster and social media campaign

In March, the campaign began to strengthen the FLY@UP messages through the FLY@UP poster and social media campaign where student voices were used to convey the messages. The three messages used are linked to the main reasons why UP students do not graduate in minimum time. The messages were coupled with encouraging messages from the winners of the 2018 FLY@UP success stories competition, shown in the photos. The full stories and video recordings are available on the FLY website at www.up.ac.za/fly@up, and a QR code link to this website was placed on the posters as a call to action.



FLY@UP message posters

On 14 March the second Piazza event took place. Once again the FLY ambassadors spread the messages of FLY@UP, motivated students, and made resources available by working with Student Health Services. Brochures with FSA and other support contact details were handed out to create increased awareness around support available.

Making success fun



February activation



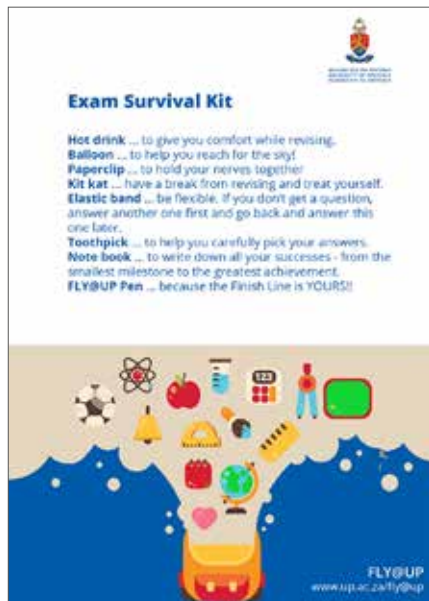
Fun on Inflatables

In April FLY@UP hosted the first of its 'fun days', which took into consideration the students' plea for some fun and relaxation. Inflatables were hired for the day and, as can be seen from the pictures, it proved very successful in providing students with an opportunity to enjoy themselves in between classes and studies. The message was clear: work hard, play hard – the key is balance. Approximately 450 students participated on the day, and even though they had a long wait and some even had to leave without getting a chance to enjoy the inflatables owing to having class, the feedback was still overwhelmingly positive. Students loved the chance to relax and felt that the University cared about them and listened to their needs. A survey of students revealed that 92,9% of them thought that fun days added to student success.

Marketing FLY@UP

FLY@UP's manager, Dr Hestie Byles, realised that no-one knows the needs of students better than students, and therefore FLY@UP embarked on a partnership with the BComHons (Marketing Management) students. The students were approached to develop an innovative experiential marketing campaign to entice UP students to use the resources offered by FLY@UP. The students were tasked with creating relevant, yet extraordinary campaigns to generate student engagement with FLY@UP.

The marketing students found the challenge to be a valuable learning experience, as they were encouraged to think 'outside the box' but also in a practical way. The challenge gave students the opportunity not only to add value to FLY@UP, but also to provide FLY@UP with tools to help even more students in the future. There was mutual benefit as the students had an opportunity to apply their knowledge in practice. Students worked in groups and provided the FLY@UP team with many marketing proposals that could be used in planning future events.



Examination survival kit

Sessions at Groenkloof Campus on 17 April and Hatfield Campus on 9 May both focused on examination preparation. Examination survival kits containing a few

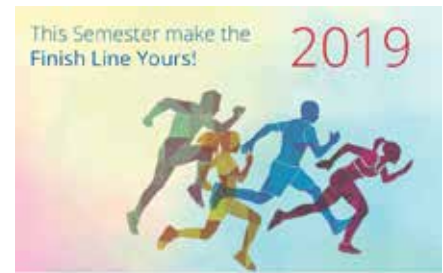
random things that had a special meaning, as shown on the poster on the left, were handed out by, among others, a team of students from the marketing management honours group. They interacted with students to make the day an interactive, motivational and inspiring one for all.

The feedback on the kits was heart-warming. The students were very happy with the kits and reported that they would help them. The team had realised that many students lack basic stationery and supplied information on where to find help. Students appreciated the information and felt that UP cares for them. Below are some of their comments:

- Provides me with material that I was yet to get
- The kit has come at the right time to assist me in my preparations for the coming Exams thumbs up
- Reminding me of help available at UP
- It's a nice treat and it's great information on what to do when it gets tough
- It has notes on where to go in times of distress
- Basically the concept helps. The fact that the fly@up is not a concept anymore but that the university actually tries to help us achieve it.
- It shows me that Fly@UP cares about us and they are trying all they can to make our studies better
- Because it tells us all the information we want to know
- I always forget my submission dates so it will help alot
- Material will help with organisation

Progressing to the second semester

Progress can be counted in small steps. For first-year students, the first step is progress from the first to the second semester, then from first year to second year. Students who were not successful in the first semester were sent nudges to direct them to advisors for assistance.



Starting line for the second semester

A Piazza event on 22 August marked the first event of the second semester. Small FLY@UP calendars, brochures and motivational quotes were handed out to encourage students: 'This semester, make the Finish Line Yours'. The calendars covered the second semester and included a few study tips as well as an examination planning guide and motivational quotes.

New House Committee's training/FLY@UP information session

In an attempt to strengthen relationships with UP student leaders, FLY@UP has a slot in the training programme for new incoming House Committee members on 26 August. Here messages and feedback were shared and buy-in was obtained from new student leaders.

Secretaries/administrative staff picnic lunch

FLY@UP believes that every staff member at UP plays a role in student success. Secretaries of deans, deputy deans and HoDs, together with staff from faculty student administration departments are often a student's first port of call. As a result, FLY@UP tries to maintain good relationships with these staff members through lunch events. In 2019, the event on 28 August, held on the Plant Sciences Building's roof, was in the form of a picnic with entertainment by student singers and a creative and relaxing activity. The feedback from staff who attended was overwhelmingly positive.

FLY@UP Piazza event

Another Piazza activation in September 2019 focused on motivation and tips before the examination



Relaxing before the examinations

Armed with more facilitators and online indemnity forms, FLY@UP hosted a second outdoor examination preparation fun day. Once more joined by Student Health Services and Psyche, a society of psychology students, the day was used to promote the theme of mental health and wellness before the examinations. Students could get a henna tattoo to support the de-stigmatisation of mental health issues. Students also received tips to consider before 'giving up' and an examination planner.

It was clear from the feedback that students felt it offered them a much-needed opportunity to relax before the examinations. Many students have also never had the opportunity to experience inflatables and thoroughly enjoyed letting their inner child run free. In addition, others were motivated by physically overcoming their fears (of heights, for example).

Eagles' Big League Support Day

Another idea from the marketing management students was a Senior Support Day or Eagle's Big League Support Day, held on 10 September. On this day, senior students were invited to learn about UP support networks. Students received an empty FLY@UP bag symbolising an empty toolkit and were tasked with visiting all the interactive stalls showcasing the various support structures. Once the kit was full, they were equipped to 'face their challenges', illustrated by their then being allowed to complete the inflatable obstacle course.



Eagles Big League Support Day

To make this day fun and interactive as well as informative, BCom marketing students each selected a resource to research and showcase on the day. Resources included, among others, a 'How do we FLY' painting, 'Don't drop the ball before you reach your finish line', 'Hopscotch with a twist to reach your career' and 'Fees and funding Pictionary'. Each faculty house also attended and offered peer support.

Specsavers

FLY@UP focuses on a holistic approach to student success. A student with an unaddressed eye impairment cannot study effectively. As a result, the partnership between FLY@UP and Specsavers (optometrists) continued in 2019 with 103 students receiving glasses. Below is feedback from students:

- *Receiving my glasses is a great privilege for me. It means I can focus on my studies without worrying about painful eyes or blurriness. It means I can see clearly in lectures and ease the tension from my eyes. Grateful for the opportunity given by the University and Specsavers, seeing clearly again is not something one should take for granted.*
- *It means a lot to me because now I can focus in class and stand a greater chance at doing well. I am truly grateful.*
- *It means that my sight has a bit more accuracy than before, which means I will be able to study even better!*

- *It really means a lot since I have been having eye problems since childhood but it has been hard for me to afford them. I have been struggling with my studies, more especially that in varsity we spend most of our time on computers or laptops. But now I am grateful for these glasses, thanks a lot to tuks, indeed, the finish line is mine. Thank you!*
- *This means the world to me and I'll be able to see clearly and realise my goal. I've been struggling to read but now that I have my reading glasses, I'll enjoy my books.*

Photographic competition

Students were again included in the planning for the October poster and social media campaign. A competition entitled Capturing Campus Hope was launched to achieve the goals of the campaign. Students were invited to enter original photographs depicting 'hope' on campus. The top picks were paired with a study tip and a motivational quote in line with the growth mindset. These posters were also converted into short video animations for sharing on social media.

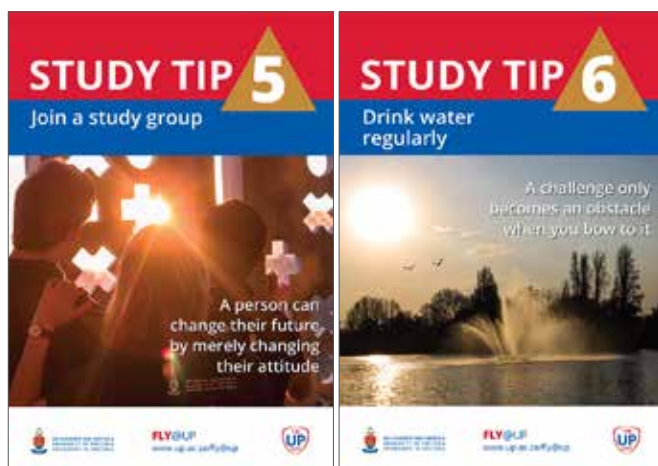
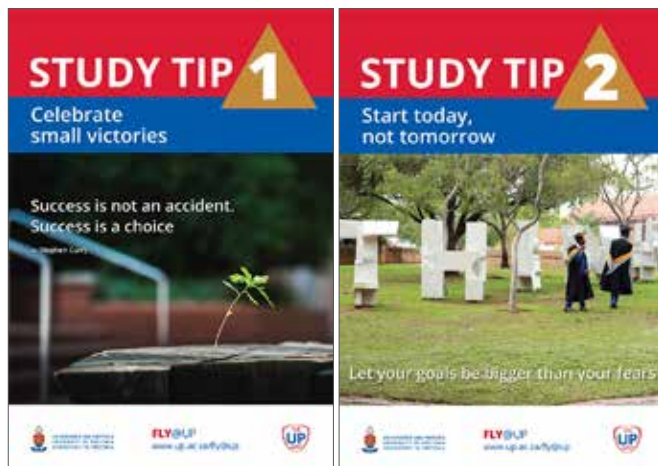


Second-year drama students conveying the FLY message

FLY@UP approached the Department of Drama in the Faculty of Humanities and were referred to the second-year drama students. They agreed to showcase the messages of FLY@UP in a stage production for their group assignment. These students did a sterling job and managed to capture the essence of FLY@UP in an emotional and captivating performance that elicited reactions from the audience throughout. It was clear that students in the audience could relate to the messages and found a lot of hope in the dramatic and inspirational ending. A video recording of the production is available on the FLY@UP website (www.up.ac.za/fly@up).

Gearing up for the finish line

In a final attempt to assist students in successfully completing their academic year, FLY@UP ran a stationery drive. Pens and notebooks were collected from departments within UP and some new pens and notebooks were bought and handed out to students who needed them for the examination.



Study tips

Completion

Career Services

The University provides a range of support and development opportunities to ensure that students are equipped for success beyond their undergraduate degrees. The University's Career Services offers workshops and individual contact sessions, as well as resources on the TuksCareers website.

On-campus work experience

A collaboration exists between Career Services and internal stakeholders with the aim of affording students an opportunity to gain work experience. Some of the departments and faculties that recruited students during 2019 included the Faculty of Engineering, Built Environment and Information Technology, the

Department of Enrolment and Student Administration, the Department of Finance, the Department of Institutional Advancement, the Faculty of Humanities, the AIM Labs, and the International Cooperation Division. Over 350 on-campus job opportunities were offered to students.

Off-campus work experience

Employers advertised internships and other workplace experience opportunities, as well as permanent appointments, on TuksCareers. The University maintains an active database of employers.

Workshops

Various workshops to prepare students for the world of work were presented in 2019. These 113 workshops were attended by 984 students.

Career fairs

Seven career fairs were hosted on campus and attended by 4 584 students.

Initiatives focused on work readiness

The free online R4W packages designed to help students prepare for, obtain and thrive in employment have increased in popularity since they were introduced in late 2016. They are run on the clickUP platform through Enterprises University of Pretoria in collaboration with Career Services.

Table 3: R4W enrolment data 2017–2019

Year	Active students
2017	2 180
2018	2 018
2019	3 566

The modules have excellent completion rates and receive positive student feedback. Students can print out a record indicating the modules they have completed and add it to their CVs. All R4W modules were reviewed and updated in 2019. New modules were also written, partly in response to student feedback –

such as a request for more faculty-specific modules – and partly to accommodate emerging trends such as the gig economy and artificial intelligence.

A project was initiated to link student roles and extra-curricular engagement at the University to outcomes identified by employers, and students will in future be able to print out this record as well.

Development of learning environments and experiences to enhance student success

Department of Facilities Management

Creating and revitalising student-focused spaces

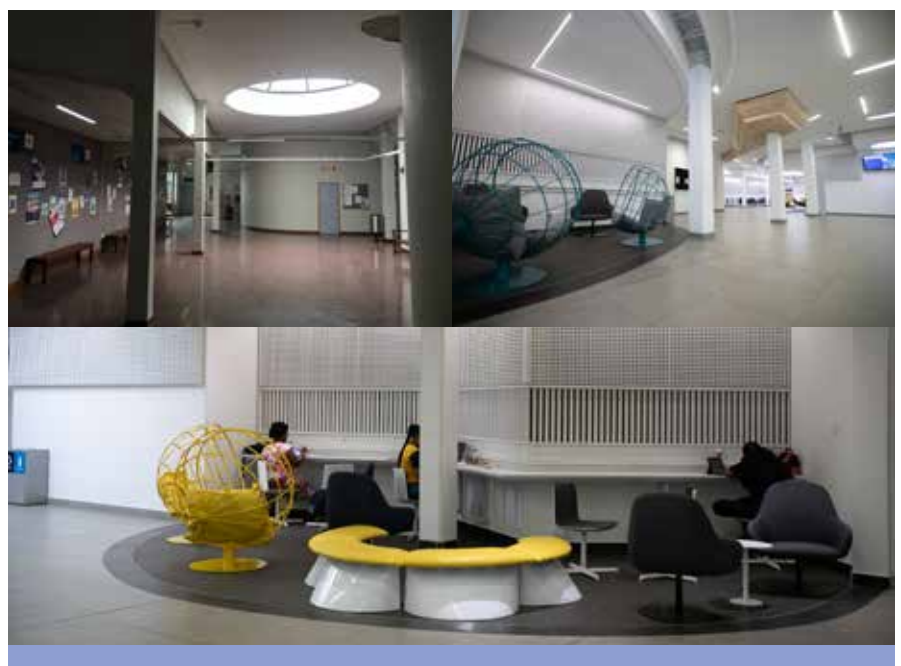
Although the University has many formal student spaces (lecture venues, libraries, laboratories, etc) of the highest quality, the need for other student-focused spaces has emerged in recent years. These include

social learning spaces, postgraduate hubs and research commons. These spaces provide opportunities for learning in a different type of environment and directly support the University's campaigns to enhance student success.

The University's Strategic Plan and student needs are the main drivers for the creation of social learning spaces. The facilities and supporting infrastructure need to be platforms for sustaining knowledge production activities such as research and teaching and learning, while providing environments in which students and staff can excel.

Revitalising existing academic spaces

The University has more than 700 buildings in its property portfolio, a third of which were built more than 60 years ago. Many of these older buildings do not support current learning pedagogies but, by upgrading some of these spaces, the user experience and special perception of the facilities have been vastly improved. Large, under-used foyer spaces create excellent opportunities for such interventions. A recent example is the conversion of the foyer in the HW Snyman Building at the Faculty of Health Sciences.



HW Snyman foyer at Health Sciences: Before and after

Design approaches



Postgraduate Hub – BMS Building, Prinshof Campus

A consultative process informs the design directive. Surveys, workshops and interviews are consequently an integral part of the planning process. The Department of Food and Consumer Sciences, for instance, completed surveys with the postgraduate students prior to finalising the design in their building. The survey revealed that the top six items for a learning space were access to information, cleanliness, security, digital equipment (Internet), accessibility (24 hours) and privacy (own workstations). Students were less concerned about branding, aesthetics and a space where inter-departmental interaction can occur. In turn, the postgraduate space in the Basic Medical Science Building was specifically designed to support group work and allows for areas where presentations may be made. The finishes of both facilities differ completely and reflect some of the principles embedded in the faculties. The furniture in the Department of Food and Consumer Sciences was manufactured locally from sustainable timber sources, while the finishes in the Basic Medical Science Building are world-class and high-tech.

Design components

A dynamic and active strategy for education inspires a holistic approach to campus planning. It is important to consider every space as a valuable tool for learning and to leverage the entire campus as a connected system of learning environments, all working together to support student success. A pallet of different spaces enables a broad range of programmed and spontaneous learning activities. These learning spaces will succeed by being flexible, versatile, continuously agile and attuned to the changing needs of the 21st-century learner. The different types of configurations include:

Private – solitary study enclaves and small breakout rooms, providing privacy without distraction for maximum productivity

Public – solitary tables in open spaces, which may be used when social connections are important but individual study is required

Private – shared spaces that support collaboration and accommodate a range of learning modes, enabling users to share and learn

Public – shared spaces that support collaboration and sharing of information, while allowing mentoring and learning from staff

Students respond to a variety of seating and table options for the different uses. They also enjoy spaces that are bold, colourful and have a modern aesthetic. Technology creates opportunities for new learning models, reshaping education towards active learning. The IT Building atrium refurbishment project incorporates all of the above and is a good example of a successful social learning space.



IT Building atrium's new social learning space



Akanyang's different social learning spaces

Current trends in designing student spaces

Spaces must reflect the culture, image and values of the University and tell a story. The newly completed Akanyang facility on the Hatfield Campus accommodates a variety of programmes, such as formal training, leisure, various seating options for individual or group work, student support, etc. These spaces encourage students to 'hang out', which is an expression that connects them to the University.

Creating 'living rooms' and a variety of spaces where students can engage at different levels has a transformative effect on students. They are the opposite of the stark, monotonous and impersonal passages and spaces that frequently appear in buildings based on previous teaching and learning models. The 'Spanish steps' in the Akanyang refurbishment project are an appealing feature that will enable this effect.

Spaces need to celebrate a purpose. Akanyang's spaces cultivate a campus culture of civility, relationships and community. The new

interior maximises the use of space by appropriating the same space for multiple functions through flexibility. The colours and textures in the design promote a sense of wellness, mental health and safety. The facility includes gender-neutral ablution facilities and is universally accessible. It also contains a commercial space that houses a mini-market, which was an unmet need on the Hatfield Campus. The mini-market is also strategically located on the main route to the Hatfield and Hillcrest residences.

It is hoped that UP students will have an authentic experience at Akanyang, where they will be equipped to apply the knowledge gained to real-world issues, problems, and situations. These learning experiences will mirror the complexities and ambiguities of real life.

Student-focused learning spaces represent the intellectual and social centres of the University. The object of these spaces is to create a home away from home for students and respond to their needs. This in turn enhances accessibility and promotes successful student learning, which is a critical goal for UP.

Department of Library Services

Teaching and learning continue to be important strategic focus areas of the Department of Library Services. With traditional roles within education changing, and advances into blended learning, librarians and the practices of the library are becoming ever more integral to the teaching and learning of the stakeholders they support.

In 2019 the Department of Library Services stepped into the future by introducing its first dedicated client-facing robot, called Libby. Libby started working at the Merensky 2 Library on 28 May 2019. This is an exciting development in terms of client-facing applications. Libby forms part of the department's innovation, as robotics augments and enhances the service portfolio. Libby can answer questions, conduct surveys and display marketing videos. She provides an innovative client service by adding a new and refreshed dimension to the undergraduate student experience.



Student gives Libby the thumbs up



The Vice-Chancellor and Principal, Prof Kupe, meets the library's latest staff member, Libby

The library's self-help tools will contribute to learning taking place as they have an impact on students' academic work and performance. The optimal and effective use of these products is essential to add value to the teaching and learning experience of students. Marketing of all teaching and learning products, services and training sessions is essential; therefore, the library embarked on the #AmazingLibraryRace during October 2019. Students who participated had to find clues at all the different self-help products and services and received a variety of prizes after they completed the race.

The second part of the Amazing Race activity was to attend a lunch-hour session where students learned about the online resources and databases. Included in this initiative was the marketing of all the databases and electronic sources of the library during lunch-hour brownbag sessions. The response was overwhelming. A survey showed that of those students attending the lunch-hour sessions, 24% were from Economic and Management Sciences, 18% were from Humanities and 19% were from Natural and Agricultural Sciences. Students agreed that these sessions benefited them and added value for them.

Another huge achievement for the Department of Library Services concerning teaching and learning was the development of the fully online library course for AIM 101 and AIM 111 on clickUP. The library previously had a one-hour training session for the different AIM classes where students were trained in person, but one hour was too little time to have an impact. The online course teaches students to:

- use and understand the library website effectively and efficiently;
- identify relevant keywords and use Boolean operators;

- know and understand the different types of information resource; and
- locate and evaluate relevant online information resources.

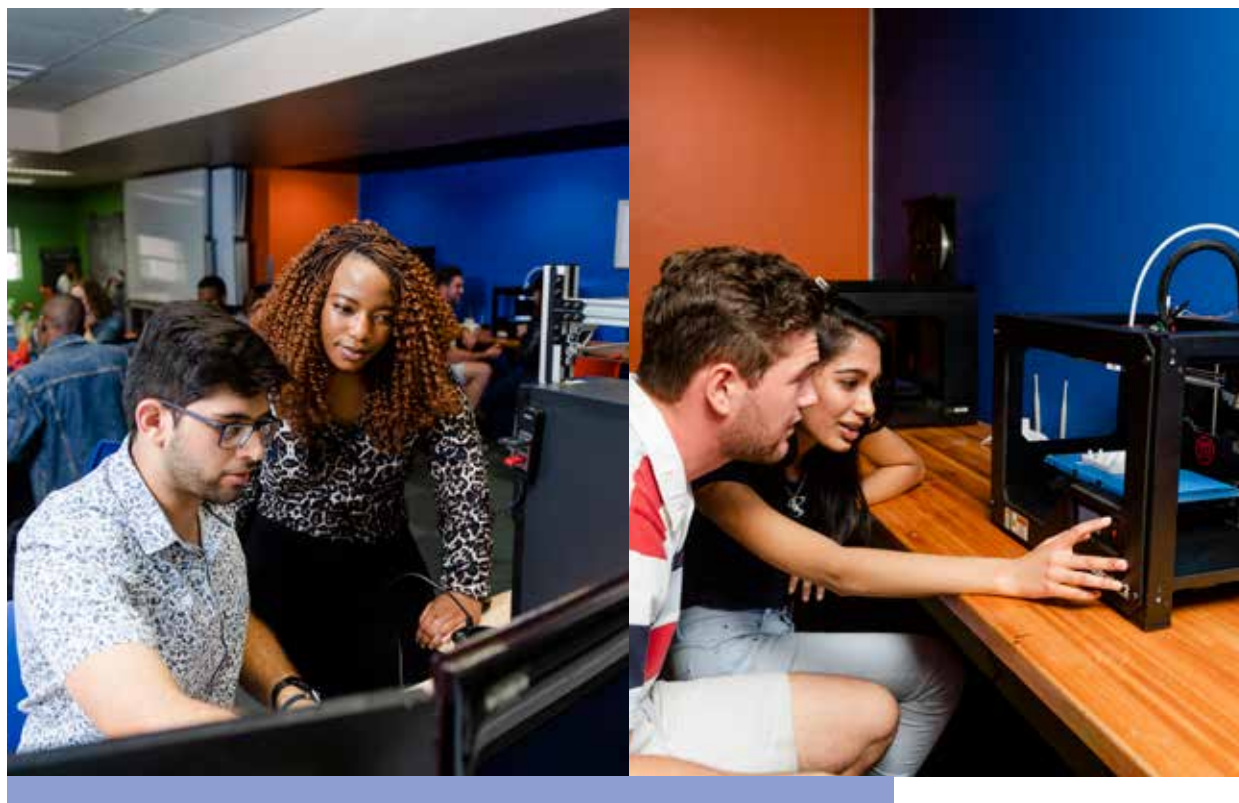
The different types of learning style were incorporated with animations, infographics and videos where applicable. Students are also supported by AIM lecturers who ensure that they complete the online section of the AIM module. Assessment is done after each theme and an examination takes place at the end of the semester. Students can always refer back to the different library themes to prepare for examinations.

The library also initiated successful academic writing workshops in collaboration with the Humanities Academic Writing Centre. Both undergraduate and postgraduate students attended the sessions, and monthly academic writing workshops will continue in 2020.

Furthermore, an information literacy standards document, which assists in providing a standardised information literacy guideline for undergraduate and postgraduate students, was developed to improve the learning of students in the library.



The Amazing Race



Students collaborating in the MakerSpace

MakerSpaces in libraries are one of the mechanisms that allow the cross-disciplinary boundaries of educational innovation to expand and integrate formal and informal learning. This results in overlapping areas of interests that can drive innovation and entrepreneurship across all faculties. This is achieved by offering a creative environment that is genuinely inclusive. Users can adopt a rapid-prototyping mindset with tools and technologies, increasing capacities of staff and students to create innovative new advances within their fields. The technologies used include 3D printing, Internet of Things technology and 3D scanning, among others. With these collaborations, we have seen the development of bioreactors in the natural and agricultural sciences fields that can simulate conditions for student demonstrations. The Department of Informatics has tested concepts of design thinking. The Faculty of Veterinary Science has also used this space to render the teeth of exotic animals for learning purposes. The MakerSpace strives towards

new and innovative ways to teach and learn through a creative laboratory, where people with ideas can get together to make them a reality.

Some interesting library statistics for 2019:

- Undergraduate student enquiries: 52 219
- Undergraduate contact sessions: 2 814
- Undergraduate training attendees: 16 596
- Chat to a librarian (in real time) sessions: 1 415
- Ask a librarian questions: 2 085
- 445 477 views on subject guides
- 2 665 clickUP references added to 230 pages

Department of Information Technology Services

It is the University's aim to ensure that its ICT systems are abreast of international developments, to address the needs related to the 4IR and beyond, as well

as to deploy ICT as a strategic resource for the University's scientific work, its management of knowledge, in interacting with students and staff, and for the efficient administration of the University.

The Department of Information Technology Services, through its Unit for Academic IT, continued the drive to optimise the use of technology in lecture venues and student computer laboratories in order to improve the teaching and learning experience. In 2019, this included the expansion of high-density Wi-Fi coverage to approximately 400 lecture venues across all campuses, the upgrade of audio-visual equipment in lecture venues, and the renewal of technology in student computer laboratories. A project was undertaken to develop UP's first mobile application, which was successfully launched during August 2019. Students and staff can use the app for academic and administrative purposes.

The Wi-Fi infrastructure within lecture venues has made it possible to launch the mobile clicker project in collaboration

with the Department for Education Innovation. Students are now able to use clicker software from their mobile devices, which eliminates the need for expensive single-use clicker systems.

An increasing number of students are making use of their personal computing devices to complete academic work or access the Internet and other UP systems through the Wi-Fi network. This has led to a dedicated Student IT Hub being established to provide technical support to students. The team has been in operation at the Student Centre on Hatfield Campus since 2015 and supports more than 7 000 students per year. An increasing number of official UP scholarship programmes rely on the services offered as a key aspect of their scholarship offering. Some of the services include consultation and advice regarding purchasing options, security awareness, basic laptop usage training and anti-virus and software installations.

During 2018/2019 the Executive approved an updated curriculum structure for the Department of Statistics, which included the expansion of certain modules to host students from a larger number of departments. New modules focusing on digital learning and big data analysis were also added to the curriculum. These changes increased pressure on the currently available student computing IT laboratory facilities. Since the high student numbers could not be accommodated in the available computer facilities, a project was registered with Facilities Management and Services to upgrade the Open Lab open-access facility to accommodate classes of up to 200 students. The upgrade project will be completed in time for the commencement of classes in July 2020.

Poor student literacy has been identified as one of the contributing factors to the sometimes less than satisfactory first-year success rate. A project in collaboration with Prof Norman Duncan, Vice-Principal: Academic, is currently underway to identify a suitable software solution to enhance student literacy.

The inter-campus connectivity project, which was launched in January 2018, will enable the fibre optic connectivity needed to increase capacity as required for Internet and inter-campus traffic. In order to achieve this, the University is implementing dedicated fibre connections from:

- Hatfield Campus to Groenkloof Campus,
- Hatfield Campus to Prinshof Campus,
- Hillcrest Campus to Onderstepoort Campus,
- Onderstepoort Campus to Prinshof Campus, and
- Prinshof Campus to Groenkloof Campus.

All these links have been successfully completed with the exception of the Prinshof to Onderstepoort and the Hillcrest to Onderstepoort links, which will be completed by the end of March and the end of May 2020 respectively. The project will deliver multiple links to all campuses with full redundancies.

University social responsibility

Curricular and voluntary community engagement

Community engagement by the University of Pretoria is embedded in its overall vision statement, which states that the University of Pretoria is committed to discharging its social responsibilities. The strategic objective of community engagement at the University of Pretoria is to enhance and exchange knowledge, skills and expertise in a collaborative manner between the University and society.

Given its unique base of knowledge and skills, the University of Pretoria is in an ideal position to apply that expertise to solving problems identified by communities. Most of the community engagement at the University is curricular – that is, students earn credits towards their degrees while applying their knowledge in the service of the community. Each academic programme is meant to include one community engagement component, unless more are required by a statutory body such as the Health Professions Council of South Africa. Students complete their community engagement in various ways, mainly within a 20 kilometre radius of campuses, working in schools, stimulating entrepreneurship and addressing health issues, etc.

The Community Engagement Unit, led by Ms Gernia van Niekerk, once again provided strategic leadership on community engagement in 2019 with a view to identifying and implementing mutually beneficial projects through collaboration with faculties and students and the nurturing and sustaining of partnerships with communities and community structures. They managed data related to communities, projects, etc, through an online community engagement management system (CEMS – accessed through a portlet on the intranet) and negotiated community placement based on module outcomes or outcomes to be achieved through voluntary service. They ensured safe environments for students by nurturing community relationships; briefing students prior to their going on community engagement, both on the nature of communities and on security in communities; providing maps for safe access to communities; and monitoring all sites regularly. The unit also liaised with national and international community engagement organisations, including the University Social Responsibility Network (USRN).

As a major role-player in areas around campuses, UP can be the 'anchor' for urban development and renewal. The Anchor Strategy project aims to address urban decay around campuses by stimulating the areas economically and addressing social issues. Working in the precinct of each campus brings challenges not encountered in other communities. Work on the Hatfield and Mamelodi campus precincts provided opportunities for curriculum-related community engagement based on community development principles. A series of rehabilitation workshops

was held for the street people in consultation with Brooklyn Police Station. Most of the people subsequently left the street and returned home. Another anchor project in the Hatfield precinct is Reliable House. It is a space that until 2016 was a dumping ground, a centre for drug dealers and occupied by the homeless. By 2019 Reliable House had been turned into a drug rehabilitation and training centre and almost all UP faculties are involved through their curriculum-related community engagement activities.



Reliable House exhibit at USR Day

The work of the Community Engagement Office has expanded from straightforward community engagement and development to include work-integrated learning in some faculties (Health Sciences, Education and Engineering, Built Environment and Information Technology, for example). Community engagement and work-integrated learning are embedded in academic programmes. Both provide a deep learning experience for students, fostering the development of skills for managing relationships, problem-solving and civic responsibility, which in turn provides a competitive edge to students entering the world of work.

In 2019, all faculties were involved in community engagement and development, although the nature of their involvement varied. More

than 29 000 undergraduate students were involved in curricular community engagement projects. There was a total of 272 community engagement modules and students worked on more than 1 000 sites. For example, Viva Village in Mamelodi's Alaska township is a multi- and transdisciplinary community engagement hub in which all faculties are involved, including the fields of psychology, social work, geology, engineering and health sciences (medicine, nursing, occupational therapy, physiotherapy, nutrition and radiology). They worked together with residents, healthcare

workers and clinics to provide a holistic service. The same was done in Zama-Zama and Plastic View informal settlements, and at the pop-up clinic of Salvokop. In addition, veterinary students were involved in rural vaccination stations, and occupational therapy students worked with parents and toddlers on the importance of play in children's development, not only as toddlers, but also for their future when they go to school.

Volunteers from student societies, faculty houses, the SRC (eg RAG), and residences make support to various community sites more sustainable. In 2019, 7 520 students from approximately 126 student organisations were involved in voluntary social responsibility projects. In addition, about 1 000 students requested placements so that they could fulfil bursary requirements.



Voluntary community engagement



USR exhibition, October 2019

University Social Responsibility Day

Currently, UP is the only African university in the global University Social Responsiveness Network (USRN) — an international group of the top 15 universities in the world in this field — and is represented on the Talloires Network. These are both international associations of universities committed to strengthening the civic roles and social responsibilities of higher education. The USRN has

identified the month of October as USR month. This means that all USRN-member universities will demonstrate and highlight their commitment to social responsibility by showcasing their social responsibility activities during this month. The aim is to raise awareness about the positive work achieved by universities through social responsibility and community partnerships.

In October 2019 a week-long exhibition

was held in the Rautenbach Hall on the Hatfield Campus. Posters and kiosks highlighted all of UP's community engagement and social responsibility projects. The exhibition was opened by the Vice-Principal: Academic, Prof Norman Duncan, under whom the portfolio resorts, because of the link between community engagement and the curriculum in the University. It is a major vehicle for curriculum transformation.

Faculty of Economic and Management Sciences

**UG
enrolments
7 712**

**Success rate
82,9%**

**Graduation
2 472**



Ninety-nine going on 100 - preparing to celebrate Faculty centenary

Award-winning work-integrated learning approach

Since 2015 the lecturers of the Department of Human Resource Management (HRM), in the Faculty of Economic and Management Sciences, have won various teaching and learning awards presented by the South African Board for People Practices (SABPP). The SABPP is a professional body appointed by the South African Qualifications Authority (SAQA) as the learning and quality assurer (LQA) for HRM in South Africa. The application of HRM standards developed by the SABPP and industry directs HR teaching and learning practices in South Africa, and South African universities form part of the Council of Higher Education Committee at the SABPP. Various lecturers employed by UP on a full-time or part-time basis are registered as HR professionals with the SABPP, and the following provides an indication of what is done in this regard in the Department of HRM.

The practical-evidence teaching approach followed by UP and the faculty supports the work-integrated learning approach followed by the Department of HRM. Figure 5 is a summary of important role-players involved in this approach.

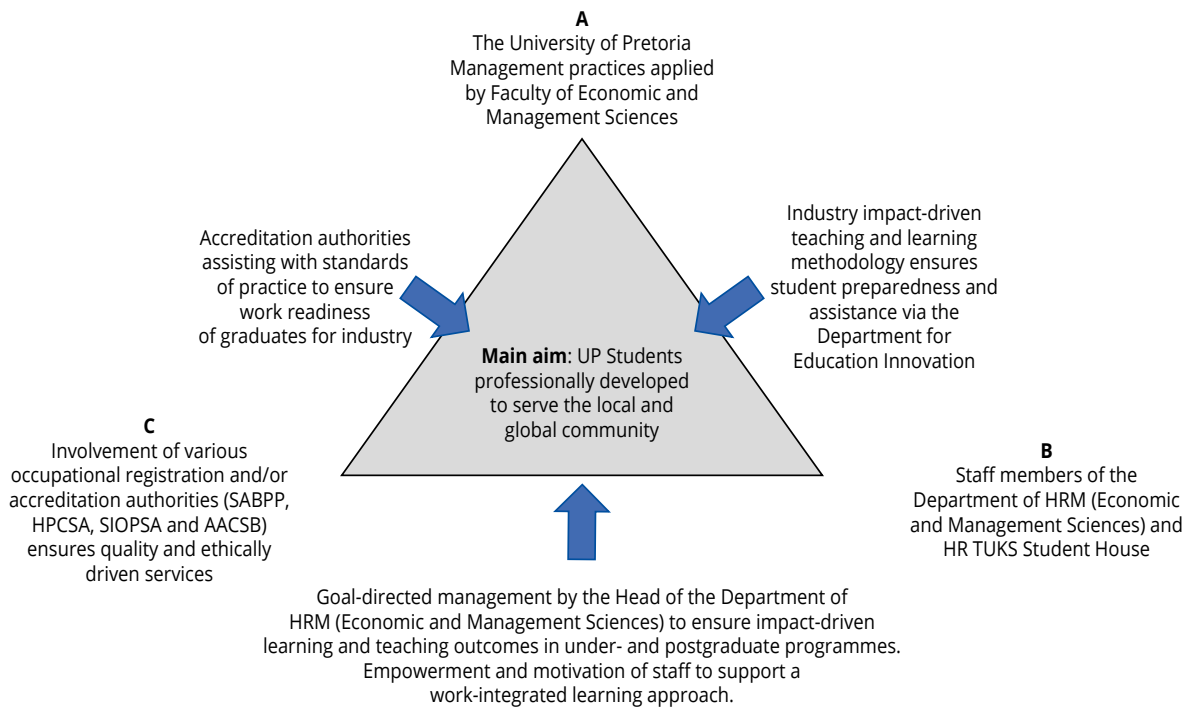


Figure 5: Teaching and learning partnership approach applied in the Department of HRM (Economic and Management Sciences)

The reader may ask: ‘What are the competencies to be demonstrated by a human resources professional?’ The HRM competency model developed by the SABPP and industry, presented in Figure 6, outlines the competencies to be demonstrated in practice (Wärnich, Carell, Elbert & Hatfield, 2018: 583). This model is included in the teaching and learning programmes presented by the Department of HRM and the ideal is for these competencies to be included in the job descriptions and specifications of HR professionals.

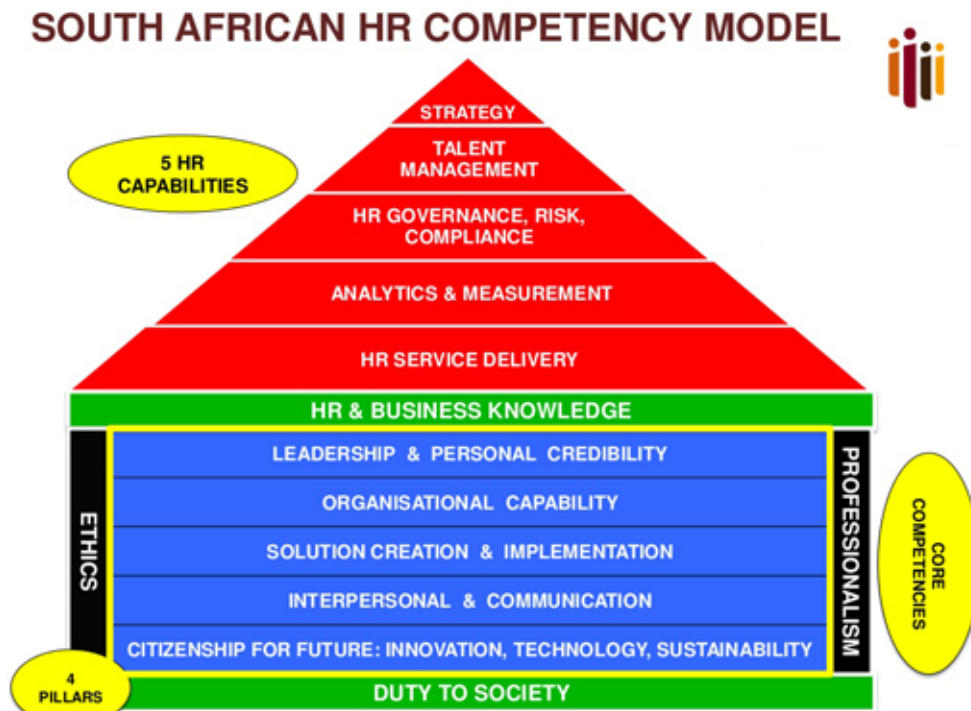


Figure 6: The SABPP South African HR competency model ©SABPP2013

The reader may also ask: ‘What are the main functions to be demonstrated by a human resources department in the workplace?’ The SABPP, in partnership with industry, further developed the SABPP HRM systems standards model demonstrating the required functions – Figure 7 (Wärnich et al, 2018: 35).

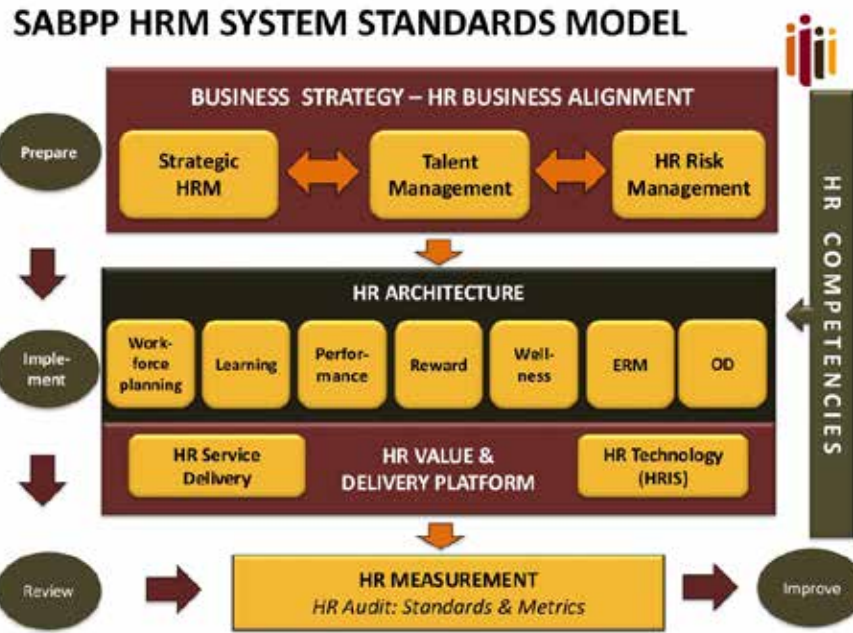


Figure 7: The SABPP HRM system standards

The SABPP gave UP permission to include the models in figures 6 and 7 in their teaching and learning programmes. In practice, the SABPP audits organisations against these standards, and consequently UP is obliged to demonstrate their competence according to these models. This means that lecturers must understand and have practice experience before they will be able to prepare the graduate for the workplace.

Various teaching awards received by the department and lecturers in the department since 2015 provide evidence of the excellent management and teamwork practices in the faculty, and the Department of HRM is proud to be part of this larger team. To be eligible for these awards, academic HRM departments across South Africa have to provide evidence to the SABPP of the application of the national HR standards in their teaching and learning practices, and the evidence presented is evaluated against set criteria for the awards. The contributions of student hours are invaluable when considering the criteria for the awards. Over the last few years, the Department of HRM, its students and staff have received the following awards:

- Best HR Standards Academic for the

Year (2015/2016) – Mr Sakkie van Greunen

- Best HR Standards Academic of the Year (2017/2018) – Mr Sakkie van Greunen
- Best HR Standards Student of the year (2018) – Mr Francis Wilkinson
- Best HR Research or Dissertation of the Year (2019) – Mr Sakkie van Greunen
- Best University in HR Standards Alignment Award – 2019



SABPP awards for UP

The awards listed above demonstrate UP's commitment to being a leader in the teaching and learning of graduates for the HRM industry now and in the future. The next photo shows the two SABPP awards bestowed on UP during 2019.



Mr Sakkie van Greunen and Prof Karel Stanz receiving SABPP awards during 2019

The Department of HRM also works closely with the Department for Education Innovation, specifically Ms Elmien van Amerom, to equip new academic staff in the faculty with the necessary skills. The photo below demonstrates a teaching and learning training session (TAP). Mr Sakkie van Greunen, winner of several of the awards mentioned above, presents and shares his teaching and learning experience after 44 years in the workplace with new staff members. The training includes the use of aspects related to the practice of presentation skills and the

value of lesson planning, presentation skills, use of faculty study guides, factsheets, various checklists, etc.



Mr Sakkie van Greunen

The Department of HRM is currently rolling out the Association to Advance Collegiate Schools of Business (AACSB) learning goals to enhance teaching and learning and be even more effective in providing industry with graduates who demonstrate work readiness.

The Department of HRM strives to ensure that its graduates will excel in their respective industries in the future, and work-integrated learning is an inherent part of this project.

Reference

Wärnich, S; Carell, MR; Elbert, NF & Hatfield, RD. 2018. *Human resource management in South Africa*. Hampshire: Cengage Learning, EMEA. ISBN: 978-1-4737-5112-5.

The invisible made visible: Industry collaboration on BCom (Marketing Management)

Sales-related jobs are among the top five growing occupations according to the World Economic Forum's *Future of jobs* report (WEF, 2016). In South Africa specifically, sales skills rank among the most sought-after. This finding can be explained by the growing challenge for organisations to survive at highly competitive levels, across various industries within the economy. The

realities of technology and increased competition suggest that salespeople are more important now than ever before. For this very reason, the Department of Marketing Management views its Personal Selling and Account Management module as critical to prepare students for the world of work.

Unfortunately, the general sentiment around a module dedicated to personal selling among students is often one that generates very little excitement, despite its being a fundamental module in the third year of the undergraduate BCom (Marketing Management) curriculum. This view was confirmed in the first class in 2016, when not one student out of a class of 87 responded in the affirmative to the question: 'Who would like to go into sales one day?' It was with this in mind that it became clear that a redesign of the module was necessary, not only to enhance the experience for students, but also to highlight the value of this module, which was evidently not visible to the students, especially as, more often than not, marketing students kickstart their careers in a sales environment. In 2018, the Personal Selling and Account Management module was redesigned with a fresh market-driven approach that was facilitated by Ms Jade Verbeek from the Department of Marketing Management, in order to create student experiences that would be relevant to the needs of the industry.



Ms Jade Verbeek

Collaboration with an industry partner got underway in 2018 to provide students with transformational learning and real-life sales experiences, enabling them to engage actively with and reflect on the theoretical knowledge gained in class, thereby preparing them for the professional world of work. These learning experiences took place both through in-class theoretical sessions and out-of-class practical sessions. The in-class sessions were primarily content-driven, allowing students to gain theoretical knowledge, while the out-of-class sessions were more practice-focused, allowing students to put the theory into practice. Some of the practical sessions included video-recorded client-specific role-play exercises to promote self-evaluation and to strengthen confidence as a salesperson. The module also included field trips to the industry partner's factory and distribution centres to enhance product knowledge – considered a key element when selling to customers. One of the most valuable outputs from the industry collaboration, which received overwhelmingly positive feedback, was that each student was afforded the opportunity to be placed in a real-life sales environment (ie the industry partner's retail stores), enabling him or her to shadow a sales representative in order to experience the reality of sales and to learn through observation and practice.

Student learning was further expanded when students were provided with an opportunity to apply for an internship with the industry partner. Upon completion of the module, 30 students were invited to an interview, 12 were selected for internship positions in 2018, and finally five of the 12 were offered permanent positions in 2019. As a reward for the completion of the module, the industry partner awarded cash prizes to the sales students who performed well, with the top student winning an all-expenses-paid trip to Bologna, Italy, with the industry partner's executive team, to attend an annual convention within the industry.

The value of collaborating with an industry partner for the specific third-year module,

was three-fold. First, from a student perspective, the changes introduced in the module achieved the overall module goal of changing students' perceptions about sales, to get them job-ready and open this area up as a possible avenue for a future career. Second, from a departmental perspective, this module created an opportunity to collaborate with an industry partner that supports the academic offering and adds practical value to theoretical content. Third, from the industry partner's perspective, sales consultants with good training in sales could be appointed as they already had some exposure to the consultants before the interviews were conducted.

In summary, the introduction of these new teaching initiatives served the module well. This is evidenced by: (a) changed perceptions of students about sales owing to job-shadowing opportunities and positive industry experiences; (b) a 100% pass rate in the module; (c) the number of internship applications and eventual permanent appointments; (d) continued client partnership and UP becoming a preferred supplier; and (e) international exposure for the top-performing student in the module.

Analytics and real-world exposure improve module pass rate

OBS 210 is a core module for all degrees under the Department of Business Management and serves as a service module to a number of qualifications from other departments in the Faculty of Economic and Management Sciences, as well as other faculties. The purpose of this first-semester, second-year module is to equip students with the ability to participate in functional management of logistics in an enterprise.

As the pass rate for this module has been under pressure for some time and given the large student enrolment numbers, it was classified as a high-risk module in terms of the definition applied by the Faculty of Economic and Management Sciences.

To improve the pass rate, a multi-pronged approach was taken that resulted in the pass rate increasing by nearly 20 percentage points to 86% in the first semester of 2019. A large contributor to the success of the module was the Department for Education Innovation's involvement and assistance, especially pertaining to the assessment techniques and analytics applied to identify problem areas and assist with group work.

As most students are not familiar with the nature and content of supply chain management as a subject area, it was decided to use more practical case studies and examples during lectures to introduce context and explain concepts to the students, while at the same time facilitating and developing critical thinking in this module. To further increase students' knowledge and illustrate the application of module content, an assignment based on a real-world problem was conceptualised, thus introducing problem-based learning (live case study). To launch the assignment, a guest speaker gave a presentation on supply

chain management principles that are applicable in his or her specific business and the problems that had been encountered. In the assignment, students had to apply the subject knowledge they had acquired during the semester to present viable and feasible solutions to the problems experienced in the business of the guest speaker. To execute the assignment, students were randomly assigned to groups of six by the lecturers to simulate the real-world situation of working with team members whom you cannot select. The submission and assessment of the assignments were done online and a rubric was used to mark them. The students received a group mark for the assignment and then had to evaluate each other's contributions to the group project using the online iPeer tool. The randomly selected groups turned out to be the most effective way to elicit students' participation, as they knew that their peers, who were mostly not their friends, would evaluate their contributions at the end of the assignment.

In addition, to assist the students to understand the concepts and prepare for the semester tests and the examination, tutor classes were presented before the tests and examination where techniques pertaining to case studies were specifically addressed. The layout of the semester and examination papers was revised to include the assessment of appropriate AACSB learning objectives, and specific attention was paid to formulating questions clearly. The long questions in assessments consisted of case studies, where students had to explain the theory and then apply it to the case studies. These case studies included real-world scenarios, thus bringing the world of work closer to the lecture halls.

In summary, including examples from practice as well as the assignment that provided context and real-world exposure based on the presentation by the guest speaker increased the students' knowledge and ability to apply concepts that they had mastered theoretically during the semester, resulting in the vast increase in student success.



Ms Sharon Badenhorst and Ms Nicole De Abreu

The beauty of infographics and technology

As in previous years, Dr Alex Bignotti faced a large cohort of students (ca 400) who enrolled for International Business Management (a third-year undergraduate module) in 2019. Teaching such a large group presented him with the daunting task of making the content of the module interesting and engaging. He also faced concomitant difficulties, such as the module content being quite challenging, students still relying mainly on mnemonic study techniques and students not being up to date or interested in the current state of international affairs. In addition, he was concerned about final-year students' graduate attributes and wanted to create opportunities for them to hone their analytical, public-speaking, written-communication and teamwork skills, as well as their ability to summarise large amounts of information meaningfully. Finally, he was aware of the need to give students more assessment opportunities.

In light of the above, and under the guidance of Dr Sanet Haupt from the Department for Education Innovation, the lecturer introduced several interventions in 2018:

- Students did a group assignment on the market screening process, whose main output was an infographic that had to be uploaded online. The objective was to choose a South African firm and conduct a market screening analysis, which is the core theoretical framework of this module, and which helps a firm to identify which international markets to expand into and choose a suitable mode of entry. In groups of eight, students had to (i) submit their work on clickUP in the form of an infographic (including two pages of more in-depth explanation and references to the sources used); and (ii) present one phase of their market screening process in class. *Purpose:* To build teamwork skills, hone verbal and written communication skills, and develop analytical and visual-summary skills.
- The McGraw-Hill Connect platform was adopted, which formed the basis for online assessments on the module's theoretical concepts, and which students could use for non-compulsory adaptive readings before class. *Purpose:* To use the knowledge that the students' currency is their marks, which aided and encouraged students to prepare for class and master each unit's concepts before proceeding to the next unit.
- The lecturer created a Google+ page where students shared some of the international news they read as part of their group assignment on the market screening analysis. *Purpose:* To enable students to gain exposure and become knowledgeable about current international events by the end of the module.
- Lastly, the lecturer used online clickUP quizzes on the international news shared by fellow students on the Google+ page. *Purpose:* To stimulate students to read the international news shared by the groups.

Dr Bignotti's findings were insightful in terms of evidence of improvement in learning and success. Students who voluntarily

completed the McGraw-Hill Connect adaptive readings performed better in written assessments (semester tests and examinations). As a result of the intervention, he could also use current international affairs more successfully in the classroom because most students were now more knowledgeable about them. The online quizzes – both on theory and international news – while challenging, helped students to boost their semester marks. In most cases, the group assignment also assisted students to improve their semester marks. The quizzes also aided them to make sense of the theoretical concepts learnt through individual reading and during lectures by connecting them to real-life events and their chosen South African firm's situation.

How did this impact on students? Dr Bignotti sent out an anonymous survey to the entire class. Most students gave positive feedback on the group-assignment infographic and in-class presentation, as well as on the international news quizzes. A few students even mentioned that they had started using the newly acquired infographic skill to make study notes and complete assignments for other modules. Students found current international events more interesting and a few of them even mentioned that they now read international news daily. Students with an interest in international business management (as a future career or a component thereof) expressed greater confidence in navigating the international business arena after completing the module. Students also either developed or improved graduate attributes in the group assignment: the infographic as a visual analytical and reporting tool, analytical skills applicable to international business scenarios, and teamwork skills (eg how to motivate peers, how to deal with different views and personalities, how to divide and delegate work).

Did this produce any benefits for the lecturer, besides the satisfaction of seeing interest increase in his discipline and having his students engage actively and improve their learning? Having the assignments submitted on clickUP saved paper, and marking infographics online using a clickUP rubric allowed him and the tutor to mark fast and anywhere. So, yes, there were efficiency gains – that is the beauty of infographics and technology.



Dr Alex Bignotti



The faculty of choice for teachers

Faculty of Education

**UG
enrolments
6 550**

**Success rate
90,9%**

**Graduation
1 775**

Developing leadership skills for middle management in the TVET sector

In 2019 the Faculty of Education formed a partnership with the Technische Universität Munchen (TUM) in Germany to adapt the Postgraduate Diploma in TVET to develop strategic leadership and management skills in principals and campus managers of public TVET colleges in South Africa. The partnership was funded by a DHET-EU grant for the Faculty of Education, and by GiZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) in South Africa.

The development of the Postgraduate Diploma in TVET kicked off with stakeholder engagement involving the DHET, SACPO, TVET colleges in South Africa, and industry to obtain maximum participation in the success of the programme, which was envisioned to be an inquiry-based learning programme emphasising the development of leadership skills through preparation, engagement and consolidation of learning on a blended learning platform. The Postgraduate Diploma in TVET represents a modern approach to curriculum design

and development by incorporating the following innovative components to presentation, instruction and assessment.

The PgDip (TVET) was developed in a blended-learning format and designed around students who work full-time and have limited time for study. The programme consists of four contact sessions of one week each, and each week is preceded by four to eight weeks of activities aimed at preparing students to engage with each other and with lecturers during contact sessions. The online component is presented on the Blackboard platform (clickUP) and consists of online videos, podcasts prepared by lecturers and specialist speakers, narrated PowerPoint slides, and developmental activities that promote the development of professional and academic commitment through creating purpose, meaning and self-awareness. In addition, course participants undertake a one-week study visit to Munich, Germany, where they engage with leaders in the field of technical vocational training, industry and the School of Education, TUM. For long-term sustainability, the UP-TUM team is connecting with local industries to complete the study visit component of the programme in South Africa.

Instruction is organised around a three-pillar mentoring approach that consists of individual mentoring to each course participant: online and during contact sessions; peer-mentoring (groups of six to eight managers from different colleges in South Africa), and KPA expert mentoring. The KPA expert mentoring framework was developed by Prof Daniel Pittich (TUM), Prof Salomé Human-

Vogel (UP) and Prof Pieter du Toit (UP) in collaboration with TVET consultants. In this model, there are four key performance areas in which TVET colleges have to organise their work, and mentoring is provided specifically in these areas.

Assessment in the Postgraduate Diploma in TVET makes use of a blend of formative and summative assessments, but no tests or examinations are scheduled. Instead, students have one year in which to (i) complete coursework modules, (ii) work on a strategic plan for their TVET college, which has to be presented to their colleagues, and (iii) complete an action research project that describes their professional and academic development in the course over one year.

As is evident from the design of the Postgraduate Diploma in TVET, a project-based model of inquiry-based learning was selected and embedded in all components of this course, making it the first NQF Level 8 qualification offered in the Faculty of Education that is inquiry-based in its design, and where authentic assessment is used exclusively to monitor students' academic progress. In addition, the course assumes that engagement is maximised when instruction is experienced as personally meaningful, so a consistent effort is made for the explicit development of professional identity and meaning.

The first intake of 30 TVET managers enrolled with full bursaries to complete the course in one year.



Team at the launch of the Postgraduate Diploma in TVET

Robotics and coding for grades R to 9

During 2018, the Department of Basic Education embarked on a focused initiative to support the development of digital competencies for teachers and learners. This was in response to calls from entities such as UNESCO, the World Economic Forum and the South African Government to invest in the preparation of the youth for the fast-changing technological world and its challenges. During 2019 the DBE embarked on the design of a curriculum to address the development of digital skills for learners from Grade R to Grade 9. The Digital Skills Framework is based on four pillars:

- application skills,
- Internet and e-communication skills,
- data and information management skills, and
- computational thinking skills and coding.



Sameul Mampa, Jody Joubert, Annèl van Rooyen, Gontse Mthelebofu and some of the robots in the Living Lab for Innovative Teaching

The Faculty of Education currently embeds the response to these requests covertly in a variety of activities, packaged as a gamified intervention. Activities are managed within the Living

Lab for Innovative Teaching research unit's Collaboratorium in the Badges4Edu initiative. Activities are designed by lecturers in different modules addressing elements of the module content, but also linking to different sets of digital competencies. Successful completion of an activity generates a virtual badge. A collection of badges culminates in a Digitally Competent Teacher certificate. A set of these badges is linked to the Computational Thinking and Coding pillar of the Digital Skills Framework. These badges reside in the newly established Faculty of Education Coding and Robotics Club. This club is open for all staff and students in the faculty. Examples of badges are Coding4Kiddies, Robots4Gaming, CodingClub4Kids and DynamicModelling. All activities are interactive and hands-on, but with a strong educational underpinning. This implies that participants experience coding and robotics hands-on, but also interrogate the educational approach, inter-disciplinary application possibilities, development of 21st-century skills, computational skills and underlying coding concepts. The following activities were presented:

1. Coding4Kiddies workshops for staff and students in the faculty, for the intermediate phase students, and for two different groups of teachers. This badge focuses on teaching computational thinking through robots to grade R to 2 learners.
2. A Robots4Gaming activity for staff and students. This badge focuses on how learners can create their own games using simple robots and coding.
3. A CodingClub4Kids activity for the fourth-year information technology student-teachers. During this activity, students design a coding club for a school that can address the digital skills through inter-disciplinary activities.
4. A DynamicModelling activity for the computer integrated education honours students. This badge focus on how coding and robotics can strengthen the use of computers as dynamic modelling tools in different grades.

Integrated Student Engagement and Support Office

The Faculty of Education is highly committed to providing integrated support to students through the Student Engagement and Support Office (SESO). Launched in 2019, the SESO's philosophy is based on the maxim that 'You cannot always help everyone, but everyone can help someone' and activities are based on involving staff and students in the Faculty of Education to provide support to students on a wide range of topics.

Professional identity

Mr Lindokuhle Ubisi (Department of Educational Psychology) and Tapiya Chimomuyo (Centre for Sexualities, Aids and Gender) held a workshop on how teachers can address LGBTQ issues and sexualities in their classes through better understanding of issues of sex and gender. Later in the year, Prof Rinelle Evans (Humanities Education) and a guest lecturer from Nelson Mandela University facilitated a workshop on professional and academic language skills for the classroom.



Prof Salomé Human-Vogel, Prof Rinelle Evans, Dr Talita Calitz and Prof Chika Sehoole, Dean

In 2019 the SESO facilitated the presentation of several workshops by staff members who volunteer their time and expertise to support the students. The workshops were presented under the following themes: (i) 'Academic success', (ii) 'Language', (iii) 'Digital literacy', (iv) 'Well-being', and (v) 'Professional identity'.

Academic success

The year started with a workshop presented by Prof Rinelle Evans (Humanities Education) on understanding the university as a system, the history of UP, how university differs from school, and typical conventions and procedures when dealing with staff and lecturers. This workshop was followed by one entitled 'Hard work beats talent' offered by Ms Marica Foxcroft (Department of Educational Psychology) and an orientation to the Groenkloof Campus offered by Ms Elsie Mahlangu (FSA).

Well-being

The year was concluded in October (Mental Health Awareness Month) with several workshops focusing on well-being. Mr Alex Norton (psychologist) presenting a workshop for students on recognising when someone is at risk of committing suicide, and basic skills for self-care when feeling stressed and overwhelmed. Dr Talita Calitz (Department of Humanities Education) offered students a workshop on the basic skills of applying a growth mindset to their studies and personal life.

Students receive a certificate of participation after workshops in addition to online badges on the clickUP learning management system. In 2020, the SESO plans to expand its offerings of workshops and to include a morning helpdesk where students can gain easy access to the information they need for academic success.

Faculty of Engineering, Built Environment and Information Technology

**UG
enrolments**
11 260

Success rate
81,2%

Graduation
2 340



Engineering 4.0 is set to take transportation into the future

The University's state-of-the-art Engineering 4.0 Building, which was nearing completion at the end of 2019, will host Africa's first independent transport reference and testing facility. It will also be a research and training hub for smart transport systems. The building, which is close to UP's Future Africa Campus in Hillcrest, is the result of a partnership with the South African National Roads Agency Limited (SANRAL) and the Council for Scientific and Industrial Research (CSIR).



Engineering 4.0 Building

In terms of the United Nations' 17 Sustainable Development Goals (SDGs), innovation, infrastructure, and sustainable cities and communities are critical for developing any economy. This new hub is aimed at installing UP as a leader in this field and

making a distinct contribution to these goals.

It aims to be a transportation research hub that will foster interdisciplinary research in the wake of the 4IR. Beyond its academic mandate, Engineering 4.0 will function as a hub for smart cities and transport. It will share its vast resources in technology and data sciences with all faculties via the Future Africa Campus, which is a platform for developing interdisciplinary and transdisciplinary research networks within the University and with the global research community.

The structure is built in three parts. SANRAL's National Roads Materials Reference Laboratory will be the site for the independent reference testing of materials for the road construction industry. Such testing will characterise materials for appropriate construction. The independent materials reference and testing facility will be the first in Africa.

There is also a laboratory for the training and certification of laboratory technicians and engineering students. The objective is to ensure that materials testing in the field is up to standard and that the technicians who conduct the testing are capable and certified to do such tests with a high degree of accuracy.

According to Prof Wynand Steyn, Head of the Department of Civil Engineering, students will be exposed to hands-on research activities in these laboratories, supporting theoretical teaching. This combination will enable a deeper understanding of the civil engineering curriculum in preparation for students' working lives as civil engineers. The new laboratory supersedes the existing



TuksNovation

one with a modern facility that is much larger and better laid out for optimal working conditions. The location inside a natural forest on campus supports a positive learning environment.

The Engineering 4.0 Building also has an accelerated pavement testing (APT) facility and active traffic track for real-traffic testing. This unique facility allows one to characterise pavement design and construction while using data obtained from the active traffic lane to model many aspects in transportation systems. The proximity of this hub to the N1 and N4 highways is unique, as adjacent to the facility is an active test lane on the highway. This is a first for Africa, where real-time data will be collected to measure and model transport systems and design and test Internet of Things sensors and devices. Such data and models will support the planning and design of future transportation systems and support cost-effective and innovative pavement engineering for Africa's infrastructure development.

SANRAL decided to initiate and support the project, as it allows for research, as well as the training and education of road pavement specialists on all levels (technicians to engineers with PhDs), and combines the talents of UP's students and staff with those of the CSIR. It also brings researchers from South Africa and across Africa together in a collaborative and interdisciplinary work approach. This will support the economic growth of South Africa through improved understanding of vehicle-pavement interaction.

Construction of the building began in August 2018 and completion is expected in February 2020.

The role of artificial intelligence in teaching and learning

As we move into the 4IR, artificial intelligence (AI) has started to play a vital role in the way we teach and learn. According to Prof Nelishia Pillay, Head of the Department of Computer Science in the Faculty of Engineering, Built Environment and Information Technology, several innovations can be implemented in the near future. These include automated tutors and teaching assistants, genetic programming and learning analytics, chatbots and bookbots.

Students can receive individualised tuition through the use of intelligent tutoring systems. Innovations that are already in use internationally include Jill Watson, an automated teaching assistant at the Georgia Institute of Technology (Georgia Tech) in Atlanta, Georgia, in the USA, that provides responses to student queries with a 97% accuracy rate. Pearson and McGraw-Hill, a corporation based in New York City that provides international educational services, has embraced this innovation as well with its development of Smartbook 2 and Pearson Mastering, two AI systems that provide individualised feedback to learners.

Artificial intelligence techniques, such as genetic programming, have also been used for the automated design of learning environments, including web-based courseware, digital learning environments, online courses and pedagogical agents. It has also facilitated automated assessment. In China, AI-driven systems are used to automate the assessment of essays at schools, while Pearson has incorporated automated assessment in writing and mathematics learning tools. Automated assessment has also made an impact on the training of surgeons, psychometric testing and talent assessment.

Learning analytics, which uses machine learning techniques, has proven to be effective in predicting student learning difficulties and providing support to students. This technique can predict whether a student will fail or pass, the grade the student will obtain, and specific learning difficulties a student will experience. Such techniques are already being incorporated in learning management systems: for example, the predictive analytics tool that forms part of Blackboard (clickUP), used at UP.

Chatbots are also starting to play an important role in teaching and learning. A chatbot is basically a computer program that fundamentally simulates human conversation. It allows a form of interaction between a human being and a machine, which takes place via messages or voice commands. It is programmed to work independently of a human operator. While early chatbots were text-based, the more recent iterations can converse using natural language and use AI techniques to learn and adapt their communication to the needs of the particular student with whom they are conversing.

Chatbots are used internationally to provide students with advice on university operations and logistics, such as lecture venues, admission procedures, timetables and financial advice.

Cornell University in New York has employed CourseQ for this purpose, while Georgia State employs 'Pounce', a custom virtual assistant, and Deakin University in Melbourne, Australia, employs 'Genie', a smart personal assistant. At the University of Tampa in Florida, chatbots provide students with mental health support. They have also been used to assist students to learn a language by conversing with the student in the target language.

Another area in which AI and robotics are contributing to education is the automation of tasks in libraries, making the concept of a smart library a reality. These tasks include automated cataloguing, classification and periodical indexing. This has facilitated 24-hour self-borrowing, return and renewal. Artificial intelligence and robotics have also played a role in intelligent warehouse management. Bookbot can locate a selected book from millions of books on shelves in only five minutes.

In the University of Pretoria's Department of Library Services, a robot called Libby became the first humanoid to be introduced in a library in Africa. Libby joined the staff of the Merensky 2 Library in 2019 as a library consultant, advising students about the library, telling them where to find specific books, directing them to the relevant subject librarian, and marketing the library.

'As the role played by AI in teaching and learning increases,' says Prof Pillay, 'so several challenges are identified'. One of these is how to prepare students and graduates for the advent of AI; another is how to promote AI literacy.

An initiative to address this challenge has been launched at the University of Pretoria in the form of the Artificial Intelligence Student Society. This is a multidisciplinary student society that promotes AI literacy and innovation. It was founded in February 2019 by three students from the departments of Philosophy, Industrial Engineering and Computer Science under the guidance of Prof Pillay, and has more than 200 members from various disciplines within the University. The value of a society such as this in the University environment lies in the crucial role it plays in debunking the fear-driven misconceptions held by the population about the threat of AI being incorporated into our daily lives.

A second initiative at the University of Pretoria, in which the Department of Computer Science played a role, in collaboration with the Department for Education Innovation, is the development of AI PODs (professional online development tutorials hosted by Enterprises UP), which will be incorporated into the University's R4W project. They will provide students with an overview of the role AI will play in their chosen career. The ten AI PODs that have been developed cover an introduction to AI and the impact that AI is making in careers related to qualifications in each of the University's nine faculties.

Innovations such as these will certainly ensure that the University of Pretoria can take its rightful place in using disruptive technologies to enhance effective teaching and learning.



Prof Nelishia Pillay

Enhancing learning through the visualisation of knowledge

The 4IR is introducing revolutionary advances in teaching and learning, as well as in science and technology. The ability to apply and optimise digital technologies requires users to have the knowledge and skills to use and apply these advanced technologies effectively. From both a commercial and an academic perspective, digital technologies allow one to embrace digital transformation while enabling a world of visual and experiential learning to enhance learning, skills and knowledge.

Within this context, teaching and learning entails the development of cross-boundary knowledge and requires new approaches to knowledge generation and transmission, as graduates are required to apply knowledge in and outside work structures. Research conducted in the Department of Informatics has shown that the transfer and creation of knowledge is more effectively achieved through the visualisation of knowledge.

The aim of this research is to evaluate the impact that knowledge visualisation has on knowledge conversion and recall. This is particularly relevant to blended learning in the sense that blended learning designs are defined by the proportions of face-to-face versus online coursework, which includes media-rich elements. By making use of a knowledge visualisation framework, learning may be optimised, and knowledge and skills improved.

The purpose of knowledge visualisation in a programme-design context is to scale blended learning and develop learning experiences that take full advantage of digital platforms.

Knowledge visualisation can be described as the use of visual representations to improve the creation and transfer of

knowledge, using available visual resources to create, integrate and administer knowledge. It differs from information visualisation, which explores large amounts of abstract data to derive new insights or make the stored data more accessible.

Two key short-term trends have been highlighted to accelerate the adoption of technology in higher education. These trends focus on the redesign of learning spaces and blended learning designs. A focus on virtual learning spaces is required as many online platforms have bundled solutions to facilitate team-based learning and synchronous meeting spaces. Emerging learning spaces, which are programmed in extended reality, have the potential to create more engaging and personal experiences for learners than any current online course design developments.

A number of key considerations have been identified when using the technique of knowledge visualisation to optimise knowledge recall. These include the following:

- Meet the audience's need by considering for whom the visualisation is intended
- Facilitate audience engagement
- Strive for graphic excellence by avoiding irrelevant elements that may distract the audience from the content of the topic
- Only extract the essential components and their relationships from a body of knowledge
- Ensure that the level of abstraction is aligned to the audience's prior knowledge
- Strive for simplicity by minimising the number of concepts in each level of visualisation
- Strive for clarity by ensuring that the visualisation is not ambiguous
- Strive for consistency by ensuring that visual elements such as colour, symbols and shapes are the same for similar kinds of information
- Present the overview and the detail (the boundaries around elements and the connections to other elements should be clear)
- Clearly show the relationship between concepts
- Establish a recognition-based approach to interpreting images by associating visualisation with the real world, instead of one that requires recall
- Ensure that there is an accompanying legend for the symbols used
- Strive for visual integrity by ensuring that the representation does not distort the underlying data or create a false impression or interpretation of that data

Researchers in the Department of Informatics use a technique known as eye tracking to evaluate knowledge visualisation as a

means of optimising knowledge recall. Eye tracking is the process of measuring either the point of a user's gaze (where one is looking) or the motion of the eye relative to the head.

By measuring knowledge visualisation against a control group of existing knowledge visualisations found in handbooks, module materials or the Internet, eye tracking provides rich data about where one is visually focused, whether it is on a mobile phone, tablet or web interface. Gaze plots are used to show a user's sequence of fixation and how long a user was fixated on one point. Gaze videos, in turn, give an animated view of the gazing pattern. Heat maps then indicate which parts of an object users looked at and how intensely they looked at them. Data for multiple users may then be overlaid to compare the experience of different user groups.

The transfer of knowledge is a core process in knowledge management. A key objective of managing knowledge is to make it visible so that it can be better accessed, discussed, valued and managed. Knowledge visualisation therefore succeeds in transferring insights, experiences, attitudes, values, expectations, perspectives, opinions and predictions, thereby enabling students to reconstruct, remember and apply the insights they have gained.



Researchers in the Department of Informatics

Interactive learning through gaming simulation

Lecturers in the Department of Civil Engineering and the Department of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology have initiated a unique approach to the teaching of integrated land use and transportation planning at an undergraduate level through the use of a gaming simulation.

Preliminary research in the field of interactive teaching and learning revealed that simulation-based approaches particularly benefit students who prefer visual and active learning. The lecturers therefore developed a computer game, UPTown, as a bespoke application that integrates commercial software with a locally developed interface to simulate the development of a hypothetical town over a 30-year timeframe. Students take on the specific roles of either a public sector planner or a private sector real estate developer during the game. This allows them

to explore the problems of conflicting objectives and to discover the value of cooperative planning in the land use and transport development process.

The game was designed specifically to help students explore the linkages between infrastructure investment, land development, and city efficiency and equity outcomes by guiding the spatial and economic development of a hypothetical city over time. Its innovation lies in the way it asks students to simulate the decisions of both public sector planners and profit-seeking developers, and the interactions between them. This allows them to discover the value of collaboration and integration, not only across professional disciplines, but also between the public and private sectors.

The students who take on the role of planners are forced to consider land-use development and transport demand, and are encouraged to start the game by developing a spatial development strategy for managing the growth of the town for the coming decade to ensure coordination of zoning and investment decisions. The developers, on the other hand, have the ultimate objective of maximising the profits derived from developing and selling or renting out building stock. The program simulates land values and construction costs based on the size, type and location of new development, and then calculates the developers' profits based on the floor space that is actually occupied.

It is precisely the linkage between public sector planning and private sector investment decisions that gives the game its collaborative nature.

Neither the planners nor the developers can control each other's actions. The actions of a third group of role-players – private households and businesses – are not controlled directly by either group, but are simulated externally. However, a key feature of the game is that it takes the performance of both planners and developers into account when determining the overall performance score for the town. Thus, each group benefits from the other group's reaching its objectives.

The game is included in the curriculum of the final-year infrastructure planning course. This allows it to build on prior knowledge of technical topics, such as traffic engineering, engineering economics and numerical methods, while drawing on a more mature, complex understanding of societal issues. The course is presented as a mixture of lectures, and discussion and

practical sessions, with six contact hours a week spread over 13 weeks.

The classes, which are co-taught by lecturers from both the Department of Civil Engineering and the Department of Town and Regional Planning, introduce theoretical concepts and start to explore their implications for planning practice in South Africa. The in-depth exploration of issues is left for the practical sessions, which is where the simulation game plays an important role.

The assessment of the students' performance reveals that the game has significantly enhanced their mastery of the course content. According to Prof Christo Venter of the Department of Civil Engineering, students who faced more complex and open-ended tasks, such as those of a planner, as opposed to those of a private sector developer, performed better, reaching higher levels of competence earlier in the game. 'It appears that being forced to grapple with complexity and a larger action space leads to a better grasp of the material and an improved achievement of the learning outcomes,' he remarks.

The lecturers found the game's insistence on cooperation as a mode of interaction between private and public sector actors to be particularly useful as a learning strategy. This is also a

key innovation over existing urban simulation software as it allowed the students to experience the benefits of collaboration with those who have different objectives from their own. This is a key skill that is required in a multidisciplinary environment such as that in which graduate civil engineers will find themselves when they enter the world of work. In the process, they learn syncretic thinking, clear communication and compromise.

The role-playing simulation approach allows students to explore experientially what it means to be a planner or a developer, thus preparing

them for their eventual entry into a community of practice.

Prof Venter considers computer-based simulation to be a promising tool to enhance classroom instruction and to respond to the changing learning styles of contemporary students, including a greater preference for social and active learning methods.

Similar initiatives can be emulated by educators who wish to develop new approaches to respond to contemporary students' preferences for more active and social learning styles.



Interactive learning through gaming interaction



Engineering mining students

Virtual reality provides an 'explosive' teaching experience

The implementation of safe and efficient blasting practices in an underground mining environment contributes to safer working conditions and increased productivity. Training students in a real production mining environment is often inefficient, with associated safety concerns. The Department of Mining Engineering has therefore embraced digital technology to provide training in a 'practical' environment through the use of virtual reality (VR).

The Department's VR blast training wall enables students to plan and execute the blasting of a rock face in a controlled and safe environment. By means of VR and augmented reality, they are able to design the blast, mark the blast holes and blast hole timing sequence activities, and actually execute the blast and experience the 'explosion' on an interactive screen.

This has an advantage over teaching in a traditional classroom environment, as the students are able to visualise and fully comprehend the concepts being taught, while gaining practical experience in a user-friendly, safe and erasable environment, where mistakes can be

made without any consequences.

The blast wall is projected on a screen, and the students focus on the marking of grade lines, direction lines and grid lines on the virtual wall, using a computer mouse shaped like a paintbrush (again portraying the real-life environment). It is important for the students to draw the grade and direction lines accurately, as this will determine the blast-hole positions, and ultimately the direction of advance of the tunnel. At this point, they can either proceed to the next step or delete the lines and start again. The intersection points of the horizontal and vertical grid lines represent the drill-hole positions. After marking the drill-hole positions, students assign detonator delay numbers to the drill-hole positions. Once the students are satisfied with the marking and timing of the round, they can watch the simulated blast sequence in real time or slow motion.

The hardware that forms part of this training exercise comprises a personal computer, overhead projector, stereo sound, infrared receivers and an infrared paintbrush. The VR blast training wall can

also be used effectively to train newly appointed mine workers to master the skills of marking and timing blast rounds in a controlled and 'real' environment, and it is the perfect tool to give workers refresher training at regular intervals, thereby enhancing their skills and improving the quality of tasks to be performed underground for safe and efficient blast outcomes.

Developing social responsibility skills for the future workplace

The concept of the 4IR relates to integrated technological developments, where automation impacts on industry products and services. Although it may increase economic inequality, it also presents an opportunity to empower people and create a shared vision for a better future.

The anticipated demands of the future workplace require higher education to cultivate innovative talent that is trained in an interdisciplinary and digitised environment. The medium of delivering teaching in the 4IR will build on existing hybrid teaching models but with higher levels of attention to its implications at a socioeconomic level. Catalysing new cross-disciplinary curricula must therefore develop students with an agile mindset to function in an intercultural context through self-directed learning and critical thinking.

Research presented at the 2016 Annual Meeting of the World Economic Forum (WEF) revealed 10 critical skills that are required for the modern workforce. This skills list was updated in the WEF's *Future of jobs* report of 2018. It provides a set of 21st-century skills that serve as a forward-looking measurement framework to evaluate the current skills mastered by students enrolled in service-based modules, such as the community-based project (JCP) module, which forms part of the curriculum of all undergraduate students in the Faculty of Engineering, Built Environment and Information Technology.



JCP community-based project 2019

Although no formal, universally agreed set of soft skills exists, most of these skills are a cluster of personality traits that have an interactive effect on personal and professional efficiency. According to Prof Ronny Webber-Youngman, Head of the Department of Mining Engineering, more than half of the skills identified as being necessary for the 4IR can be classified as people skills. For the past two decades, service-learning and community engagement modules have created the opportunity to address and develop students' soft skills, enabling them to be engaged citizens who are ready for the world of work.

The ability to understand the needs of others, as well as the broader social issues, and the desire to make a difference in the community, are positive attributes that are developed through service learning. It is also beneficial to give students the opportunity to address challenging tasks in an authentic environment, similar to that which they will encounter in a professional consulting practice.

It is with these outcomes in mind that the faculty implements its compulsory

undergraduate community-based project module. The module is aligned to the University's strategic goal of social responsiveness. It also integrates service-learning projects in all the faculty's undergraduate programmes.

More than 1 600 students register for this macro service-learning module annually, with an average completion rate of 95%. Each year, the students work in approximately 450 groups to help more than 350 different campus-community partners. They have to spend at least 40 hours working in the community. In the process, they not only apply their knowledge to solve a specific need in the community, but also acquire new skills, or improve existing ones.

Students undertake a variety of projects within a set of guidelines, and each project provides unique learning experiences. The most successful projects for the 2019 cohort were basic renovation and building projects. These included building jungle gyms and benches for communities. Students also developed a community park in Hatfield and taught mathematics and science to secondary school learners, and computer skills to community

members.

The students' exposure to authentic challenges through these projects allows them to increase their awareness of social responsibility. It also encourages them to collaborate in a multidisciplinary and multilingual environment to apply communication, interpersonal, technological and leadership skills. Continuous critical reflection and the students' feedback inform the module's efficiency and are part of a necessary process that contributes to its development and quality assurance.

Although the skills students acquire in each project are different, the generic skills identified by JCP students as being acquired during the module compare positively with both the WEF's global skills and the emerging South African skills for the 4IR, and are either directly or indirectly embedded in the achievement of the module's goals and objectives. The module also plays a valuable role in preparing students for numerous realities in the South African workplace – something that is seldom included in the curricula of subjects in the hard sciences.

Faculty of Health Sciences

**UG
enrolments**
7 255

Success rate
94,9%

Graduation
1 516

MBChB Declaration Ceremony

On 30 November 2019, the Faculty of Health Sciences celebrated its newly qualified doctors in the annual MBChB oath taking ceremony. In this ceremony, young doctors pledge to uphold their professional responsibilities in service to the community. This event allows the class to take part in the reading of the 'Oath', which commits newly qualified doctors to practising their profession in a moral and dignified way.

The School of Medicine at the University of Pretoria is one of the few in the country that holds a separate Oath Taking or Declaration Ceremony for graduating students. Some medical schools combine the declaration and graduation ceremonies, usually held at the end of the year. However, UP holds a separate Declaration Ceremony for several reasons.



Students learning together at new postgraduate commons

According to Prof Robin Green, the Declaration Ceremony is an opportunity for final-year medical students to celebrate their passing of the degree and achievement of distinctions ahead of the formal graduation ceremony. During the ceremony, each student who has achieved the degree with distinction is acknowledged, and students receive prizes in various subjects. The School of Medicine had 268 medical students who achieved professional status as doctors at the Declaration Ceremony in 2019. Of these, 182 graduates earned at least one distinction and 81 graduated cum laude.



Prof Robin Green (Chairperson: School of Medicine) and a celebrating student

Health Excellence Awards

The Clinix Health Group, in partnership with the South African Clinician Scientists Society, hosted the second South African Health Excellence Awards on 23 November 2019 at Emperor's Palace in Kempton Park. This event celebrates excellence in healthcare by identifying leaders in medicine who have contributed to research, teaching and the advancement of medicine in South Africa. Several University of Pretoria staff members from the Faculty of Health Sciences were among the recipients. Prof Michael Pepper, Director at the Institute for Cellular and Molecular Medicine (ICMM), Faculty of Health Sciences, took top honours in his category, winning the Scientific Excellence Award. Head of Otorhinolaryngology, Prof Mashudu Tshifularo, world famous for pioneering the innovative 3D ear transplant, won the Global Excellence

Award. Head of Family Medicine, Prof Johannes Hugo, was second runner-up for the Leadership Excellence Award.

'I am very proud of our colleagues and we will continue to celebrate the work they do to impact the health of all South Africans,' said Prof Robin Green, Chairperson of the School of Medicine.



Prof Michael Pepper and Prof Mike Sathekge



Prof Mashudu Tshifularo



Prof Johannes Hugo

International Challenge in Emergency Medicine

The TUKS Emergency Medicine Society received sixth place at the Khon Kaen University's fourth International Challenge in Emergency Medicine in Thailand. This competition is one of the most intense

emergency medicine competitions, with competitors completing five stages to progress to the final OSCE stage, in which only four teams compete. The competition challenges teams' clinical and ultrasound skills and medical knowledge.

The 2019 team included LW Biggs, A van Heerden, J Weyers and M Koortzen, who were trained and led by Prof Andreas Engelbrecht.



The team that participated in the International Emergency Medicine Competition

Inter-professional community engagement

Six departments from the Faculty of Health Sciences – Occupational Therapy, Physiotherapy, Human Nutrition, Radiography, Biokinetics and Nursing – joined hands to show messages of empowering, promoting and supporting breastfeeding to the community through their unique roles. Students from these departments engaged with mothers in the Daspoort community of Tshwane on 1 August 2019. Engaging with communities supports learning in a variety of ways. During such activities, students learn valuable 'soft skills' such as communicating appropriately with different communities.

Students created awareness about breastfeeding and how it is necessary for a baby's development. Mothers learned about correct handling and positioning of the baby during breastfeeding. Mother's milk is a boon for a baby's health. It is the

ultimate source of nutrients for the babies during the initial years. Mother's milk can protect the baby from infections and several diseases. Breastfeeding is a child rearing co-occupation, and occupational therapists (OTs) are well positioned to become role-players to address the infant child mortality rate through promoting and supporting breastfeeding. Students provided insight into adequate stimulation or play for the infant's age, eg visual tracking – mother's face, focus, head control. Mothers learned about Kangaroo Mother Care. Interaction of infants and mothers was emphasised before and after feeding. Students imparted knowledge on the importance of constructive and balanced leisure activities, ie to relieve

stress and improve health to increase milk production.

Radiology students explained the different aspects of radiography, radiation protection, risks and the radiation each modality gives. The group also shared symptoms of breast cancers and explained the importance of mammography. Mothers and future mothers asked questions about radiation and potential effects on breastfeeding. There was a perception that radiation affects the production of breastmilk, but the experts managed to dispel the myth. They also informed the mothers and mothers-to-be that it is safe to breastfeed their children after taking x-rays.

Making a difference at Little ABLE's Sanctuary

Third-year occupational therapy students from the University of Pretoria showed their social commitment at the Little ABLE's Sanctuary, which opened in 2005 for children with disabilities. The sanctuary aims to create a better community and lifestyle, and a stable environment for children with disabilities to achieve their dreams and goals. One programme at Little ABLE's Sanctuary is Child Care and Education, where they focus on children between the ages of 3 and 15 years who live with a disability.

The sanctuary is financially constrained and cannot appoint occupational therapists. 'We started providing a service to the sanctuary this year and the outcomes are amazing,' said Prof Kitty Uys, Head of the Department of Occupational Therapy.

Third-year OT students Tintswalo Matebula and Wilmari Pretorius are gratified by the difference they have made. 'It is overwhelming to note that the physically challenged child improves over two to three weeks after our occupational therapy intervention. For instance, a visually impaired child responded positively to sound aid,' said Tintswalo. Wilmari attested to the fact that continuous synergy between occupational therapists and caregivers yielded positive results. 'We propose certain interventions and allow caregivers to implement them and give us feedback when we come back to the centre. We continuously explore other means to enhance the child's participation,' she said.

According to Sanctuary Manager Ms Motshabi Moratiao, children with disabilities should receive support in a local early childhood development programme and attend special schools to further their education. 'We believe that by building an inclusive education system, we will ultimately help build an inclusive society; that is why we appreciate the service provided by occupational therapy students from the University of Pretoria,' she said.

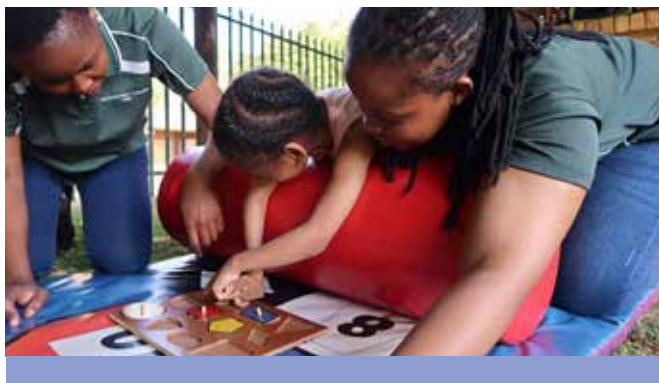


OT students engaging with mothers at the Daspoort Clinic, Tshwane.



Radiography group at Daspoort Clinic

Some children need a lot of support, and their parents must continuously liaise with the sanctuary to address their special needs. According to Prof Uys, the children have a wide variety of conditions: among others, intellectual disabilities, cerebral palsy, visual impairments and epilepsy. Irrespective of the challenges, a child born with a severe disability will lead a life of dependency. 'But we teach them how to take back some control where possible. We believe that such interventions may eliminate the abuse of children with disabilities in our community,' said Prof Uys.



Third-year occupational therapy students at Little ABLE's Sanctuary

Teaching and Learning Awards in the Faculty of Health Sciences



Mr Julius Thambura and Ms Hafsa Essop

The Faculty of Health Sciences is proud of its two Faculty Merit Award winners. What makes this accomplishment so noteworthy is that both Ms Essop and Mr Thambura are contract employees at the University. It is, however, clear that they are passionate about their roles and embracing teaching, learning, assessment

and research to the fullest in their roles. Much loved and appreciated by the students, these two junior staff members have made their mark in the School of Health Care Sciences and in the faculty. We are proud that they have made UP their home and we look forward to seeing the new initiatives and collaborations that will grow from their activities.

Mr Julius Thambura joined the Department of Radiography on 15 August 2014 as a clinical tutor with lecturing responsibilities. He embraced the strategic plan for the University of Pretoria as a research-intensive university. Mr Thambura completed his master's in 2016 and enrolled as a PhD student at the University of Pretoria in 2019. He obtained ethics approval for his PhD project in May 2019 and by October 2019 he had managed to collect over 80% of the projected data for his study. He hopes to complete his studies in 2020. Mr Thambura has been involved in the department as a supervisor of undergraduate research (RHC 480) and postgraduate honours, coordinating various modules, including RSK 700 and NVB 700.

Ms Hafsa Essop is a clinical lecturer in the Department of Radiography. She joined the academic department in 2017 and has made significant contributions to teaching and learning in radiography. She has shown the ability to identify gaps in student learning and address them in innovative ways. Some of her achievements to date include the development of a radiography board game and an online animation for automatic film processing. These two projects received funding from the teaching and learning department of the School of Health Care Sciences, and the SoTL grant. These studies were presented at two consecutive Flexible Futures conferences and at the South African Association of Health Educationalists.

Dentistry students' skills assessments

Clinical training in the workplace is an important strategy used by the School of Dentistry to develop students' clinical competence. Activities include the development of hard-core clinical skills and the so-called 'soft-skills'. Following the award-winning presentation on this topic at the 2018 Association for Medical Education in Europe conference in Basel, Switzerland, the School of Dentistry expanded the clinical continuous assessment system to other disciplines in 2019. In the meantime, Prof Corné Postma and Dr Karl-Heinz Merbold presented four e-posters at the 2019 Association for Dental Education conference in Berlin in August 2019 on the findings from this ongoing research project. Dr Merbold obtained a grant of R110 000 following these successes to upgrade the GoodX Dental Studio chairside application used to provide feedback and to grade students' performance based on their ability to execute dental procedures correctly without help.

The project is being expanded to other disciplines through an already approved protocol that now also includes the development of professionalism (a hot topic on the medical education front). Prof Leanne Sykes, Head of the Department



Dr Karl-Heinz Merbold with student chairside

of Prosthodontics, will now take the initiative to the next level through a PhD project that will aim to build and test a holistic feedback system related to the development of clinical competence in removable prosthodontics. Prof John Sandars (Professor in Medical Education) from Edgehill University in the UK will co-supervise.

'We Care' campaign

Many students are under severe stress, owing to many factors including long clinical hours, curriculum overload, examination pressure, poor performance, and economic and social difficulties. Students might suffer from depression, anxiety and burnout and consequently resort to taking medication. They might also take



Dentistry 'We Care' campaign

to substance use and abuse, frequent absenteeism, or other self-destructive coping mechanisms. The staff at the School of Dentistry wanted to show students they are aware of their struggles and are here to help, not only academically but also to offer personal support and advice, or direct them to qualified persons able to teach life coping mechanisms.

On 27 September 2019, the school organised a clinic-free morning and invited all third-, fourth- and final-year students to a support session themed 'We Care'. After a brief introduction by the school CEO, Prof White, and the event organiser, Prof Leanne Sykes, students listened to a team from the Counselling Services at UP. This information session explained where and how students can access emotional and academic help.

Motivational speaker Mr Nicholas Ingel presented an inspirational talk to the students, leaving most attendees teary-eyed. Nicholas has endured adoptions, parental suicides, childhood abuse, and a life-long struggle with alcohol. Not only did he turn his own life around, but then developed his own brand of youth upliftment programmes. The programmes are based on taking underprivileged youth, giving them free physical training and motivation, and then helping them gain scholarships and study bursaries. Several young men have stayed on and become coaches and together they travel the country giving seminars and training to schools and corporations.

The department will continue with such initiatives to remind students that the faculty cares and believes in their potential.

Faculty of Humanities

**UG
enrolments**
5 603

Success rate
86,3%

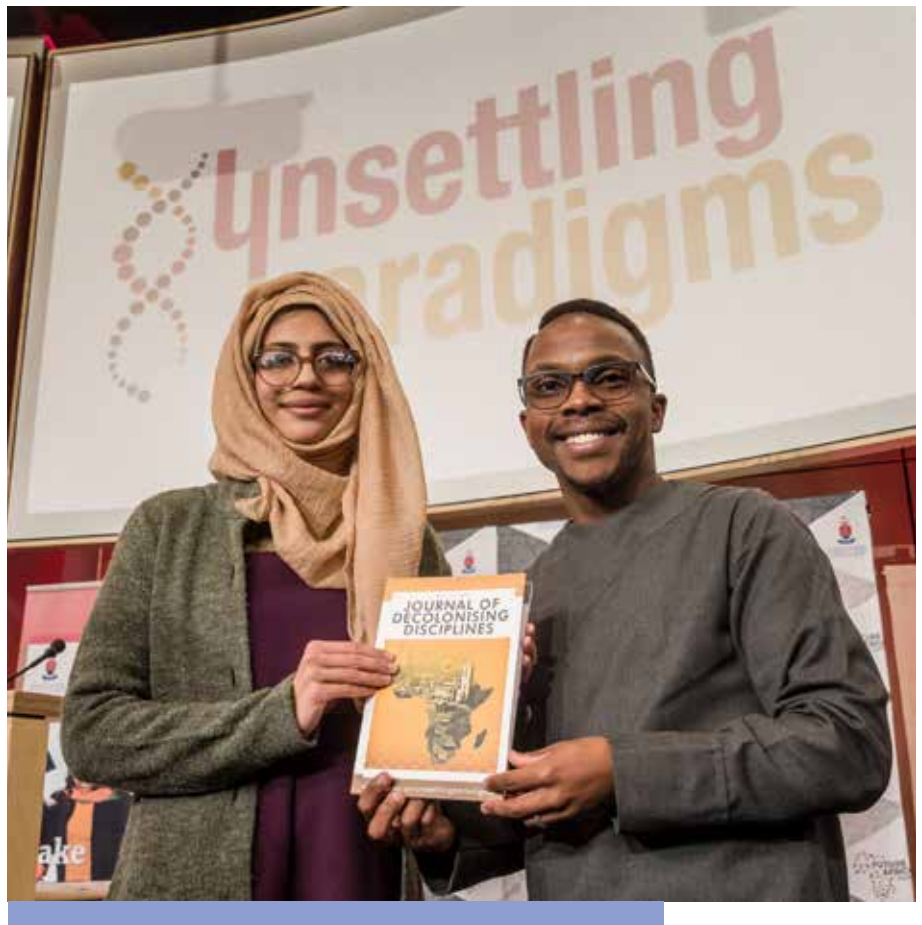
Graduation
1 456



Humanities' centenary publication

Humanities 100

The Faculty of Humanities celebrated its centenary year in 2019, and this milestone was marked by several events, including the launch of a commemorative publication, *Humanities 100*. The 'decolonial turn' featured as a major theme in teaching and learning in the faculty. Building on earlier work in curriculum transformation, academics were challenged to reconsider and adapt the ways in which they teach, learn and interact with students. This included supporting teaching and learning strategies and innovations that responded to pressing societal needs, incorporating pertinent practical and technological innovations, and developing the skills of critical enquiry and empathy among our diverse student population.



Launch of the Journal of Decolonising Disciplines, Ms Iram Yousuf (Contributor) and Mr Siseko Kumalo (Editor)

Teaching and Learning Awards

Playing to learn – teaching designing for development



Samples of students' design projects in visual arts module

Dr Fatima Cassim and Ms Marguerite van der Merwe from the Department of Visual Arts were the winners of the faculty's annual Teaching and Learning Award in 2019. In collaboration with play experts, the two information design lecturers developed an innovative module that uses a human-centred design ethos to teach students essential design development skills.

The annual design for development project, facilitated for the final-year undergraduate information design students, was conceptualised to cultivate design students' understanding of design, not only as a commercial practice, but more significantly as a social and sustainable practice. Informed by this objective, the project, entitled 'Teaching children creative problem-solving and design thinking skills through design principles', served as a catalyst for students to grapple with broader socio-cultural issues within a South African context. The brief, which called on students to frame their design problems in contextually appropriate ways, required students to innovate play-based learning activities with content related to a chosen social theme. Overall, the aim of the project was to develop and design a creative intervention that can be used by children, either among themselves or with their parents or other facilitators such as teachers. Information design students worked in groups of three to develop an educational toolkit that comprised educational tools and activities, projects, games, etc, for children between the ages of 8 and 12. Students were required to familiarise themselves with their chosen design principle and decide on a real-life application. For example, the principle of unity could be linked to the children's understanding of cultural diversity. For students to be mindful of the particular age group they were designing for, the lecturers adopted a multidisciplinary teaching approach by bringing play experts on board.

The introduction of play experts brought a unique pedagogical perspective to the project. Firstly, play facilitated an experiential learning environment. Secondly, the play experts introduced

students to different types of play – such as biblioplay, creative play, dramatised play and free play – by marrying information about the particular play category with an opportunity for students to play games and do other activities related to it. By playing as adults in a classroom setting, the information design students were challenged to move out of their comfort zones. Play also created an opportunity for the students to experience social integration first-hand with their target audience, with a view towards nurturing similar instances and opportunities when conceptualising and designing their toolkit activities. To make the students' experiences more concrete, play enabled them to reflect on their experiences of designing with others and not just for others. In this way, a more democratic design process and a human-centred design ethos were enabled.

A walk back in time

The second place was awarded to Prof Karen Harris, Head of the Department of Historical and Heritage Studies. Conscious of developing career paths for her students, Prof Harris developed an honours degree module on trends in heritage and cultural tourism to simulate the intellectual and practical experience of operating a tourism agency. The UP Hatfield Campus provides the site for this experiential learning opportunity as it boasts a century of history, has both cultural and natural heritage attractions with a kaleidoscope of architectural styles, and embodies a plethora of famous alumni and national and international achievements. Students taking the module use their theoretical coursework and research to inform and tailor organised campus tours. They thus provide various visiting groups with guided tours while honing their management, presentation, organisational, problem-solving skills.



Tour stops outside the Human Sciences Building during their walk back in time

UP Campus Tour organisers: Mr Thando Mthimkulu, Prof Karen Harris and Ms Danolien van den Berg



Prof Mageshen Naidoo, Coordinator of UP Jazz Studies programme

Jazz music teaching gains ground

In 2019, the Department of Music continued to deliver its world-class jazz studies programme, which was launched in 2015 under Prof Mageshen Naidoo, Director for Jazz Studies. There has been a significant step towards transforming the music curriculum from being primarily focused on classical music to one embracing a more diverse set of musical genres. Students in the BMus (Performing Arts) programme elect to take jazz courses leading to a major in jazz studies. In addition to core modules within the BMus degree, such as the History of Jazz taught by Dr Phuti Sephuru, students majoring in jazz study modules in jazz theory, jazz improvisation, jazz ensemble, first instrument practical study and jazz performance. During 2019, the programme had 20 jazz students and hosted at least 15 public performances, including five JazzUP shows for UP students and staff, five performances for the Hatfield Tshwane Initiative, two lunch hour concerts and several invited performances.

Kopanong Arts Festival

Led by the Department of Drama in the School of the Arts, the annual Kopanong Arts Festival was held from 22 to 27 July 2019. Under the leadership of the senior team, including Dr Chris Broodryk, Chair of Drama, and Prof Marie-Heleen Coetzee, the

festival had a successful run. The festival originated in 2001 as a showcase for the work of the department's honours students. Since then, it has grown to include any students or young artists wanting to experiment with their creative work on stage, in music or in film. Student groups from other provinces in the country have participated and the festival has also hosted international acts from Mozambique, Zimbabwe, Panama and Colombia over the years.



Photo credit: Mark Wessels

Gas lands was a collaboration with TUT and choreographed by Bailey Snyman. Cast: Mahlodi Pesa, Walt Janse van Rensburg, Tebogo Mhlauli, Oriana Somoza-Medina, Zelné Papenfus



Cast of Little Red Riding Hood and the Big Bad Metaphors: Bongive Ngidi, Sinaluthando Mkhize, Janilna Purchase, Shamiga Makaku, Bethan Martell, Katlego Chale, Kukhanya Simelane, André du Preez

The Kopanong Arts Festival aims to offer students and young artists the opportunity to showcase original creative work in any language and genre, to develop an entrepreneurial mindset, to facilitate an easier shift towards an economically active professional world, and to create a network of peers who can support each other in a very competitive working world. For a week in July 2019, students and artists produced a range of theatre productions that showcased the diversities of the lived experience as mediated through the complementary lenses of theatre, drama and performance. The Standard Bank Ovation Award-winning production *Little Red Riding Hood and the Big Bad Metaphors*, written by UP artist in residence (and Honorary Doctorate graduate), Dr Mike van Graan, was among the productions staged at the festival.

Conserving our cultural heritage

The Javett-UP Arts Centre opened with an exhibition of pieces from the Javett family's modern South African art collection, as well as pieces such as Irma Stern's *Arab priest*, Gerard Sekoto's *Song of the pick*, Johannes Phokela's *Chocolat*, Alexis Preller's *Red angel*, Zanele Muholi's *Simthembile I*, *East London*, Johannes Maswanganyi's *Jesus is walking on water*, Jackson Hlungwani's *Crucifix* and William Kentridge's *Felix in exile*. A key exhibit is Preller's *Discovery*, a formidable work that has not been seen in 30 years. The painting, which was completed in the 1960s, was to undergo live conservation in situ as part of the MSocSci (Tangible Heritage Conservation) at UP.

The Gold of Africa Gallery at the Javett-UP Arts Centre opened with the iconic gold rhino and leopard from the Mapungubwe Gold Collection and many other priceless treasures that offered a unique view of the precious metal that runs through the veins of Africa, and the thriving civilisation that served as a sophisticated trading centre from around 1200 to 1300 AD.



Mapungubwe Gold Collection



LEFT: Leigh Bregman (Javett Foundation) and Prof Tawana Kupe (UP Vice-Chancellor and Principal) unveil the commemorative plaque, with Dr Conrad Strauss (Chairman of the Javett Board) in the background



One view of the gallery

Department of African Languages embraces new assessment techniques

Like many of her colleagues, Lungile Mncwango, a lecturer in the Department of African Languages, has embraced hybrid teaching and learning. She believes that the hybrid approach enables her to balance her teaching and research priorities. She says: 'Teaching with technology is something I never imagined could be applied in African Languages. I decided to try it out for my ZUL 111, 211 and AFT 121 modules, and it works effectively as it helps students to access their work whenever and wherever because it is available in mobile and desktop platforms.' The advantage for Ms Mncwango is that she saves time, which can then be redirected to her research. Besides using the learning management system, clickUP, frequently, particularly for announcements, assessments, and the grade centre, she recently tried the tests assessment tool as a way of gathering assessment marks. Ms Mncwango sees the following advantages for students: 'Students also get to work on those assessments wherever they are. This approach makes students very eager to do their assignments and perform well. It keeps them interested in assessment activities.' She is also branching out beyond the use of the learning management system. She uses the Kahoot! polling software quite often to test students' prior knowledge and sometimes to review the work previously done in class. She claims: 'Kahoot! is both fun and educational. Students really enjoy it because they get to learn and have fun at the same time.'

Digital writing support for students

Ms Suléne Pilon from the Department of Afrikaans was involved in developing a digital writing aid to enable students to improve their writing and lecturers to save time on marking essays. The digital writing tool, Skryfhulp Afrikaans, provides students with the kind of detailed feedback on their writing that lecturers

would like to give, but find very time consuming. It is not merely a new version of a 'spelling and grammar check', but a tool that guides students in academic writing.

Academic writing is a challenging endeavour for students worldwide. To overcome this challenge, many different initiatives have been undertaken to support student writing at universities. In the last few years, the focus has increasingly shifted towards providing digital writing support to students, resulting in the development of several digital writing tools.

Within this context, the Leuven Language Institute (<https://ilt.kuleuven.be/english/>) at the KU Leuven in Belgium, developed the Schrijfhelp Nederlands (Dutch Writing Aid) and the Academic Writing Aid English to support students during the academic writing process. In a project funded by the South African Centre for Digital Language Resources, a collaboration between the Leuven Language Institute, the University of Pretoria, North-West University and Stellenbosch University, the first version of an Afrikaans writing aid, Skryfhulp Afrikaans, has also recently been developed.

Skryfhulp Afrikaans can analyse academic Afrikaans texts for a number of features ranging from higher-order concerns such as text structure and cohesion, to lower-order ones such as basic grammatical errors and spelling mistakes. The system points out potential problems to students and gives feedback about these matters in order to assist them in improving the quality of their writing. Students can also use the system to help them enrich their writing with more academically suited words and phrases.



Ms Suléne Pilon from the Department of Afrikaans

Building critical thinking skills in first-year sociology students



Prof Alf Nilsen who leads the revised SOC 110 module

How does one ensure that undergraduate teaching both triggers critical intellectual excitement and builds necessary academic skills among undergraduate students? This question is central to the teaching activities of Prof Alf Nilsen, who joined the Department of Sociology in 2019 and taught the restructured SOC 110 module, Invitation to Sociology. The module is divided into two parts – one that introduces sociological perspectives on key social structures such as class, race, gender, and North-South relations, and one that discusses the trajectory of post-apartheid South Africa in light of these perspectives. The module has been designed with transformation in mind, adopting a Southern perspective on key sociological concerns and prioritising the representations of scholars and scholarship grounded in Southern and South African contexts and realities. In debating these issues, the module is aimed at fostering crucial skills, including academic writing, basic research techniques, and the mastery of logic and evidence in analysis and discussion. In 2019, when the module was first piloted, a pass rate of 87,5% and an average student satisfaction score of 4,1 were achieved, which suggests that the module was quite successful. Further improvements and measures to enhance learning opportunities for students are being implemented in 2020, notable among which is a series of digital mini-lectures on key concepts and ideas from the syllabus, which will be presented to the students as *The Digital Sociology Dictionary*.

Inter-professional modules for undergraduate healthcare students

Globally, inter-professional education is lauded for its potential to improve the quality of healthcare and healthcare outcomes through teamwork between professionals from various health-related disciplines. The South African Department of Health advocates for multidisciplinary teamwork in the community. In order to prepare future professionals for similar teamwork in challenging professional contexts, the University of Pretoria strives to incorporate this approach in its teaching and learning. Since 2015, the Department of Speech-Language Pathology and Audiology in the Faculty of Humanities has worked with the School of Health Care Sciences in the Faculty of Health Sciences in the delivery of multidisciplinary modules. Students from the departments of Occupational Therapy, Human Nutrition, Physiotherapy, Radiography, Nursing, and Speech-Language Therapy and Audiology are enrolled in the collaborative modules.

Modules are structured around inter-professional teamwork and leadership in under-served contexts. The emphasis is on community engagement with the aim of reducing the burden of disease, delays and/or disorders. Lecturers from all participating departments share the teaching responsibilities and students work in inter-professional groups from the first year onwards. A lecturer is assigned to each group of students as a mentor in order to support student learning, facilitate teamwork and provide guidance during community-based projects. In first year, students are exposed to resource-constrained settings and develop foundational knowledge regarding inter-professional learning and leadership. In second year, students continue to receive theoretical knowledge while conducting a short interactive project in a small community with a focus on health promotion. In the third year, students learn more about project management and are required to conduct a larger project within the community, based on the community's expressed needs. The ultimate goal of the project is to uplift and empower the community by initiating a sustainable community project.

Despite the challenges faced when attempting to implement inter-professional education across multiple professional programmes, the modules have been successfully executed. Monitoring and evaluation of the modules are ongoing to refine and improve them each year. Effective inter-professional healthcare may alleviate service duplication, minimise interventions and reduce healthcare costs. Educators need to work together to create opportunities for shared learning to improve inter-professional teamwork.

Innovating social work practice assessment through e-portfolios

Dr Gerna Wessels, Ms Leanne Jordaan and Mr Siphon Sibanda from the Department of Social Work initiated the shift of final-year social work students' practice assignments and reports from hardcopy submissions to online submissions in a pilot study

in 2018. In doing so, they created a new path for assessment practice of professional social work training that was formally adopted in 2019. The uniqueness of the shift is embedded in the opportunity for students to create e-portfolios. Assessed assignments are captured as 'artefacts' in an e-portfolio, according to a customised template, to reflect the content of the Social Work (MWP 400) module. The positive outcomes for teaching and learning for final-year social work students resulted in a decision to make online submissions of reports and e-portfolios a requirement for second- and third-year social work students from 2020.

Students take ownership of their portfolios by providing a photo, personal mission statement and a meaningful quote and metaphor to reflect their professional identities. Students are furthermore invited to reflect critically on their personal and professional growth in each study unit, providing opportunities for higher-order learning.

As students can download their portfolios every year, the e-portfolios present a living document to demonstrate students' continued growth throughout the Bachelor of Social Work programme. Compiling an e-portfolio places students at the centre in their own learning, is environmentally friendly and prepares students for the digital world of work.

International conference on the humanities curriculum



'Unsettling paradigms' speaker, Prof Pamela Maseko, North-West University

The Faculty of Humanities co-hosted an international conference under the theme *Unsettling paradigms: the decolonial turn and the humanities curriculum: prospects, practice and interventions* in July 2019. The conference was organised in collaboration with the University of Cape Town, the University of the Free State, Rhodes University, Stellenbosch University, the University of the Western Cape, the University of the Witwatersrand and the University of KwaZulu-Natal, and sponsored by the Andrew W Mellon Foundation as part of a grant on a theme of the same name. Faculty staff participated actively in the conference. For example, political sciences lecturer Dr Quraysha Ismail Sooliman presented a paper entitled 'Students, intellectualism and knowledge production: Considering the #FMF student protests', while Dr Sonja Cruywagen from the Department of Music presented a paper, 'Decolonisation, constructivism and the study of popular music theory'. The conference also provided a platform for student participation.



Prof Pamela Maseko (North-West University), Ms Renée Marais (UP Department of African Languages), Mr VJ Nkosi (UP Department of African Languages), Prof Leonhard Praeg (UP Department of Philosophy) and Prof Vasu Reddy (Dean: Faculty of Humanities, UP)

The inaugural edition of a new journal, the *Journal of Decolonising Disciplines* was published, with political philosophy master's student Mr Siseko Kumalo as Editor-in-Chief.



Prof Vasu Reddy, Dean: Faculty of Humanities at UP, with a copy of the *Journal of Decolonising Disciplines*

Teaching and learning discussion fora

The faculty hosted five teaching and learning discussion fora in 2019 and takes pride in having been able to involve many in-house faculty staff members as presenters. During the session on 'Learning and motivation' on 9 April, Ms Ruth Liprini, a guest lecturer in the Department of Psychology, discussed factors that influence student motivation and willingness to learn. At the second discussion forum entitled 'Old content and techniques – novel modes of delivery', on 16 May, two hybrid teaching examples from within the faculty were shared. Ms Charlotte Sibanyoni (from the Department of Ancient and Modern Languages and Cultures) explained how she is able to keep the attention of a new generation of technology-crazy youngsters in a module on Hebrew (often regarded a 'dead' language). Dr Tessa Rhodie (from the Department of Music) discussed a digital collaborative project between music and fine arts that centres on the animated presentation of basic skills, the movements and levers used in piano technique – a project for which she received a Scholarship of Teaching and Learning grant. At another discussion forum on 24 July, staff were given a demonstration of the hybrid learning self-evaluation app for lecturers by Ms Detken Scheepers, head of E-Education in the Department for Education Innovation.

The year concluded with a strong focus on student well-being. During a session on 'Teaching students with disabilities' on 30 September, the disabilities with which some students at UP present and the implications for teaching and learning were discussed. Ms Maria Ramaahlo, Head of the Disability Unit, explained how the services rendered by the unit can assist with teaching and learning. Dr Alecia Samuels, from the Centre for Augmentative and Alternative Communication in the faculty, discussed ways in which lecturers can make their academic content and teaching accessible. The session 'Teaching students with mental health challenges' on 16 October attracted much attention. Dr Linda Eskell-Blokland, Head of the Counselling Unit at Student Affairs, shared the typical mental health challenges faced by UP students. She discussed how students with mental health challenges could best be assisted when it comes to teaching and learning demands and processes. After her discussion, a panel consisting of herself and other staff members dealing with students on a regular basis (Ms Siya Jinoyi and Ms Modipadi Phala, the FSAs for Humanities; and Ms Ronel du Toit and Ms Alexandra Norton from the Counselling Unit on Groenkloof Campus) shared their experiences and ideas. A lively discussion with numerous questions and answers followed.



Students at work in the Law Library

Faculty of Law

**UG
enrolments**
2 572

Success rate
81,5%

Graduation
687

'In hot pursuit on the stormy high seas': Hybrid learning approach

Dr Martha Bradley's approach to hybrid learning in Public Law (PBL 320) is quite exciting. It is apt that one of her innovative and creative approaches dealt with core concepts such as 'hot pursuit' seeing that she obtained an LLM (International Air, Space and Telecommunication Law), an LLM (Shipping Law) and an LLD with a thesis entitled 'An analysis of the notions of "organised armed groups" and "intensity" in the law of non-international armed conflict'. Her approach took on the format of a role-play in the classroom with regard to teaching certain parts of the law of the sea in PBL 320. It was ascertained that students often struggle with core concepts such as 'hot pursuit' and the

differing jurisdictions in the maritime zones. Based on previous experience, it was established from videos and images of the maritime zones that 'hot pursuit' still proves to be a complex issue, as students were unable to answer application questions in this regard. To overcome these challenges, videos and images in pre-readings were made available to aid students' preparation for the class.

The approach in class by Dr Bradley was two-fold. First, the lecturer herself illustrated the differing maritime zones and afterwards built on that knowledge with the help of the academic associate (AA) to role-play the concept 'hot pursuit'. Before the lecture, the students in the class were divided into the different maritime zones. The walls to the left and right of the classroom

were the territorial seas of two different countries and the centre of the classroom was the high seas, with the other zones in between. The lecturer 'pretended' to be a vessel 'shedding' or 'losing' the strong jurisdictional pull of the territorial seas until she reached the high seas where only the flag state had jurisdiction. During her voyage, different events occurred, such as an oil leak from the vessel, illegal fishing or even a murder on the vessel by a foreigner. The students then had to identify who had jurisdiction. The interaction was very successful. The students engaged well during this class and even shared some humour and posed various questions to the participants.

Once the students were comfortable with the zones, the concept of 'hot pursuit' was introduced. First the lecturer explained the 'rules' and then told the class that they were public international lawyers and had to decide when a pursuit is in accordance with the law or, alternatively, why or why not in terms of four different simulations. The AA represented the vessel that committed a violation (or did not, depending on the simulation) – she did something on board her vessel, for example committed piracy or fished in the Exclusive Economic Zone (EEZ), and then the lecturer presented the military vessel that 'chased' the 'suspicious vessel'. The law of hot pursuit demands that a military vessel can only chase a suspicious vessel if such vessel committed a violation in the territorial waters or EEZ of the territorial state and both vessels were in one of these maritime zones. The pursuing vessel has to transmit audio and visual signals to the 'suspicious' vessel before the chase starts. The arrest may only occur in the waters of the state to which the military vessel belongs or the high seas; once the 'suspicious' vessel reaches the territorial seas of another state, the vessel is free to go and the military vessel must cease the chase. The pursuit must also be uninterrupted – if the military vessel runs out of fuel or stops for any reason, the pursuit must be called off.

The role-play would start with the AA

and lecturer being placed in maritime zones. The students would assess if the start of the chase was legal. The AA would do something from her vessel and the students would assess if that would constitute a violation of international law and could justify a chase. The military vessel had to signal (the students would assess if the signal was legal or not) and the chase then commenced. The arrest had to take place prior to the suspicious vessel reaching the territorial waters of the other state. The students laughed and played along with each scenario. The class also used a cellphone for sound effects, such as the horn to announce the start of the chase. The whole class participated and was excited to give feedback. Students were paying attention to the role-play and participated fully.



Dr Martie Bradley

Hot pursuit was then tested extensively in the second semester test with the emphasis on problem-solving and a strong linkage to the inquiry-led approach. The students who attended class, prepared, engaged and participated improved their marks exponentially and became more excited about class attendance afterwards. This was an important approach to improve the throughput rate in 2019.

In addition to the above, Dr Bradley also loaded general events on clickUP occurring around the world that overlapped with current and future lectures, bringing current and future developments into

the classroom to showcase important international law issues in the real world. An example that occurred before teaching the component on space law was the 'Space Command' created by President Donald Trump of the USA, which was discussed to create the linkage to whether the use of military force in outer space and, as such, Space Force was legal or not.

It is clear that Dr Bradley has a passion for teaching, as evident from the fresh approaches she has brought to a struggling module. She has found the 'hot spot' in her 'hot pursuit' by engaging students and involving them on a level and in a zone in which they were prepared to meet her. Dr Bradley is applauded for engaging students throughout the lectures, and encouraging and allowing them to think about the content through questioning, thereby promoting the development of thinking skills as well as involving students in both answering and asking questions, and thus acknowledging students as partners in the learning process while constructing meaning. Dr Bradley's enthusiasm for the content, her inspiration, passion for the content and positive energy made PBL 320 a 'hot pursuit of hybrid learning and student success'.

Navigating the labyrinth: A student-centred hybrid approach

Dr Jani Sita van Wyk is a lecturer in the Department of Mercantile Law and holds the degrees LLB (cum laude), LLM (Procedural Law) (cum laude) and LLD from the University of Pretoria. She is a passionate academic who loves to engage with students and guide them through the labyrinth of challenging and complex legal issues, not only in Insolvency Law, but also in Corporate Law. Both are very difficult subjects. Insolvency Law proved to be especially challenging in 2018, which resulted in its being flagged for 2019. Dr Van Wyk's approach proved successful not only in this first-semester module, but also in the second semester when she was the lecturer for Corporate Law.

It is evident from her teaching philosophy that the lecturer has to provide the learning opportunities, and the assessment opportunities must be designed to allow the students to grow. In addition, students are primarily responsible for their own learning, using the opportunities provided and their subsequent success. The lecturer can, and must, strive to empower students, diverse as they are, to succeed. Given the high impact status of ISR 310, it is evident that Dr Van Wyk had to make some significant changes to the assessment practices and curriculum based on her belief that students should be trained in assessment and that inquiry-based learning is not only facilitated by the lecturer, but is also the responsibility of the student. This is further supported by the fact that Dr Van Wyk believes that a structured environment is not always conducive to learning as students find solutions to their answers at their own pace and with the assistance of peers whom they trust. She also believes that large classes and the general classroom environments are not always conducive to student learning, and therefore other opportunities need to be created for students to succeed.

Her approach to assessment was as follows: Students' knowledge of the theory was tested by way of two clickUP tests in February and March of 2019. The semester test scheduled for April 2019 consisted of application-based questions only because the theory had been tested in the clickUP tests. Students were therefore 'forced' to study the theory in manageable segments and the closed-book, written test assessed understanding and application. The substance of each student's clickUP test was also made available to the student and showed the student's answer as well as the correct answer. This made it possible for students to reflect on their answers and their knowledge of the law. The same approach was followed with the semester test.

Dr Van Wyk's approach to student success, and the student-friendly and student-centred environment that she creates,

makes her teaching popular with the students. She was voted the Lecturer of the Year by the third-year group in 2019. The students spoke very highly of Dr Van Wyk and were impressed by her approachability, attitude and overall practical approach to the module. They said the following:

- *The lecturer is very approachable, you cannot be afraid to consult with her.*
- *The approach to ISR 310 is more a tangible one, then you understand things a lot better.*
- *You can relate what she teaches because she uses real life scenarios. She deals with these scenarios in the practice questions. She introduces us to many examples of real life situation.*



Dr Jani Van Wyk

Some of the comments made by the reviewers about Dr Van Wyk include the following:

- *Dr Van Wyk came across as the epitome of a reflective practitioner. She is clearly cognisant of the fact that assessment drives learning and goes about the refinement of the assessment curriculum of the course as a 'career-long' activity of reflection and improvement. Early in the course she requested feedback from students to check whether she was on track. She also changed an assessment towards the end of the course to address*

deficiencies that she was unaware of. The study guide for ISR 310 is the best I have seen. It is attractive, complete and provides excellent scaffolding to pace students, especially for the self-study components of the course. She set out the objective of delivering students at NQF level 7 with its requirements and competencies and explained how that can be achieved. The students were actively engaged in her class and valued her highly by voting her the best third-year lecturer in 2019. I have no hesitation in recommending her as the winner for 2019.

- *An excellent application with a clearly articulated, constructively aligned teaching practice. TEACHING PHILOSOPHY: This entails explaining personal beliefs about learning and what constitutes good teaching. The teaching philosophy reveals the lecturer's theory of teaching. TEACHING NARRATIVE: This explains the lecturer's teaching practice—how the teaching theory translates into classroom practice, how the lecturer caters for the diversity of learning styles, and how the instructor caters for the development of inquiry-led skills in students. TEACHING DOCUMENTS: Learning outcomes (study guide) include a sample lesson plan, the classroom activities used to address the outcomes, evidence of student learning on a classroom activity, semester test/exam questions related to testing student learning in the provided lesson plan, and student marks.*

It comes as no surprise that Dr Van Wyk was chosen as the clear winner for the 2019 Faculty of Law Teaching and Learning Award. Her colleagues offer her their hearty congratulations on this achievement.

When students were asked whether they would cope in all their modules if the assessment model followed in ISR 310 were used, their answer was a resounding 'yes'. They particularly liked the practice questions, which the lecturer placed on clickUP two weeks before the test was written. The practice questions were not compulsory; however, the lecturer availed herself for consultation on them. Students

strongly believed that if you do the practice questions, consult on them and attend class, you are well prepared to do well on the assessment. Students recommended that the assessment model used in ISR 310 be implemented for all challenging modules in third year.

Dr Van Wyk created the best environments for her students and not only allowed them to be part of the learning process but also provided them with the opportunities to take responsibility for their learning experience and success. It is clear that the following words of Albert Einstein can easily be applied to Dr Van Wyk: 'I never teach my pupils. I can only attempt to provide the conditions in which they can learn.'

The Centre for Human Rights takes giant leap into open online teaching



Innovation: Moving from the contact LLM launch in March to the online course in September

The Centre for Human Rights is an academic department within the Faculty of Law and has been offering formal education programmes for more than 30 years. The centre is expanding its academic offering to a broader community of students seeking to expand their knowledge of human rights, particularly in the African context. Through the free massive open online courses (MOOCs) on the platform, the centre is increasing its reach from the traditional classroom to the virtual teaching and learning space.

The Centre for Human Rights launched its online human rights programmes in September 2019. The programmes are hosted on the centre's own Open edX platform and were developed in collaboration with the Global Campus of Human Rights. This Centre for Human Rights' MOOC provides a basic understanding

of the functioning of the African regional human rights system and its relevance to the realisation of human rights in Africa. The 'Introduction to the African human rights system' provides participants with a solid introduction to the regional protection of human rights within the institutional framework of the African Union and its monitoring system. Different themes relating to implementation, refugees, women, LGBTI persons and access to information are further explored.

The programme of the MOOC is divided into three modules: Module 1 introduces the African regional human rights system, module 2 explores in more detail four bodies involved in the promotion and protection of human rights in Africa, and module 3 discusses implementation as well as the work of the African Union in relation to four thematic areas: migration, women's rights, the rights of LGBTI persons, access to information, and business and human rights.

Reflecting the international spirit and multidisciplinary approach of the centre, the course is taught by academics and experts drawn from a vast network of African scholars, representing most regions of the African continent. This enables participants to benefit from rich and varied competencies, experiences and knowledge. This MOOC has been developed under the auspices of the master's programme in human rights and democratisation in Africa and the advanced human rights courses. Both of these programmes are coordinated by

the Centre for Human Rights.

So far, the centre has had more than 8 000 online learners who signed up for these courses. The centre's next MOOC will be on 'The right to privacy in the digital age' and will be offered in partnership with Google.



The Faculty of Law excels with its Moot Court participation

'To boldly go where no one has gone before': Going virtual



Dr Gustav Muller

In 2019, lecturers in the Department of Private Law not only engaged with students on current issues in their lectures, but also related them back to the subject matter in the respective courses. They did this in a virtual but authentic way.

In SAR 310, one issue that was addressed dealt with expropriation of land without compensation. Students with widely diverging viewpoints could engage in an orderly discussion on this controversial topic.

The lecturers in DLR 320 dealt with issues related to the 'Me too' campaign against gender violence as well as the issue of sexual harassment. In the latter subject, students were given an assignment in terms of which they were to advise a fictitious company of possible civil liability if their staff should engage in sexual harassment. Students then also had to draft a sexual harassment policy for the fictitious company. The aim was to make students aware of the scourge of sexual harassment. On the one hand, this would hopefully make some potential perpetrators rethink their actions. On the other hand, it would also inform potential victims that there could be ways to seek redress. Students approached

this project with much enthusiasm, and the overall standard of work submitted by the students was excellent. This topic was discussed not to only promote transformation, but also to keep the teaching and learning environment engaging and stimulating for the students. This approach stimulates participation of students in lectures and allows for debates on current issues.

In some modules, lecturers also introduced some innovative ways to engage with students. In 2018, Dr Gustav Muller began to introduce virtual consultations for SAR 320. He set up a virtual consultation room on clickUP and, during his consultation hours, students could either consult with him in person or via the virtual chatroom. The response was so good that he developed this concept further for 2019. While Dr Muller was on sabbatical, he mentored the lecturers, Ms Clireesh Cloete and Ms Ilana le Roux, on the use of the virtual consultations. They implemented this concept with great success and found that more and more students preferred to engage via this virtual consultation room. Not only did this create a friendly environment for students who are often more adept at interacting via social media than in person, it also had the advantage that the entire class could read the questions, answers and discussions, so that all students could benefit from them.



Ms Clireesh Cloete

Lecturers also embraced the new teaching approach and blended learning in the classroom to an increased extent. In PVR 420 (Private Law), the lecturers, Ms Clireesh Cloete and Ms Sophy Baird, created narrated PowerPoint slides in which the relevant general principles were discussed. These were put on clickUP on a weekly basis to ensure that all students worked at a steady pace. Students were required to work through the applicable narrated PowerPoint slides before each lecture. In the classroom, the lecturers sought to engage more directly with students, almost in the fashion of a tutorial, rather than a formal lecture. Assessments took the form of online assignments where students were given legal problems and were required to come up with a competent solution. The lecturers deliberately set questions that were open to different interpretations and students were encouraged to come up with their own answers based on competent application of the relevant law.



Ms Sophy Baird

'No, it's not your money': Taking the taxing issues out of tax administration

There is a reason that Dr Carika Fritz from the Department of Mercantile Law won the Faculty of Law Teaching Award for 2017 and continues to shine. The evaluators in 2017 had high praise for Dr Fritz in that she demonstrated an

exceptional commitment to teaching and learning. Her portfolio indicated that she had used exciting and innovative means to engage students and to stimulate deeper learning. It was further noted that 'the teaching method is definitely an improvement on the traditional method of teaching. Especially the pre-examination research assignment needs to be commended: with regard to transformative constitutionalism and the socio-economic context, the pre-examination research assignment is a very appropriate intervention. There is no doubt that, through the way in which the lectures are structured, higher order thinking is developed. This is done on a level appropriate to third-year students. The lecturer has made a stellar attempt to combine a variety of modes of instruction to keep the interest and attention of students. The combination of various teaching methods and modes of assessment is impressive'.

Fast-forward to 2019 and Dr Fritz is still at the forefront of innovative teaching practices. In the module Tax Administration for her master's students, she posted the following problem:

On 1 July 2019 Mr Alfred Dlamini received a voice mail from his tax practitioner, Ms Patricia Stols. In this voice mail she indicated that they needed to urgently meet as SARS had levied penalties against Mr Dlamini. Mr Dlamini tried to phone Ms Stols without success. Eventually, on 22 July, Ms Stols' son picked up and indicated that his mother had passed away on 3 July 2019 and that he, or any other family member of Ms Stols, would not be able to assist Mr Dlamini.

On 23 July, Mr Dlamini started with his pursuit of finding out what was going on with his tax affairs. He contacted the SARS contact centre and was referred to several other persons. All of them indicated that all the information was available on e-filing and he should access it online. However, Mr Dlamini could not access it as his tax matters were registered under the profile of his tax practitioner, Ms Stols. Mr Dlamini was really anxious as he did not know what was going on.

He has approached you to assist him in this regard. You are required to submit documents/forms/pleadings that you consider to be necessary to assist Mr Dlamini.

Please note the following:

1. SARS' website is currently down and therefore you should rather submit any documents/forms/pleadings on the TAX 802 clickUP page.

2. Your documents/forms/pleadings should be submitted before 12 August 17:00 (only one per group needs to submit).
3. You may create any additional information required to complete the documents/forms/pleadings but may not change the facts as indicated above.

Initially Dr Fritz had a block session where general issues in tax administration were handled. Each student randomly received a case via clickUP that they had to prepare for this block session. Dr Fritz created the framework for discussion and they had to present the courts' various findings in their cases, and then the group had to criticise the judgments.

All the students started with the same assignment. Assignments 2-4 were based on the same scenario and students were divided into groups of two persons (a firm). Dr Fritz played the role of SARS. Each firm had to file pleadings, objections and so forth. The students not only dealt with dispute resolution in tax but also had to grapple with procedural law aspects, as well as income tax issues dealt with in the first semester, some of which they had to revisit. Students were not only forced to engage with court rules but also to identify grounds upon which they should be allowed in their dispute with SARS. Students had to file all responses to SARS on clickUP and one group even served two notices of motion for urgent application on Dr Fritz (as SARS).

From this, it is evident that Dr Fritz not only had to plan meticulously what she wanted to achieve with the module, but also had to make it fun, practical and thought-provoking where students had to deal with the taxing reality that most people are faced with and the administration of SARS.



Dr Carika Fritz

Faculty of Natural and Agricultural Sciences

**UG
enrolments
6 448**

**Success rate
74,4%**

**Graduation
1 385**



Goal achieved: graduates and award winners

Developing academics as teachers

The development of academics as teachers is a national priority. This is the message of the national framework document developed by the Department of Higher Education and Training (DHET) as a guideline for the distribution of funds through the University Capacity Development Grant (UCDG). Effective undergraduate and postgraduate student learning requires a

scholarly and professional approach to teaching. The Faculty of Natural and Agricultural Sciences has been conducting continuing professional development (CPD) activities for a number of years, but this was intensified in 2018 and 2019 after the requirement for participation in CPD training became part of the performance contracts of academics. A total of 34 different training events were offered or coordinated by Dr Ina Louw, the EC for the faculty.

The campaign consisted of two initiatives: a series of brownbag lunch events for lecturers, called FLY@NAS, and CPD training sessions provided by Dr Louw.



How to be an authentic teacher in higher education

The CPD training sessions offered by Dr Louw comprised the following: eight sessions on compiling a teaching portfolio (102 attendees), 'The art and science of presenting a lecture' (68 attendees), the 'Growth mindset and learning' (25 lecturers and two groups of students), and 'How learning works' (65 attendees). Two workshops on 'Flip without flop' were presented in a flipped style (27 participants). Various department-based sessions were also conducted, such as writing learning outcomes with Bloom in mind and constructive alignment of learning objectives and assessment. The workshop on how to be an authentic teacher in higher education was attended by seven brave lecturers. In the photo above, they are showing their posters to describe 'the "me" that is present in my class'.

The FLY@NAS brownbag lunch sessions provide a platform where lecturers share highlights and challenges of their teaching innovations in an informal setting. The events of the first semester were branded with a 'box' theme: Soapbox, Toolbox and Chatterbox. The Soapbox event on 19 March celebrated a total of eight decades of excellent teaching between two seasoned academics from the Faculty of Natural and Agricultural Sciences, Prof Jan Verschoor (Biochemistry) and Prof Wentzel Schoeman (Chemistry). These two colleagues leave a legacy that will be hard to beat. They shared their experiences and insights about teaching at UP.

Prof Verschoor stated:

I believe that the QUINTessence of a good lecturer can be captured by the word QUINT, where Q represents 'quality': No lecturer should present poor quality work. The U is for 'unity': As a lecturer you should put your bias and prejudice aside and unite your class; guard against anything that can polarise your class. The I is for 'integrity': You cannot make empty promises, or be dishonest. The N represents 'new': You are obliged to renew your work and presentations continuously. The T is for 'triumphant'.

Prof Verschoor concluded his presentation by stating: 'Celebrate mastery with your students. It is important to keep them motivated.'

Prof Schoeman reflected on how he had witnessed transformation at UP since he was a first-year student in 1973. According to him, 'the lecturer's first role is that of a role model. You choose to be either a positive or negative role model.' He asserted that students are often unsure and insecure, and it is the obligation of the lecturer to guide them appropriately. 'Supply them with a "to-do list". It will motivate students as they see how they progress on their list. Students need to know what the "do's" and the "don'ts" are.' Prof Schoeman

said that every person should think something of him-/herself, but not too much: 'Steer clear of arrogance' was the advice given.

The audience expressed their deep appreciation for two champions of good teaching. It was clear that these two professors both taught from the heart.



Profs Marietjie Potgieter, Jan Verschoor and Wentzel Schoeman with Dr Ina Louw

During the second event on 28 May, called Toolbox, 13 lecturers and support professionals showcased their use of the tool functions in Blackboard. The event took the form of an exhibition with short 'firehose' presentations supported by exhibits in the foyer of the venue, where the audience could interact with the speakers. The event was opened by Prof Gerrit Stols, the Director of Education Innovation, and was very well attended (76 attendees). The snapshot presentations in plenary piqued the interest of the audience, and lively discussions followed at the exhibitions.



Toolbox event

The third event was called the Chatterbox and offered an opportunity for informal sharing of alternative assessment practices. Three lecturers (Prof Nigel Barker, Dr Christel Hansen and Dr Victoria Rautenbach) shared their innovative assessment practices.



Chatterbox event

The final FLY@NAS event for 2019 was a celebration of teaching excellence. The four departmental clusters in the faculty conducted competitions to identify the most outstanding lecturers for 2019. The criteria were set by the award organising committees, but generally required a short portfolio with evidence on the teaching philosophy and practice of the nominee

and their success. Seven awards were made and the award winners took the stage to share their 'good days' and 'bad days' in a fun and light-hearted way. Dr Louw was the programme manager, which ensured a very enjoyable experience for everyone involved. Prof Marietjie Potgieter used the opportunity to reflect on seven years as Deputy Dean in Natural and Agricultural Sciences, before stepping down in February 2020.

Cluster awards for teaching and learning launched

The University makes funding available for teaching awards as part of the development of academics as teachers, using the University Capacity Development Grant. The departments of Mathematics and Applied Mathematics and Statistics have an established culture of annual awards for excellence in teaching. During 2019 the Deputy Dean: Teaching and Learning invited the other three clusters to institute a similar award, one per cluster, to acknowledge teaching excellence in Physical Sciences, Biological Sciences and Food and Agricultural Sciences. The process was driven by small committees that developed templates and selection criteria to ensure fairness and transparency. The winners were then invited to the final FLY@NAS event for 2019, which was a celebration of teaching excellence.



Winners of Cluster Awards 2019

The cluster winners (shown in photo from left to right) were Heike Lutermann and Quenton Kritzing (Biological Sciences), Lizette Diedericks (Consumer Science), Jocelyn Mazarura (Statistics), Rory Biggs (Mathematics) and Lynne Pilcher (Physical Sciences).

T&L@NAS Bulletin going from strength to strength



T&L@NAS Bulletin

The first edition of the *T&L@NAS Bulletin* was published on 1 August 2018 and further editions were published in February and August 2019. The *T&L@NAS Bulletin* is the brainchild of Dr Rory Biggs of the Department of Mathematics and Applied Mathematics and Dr Ina Louw, the faculty's EC. The *Bulletin* contains short stories on teaching innovations, the use of promising new teaching technologies, as well as teaching approaches that have stood the test of time. A number of contributions have live links to a webpage or tools and a 'HowTo@NAS' guide

where readers can find stepwise instructions on how to implement these technologies.

The second edition, published on 2 February 2019, featured tips on how to manage noise levels in large classes (Carel Oosthuizen), trials and tribulations of Turnitin peer review in a large class (Erika Pretorius and Lou elle Ryan) and using videos for lectures and feedback (Janet van Niekerk), among other stories. The third edition, published on 1 August, boasted contributions from Natural and Agricultural Sciences and other faculties: Victoria

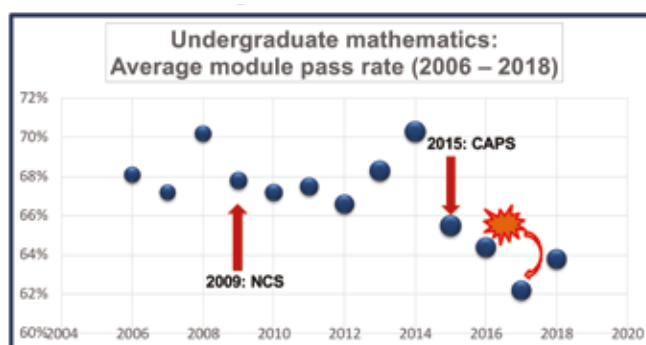
Rautenbach tried out the immediate feedback assessment technique in a final-year geoinformatics module; Est e van Marle-K oster explained how new plastinated models are being used to teach animal anatomy and physiology; Ronel Callaghan shared some details about the LLITUP Collaboratorium – a physical lab-space on the Groenkloof Campus where a variety of education technology, apps and software is available for exploration; Christel Hansen is tapping into the video market in GIS 310 by making videos with Snagit; Marina Kirstein and Rolien Kunz are creating collaborative classroom environments with Zeetings; Adriana Botha, the EC for the Faculty of Engineering, Built Environment and Information Technology, explained how iPeer is being used in a multi-departmental project to promote teamwork skills; Louis van Rooy required his students to take selfies with rocks for a geology assignment; Eder Kikianty is running a mathematics undergraduate seminar with group of enthused students; and Peter le Roux and Michelle Greve augmented BOT 251 with a website exhibiting SA biomes.

Enhancing student success in tertiary mathematics

Statistics released annually by the Department of Higher Education and Training (*Statistics on Post-School Education and Training in South Africa 2017*, March 2019) indicate that, annually, about 22 000 learners in both private and public schools achieve 60% or higher for both Mathematics and Physical Sciences in Grade 12. Of those, only 4 600 learners achieve 80% or higher for both subjects, which represents only 0,7% of all learners who wrote the Grade 12 examinations in a given year. It is from this tiny pool of matriculants that all higher education institutions in South Africa recruit students for their STEM programmes. It is widely acknowledged that student preparedness for tertiary mathematics and their subsequent performance and throughput in STEM programmes are a national challenge.

Student performance in mathematics is sensitive to turbulence in the secondary school system, such as the introduction of the National Senior Certificate in 2008 and the introduction of CAPS in 2014. Performance in mathematics also suffered greatly because of student protests and campus closure in 2016. It takes several years for the system to respond to such drastic changes, as can be seen in the graph attached.

Table 4: Undergraduate mathematics pass rate 2006–2018



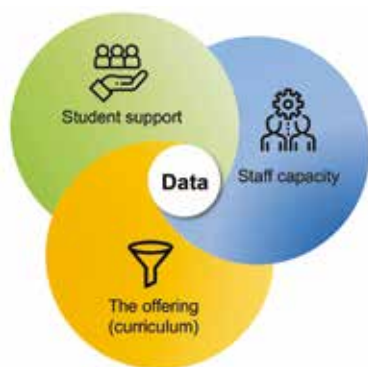


Figure 8: Holistic student support system

For the past five years, the Kresge Foundation has invested in student success in South Africa by means of Siyaphumelela grants to several universities. As part of this project, the managing organisation, the South African Institute for Distance Education (SAIDE), arranges a national conference for engagement between higher education institutions to share their findings and success stories. The Deputy Dean of Natural and Agricultural Sciences, Prof Marietjie Potgieter, was invited to present a keynote address at the 2019 Siyaphumelela conference on initiatives at UP to enhance student success in mathematics. In a talk entitled ‘Student success in tertiary mathematics: the multiple dimensions of institutional responsiveness’, she presented the Natural and Agricultural Sciences’ approach as consisting of three important components: refining the academic offering, integrating student support and staff capacity development. These three pillars are firmly supported by data analytics for evidence-based decision-making.

The vision for student support in mathematics is to guide students towards independence and self-regulation. According to Vincent Tinto, an international expert on student success, access without support is not opportunity. Students need support; yes, that is an imperative, but students should not remain in a position of dependence. The objective of support is empowerment. Students should take charge of their own learning and grow in confidence and commitment to assisting others. Peer-led learning is mutually beneficial; students providing assistance gain from it as do those who are assisted, and it increases the reach of support far beyond the capacity of lecturers.

This principle is demonstrated by two projects driven by the student advisor, Ms Mpho Mmadi, namely, the learning community for senior mathematics students and the Boiler Room in the Department of Mathematics. In 2018 Ms Mmadi established a learning community with strict rules for participation for senior mathematics students at risk of dismissal without a qualification. This group has achieved remarkable success: nine of the 17 students that formed the group in 2018 have either graduated or will graduate in April 2020; six are likely to complete their degrees in the next semester, and only two were dismissed. For the second project, the Department of Mathematics identified a small, unused lecture room to be

converted experimentally into a social learning space available to students at all times during the week. The old fixed seating was removed, all the available space on the walls was covered with white boards, and flexible furniture was provided. This room is called the Boiler Room, defined as a space of high intensity, where the real work of an organisation goes on unseen (Collins English Dictionary). There are no formal activities scheduled here. Students work alone or help others. Several years ago, the department established a club for undergraduate students, called Crypto Giants, to develop a pipeline of black students for postgraduate studies in mathematics. This group has now decided to make the Boiler Room their project. They offer voluntary assistance during afternoons to any student who might need it.



A particularly good example of how support turned into empowerment is the story of Ms Muvhuso Phatela, the Deputy Chair of Crypto Giants. She was on the brink of final dismissal when she joined the senior learning community. She started to achieve success, regained her confidence and is now leading the effort to assist others.

Holistic interventions to improve performance in HIMs

During the second semester of 2019, the Tshebi Committee (a data analytics subcommittee of the Senate Committee for Teaching and Learning) launched a project for a holistic analysis of factors that may impact on student performance in selected HIMs, modules with low pass rates in the institution. Three modules were identified in Natural and Agricultural Sciences: ZEN 261 (African Vertebrates), GGY 166 (SA Geomorphology) and WKD 164 (Climate and Weather SA). Module impact surveys, classroom surveys of student engagement (CLASSE) and focus group interviews were conducted to develop a holistic picture of where the challenges are and how they can be addressed. The lecturers made adjustments based on the data where possible. The result was improvements in student performance that ranged from significant to remarkable: 19% improvement for WKD 164; 27% for GGY 166, and 112% for ZEN 261. The impact of the gains achieved for ZEN 261 was evident in the 7,6% improvement of the module pass performance (MPP) for the Department of Zoology and Entomology in 2019 (2018 MPP 75,7%; 2019 MPP 83,0%). Another department that showed a significant year-on-year gain in student performance was Geology: 2018 MPP 69,3%; 2019 MPP 78,9%.

Faculty of Theology and Religion



The Dean, Prof Jerry Pillay: Choose the Faculty of Theology and Religion #ChooseUP

**UG
enrolments
631**

**Success rate
85,1%**

**Graduation
159**

The extra mile – student well-being

The University believes that student success is influenced by student well-being, whether physical or emotional. The Tshebi data committee continues to conduct research into well-being as part of its focus. The Faculty of Theology and Religion supports a nurturing attitude to students by academic and professional staff.

Anyone who has ever spent a day in the working world, whether at the office, in the laboratory or in front of a class, would agree that there is a certain satisfaction that comes from being surrounded by people who are good at their jobs, people

capable of reaching their vocational objectives and maintaining a professional attitude while interacting with others. Colleagues like this challenge us, while at the same time encouraging us to act like team players, remembering there is reason to celebrate when we all win together. These are hallmarks of staff working in the faculty.

In the Faculty of Theology and Religion at the University of Pretoria, however, such highly effective colleagues have become the source of unexpected challenges in recent years. The quality of teaching and student support in the faculty has resulted in a two-thirds increase in the number of students registering for one

of the three undergraduate programmes. Fortunately, the people working in tutoring and advising have helped to double the number of students who pass their first year so that they can press on towards graduation, meaning that students who have failed are not still in the system when the larger student numbers register each year.

Make no mistake, of all the challenges to be faced by any cohort of academics, more students and more student success are among the most welcome. Indeed, the additional students bring with them fresh perspectives to share during the teaching and learning process, new prospects for innovation down the research and publication road, as well as the potential for broader impact while engaging with the local community. They also bring themselves, in all their individuality and variety of backgrounds.

much as possible. If you are hungry, you can be directed to sign up for the SNAP programme, but if SNAP is full, the faculty has its own system in place to provide grocery vouchers for use at shops around campus. If students feel out of their depth and isolated when they arrive on campus, they can be matched with a mentor, but they can also go on one of the camps or retreats organised by the faculty throughout the first and second semesters. In other words, there is someone to walk with students of Theology and Religion, not only for the first mile of sustained personal well-being, but the extra mile as well, first guiding them along their way, then setting them up for success when they begin their careers.

Such graduates go on to serve the city, the nation and the world as teachers and counsellors, pastors and activists,

especially when that environment includes the type of people who lead by example, leaning into their work, going above and beyond the call of duty.

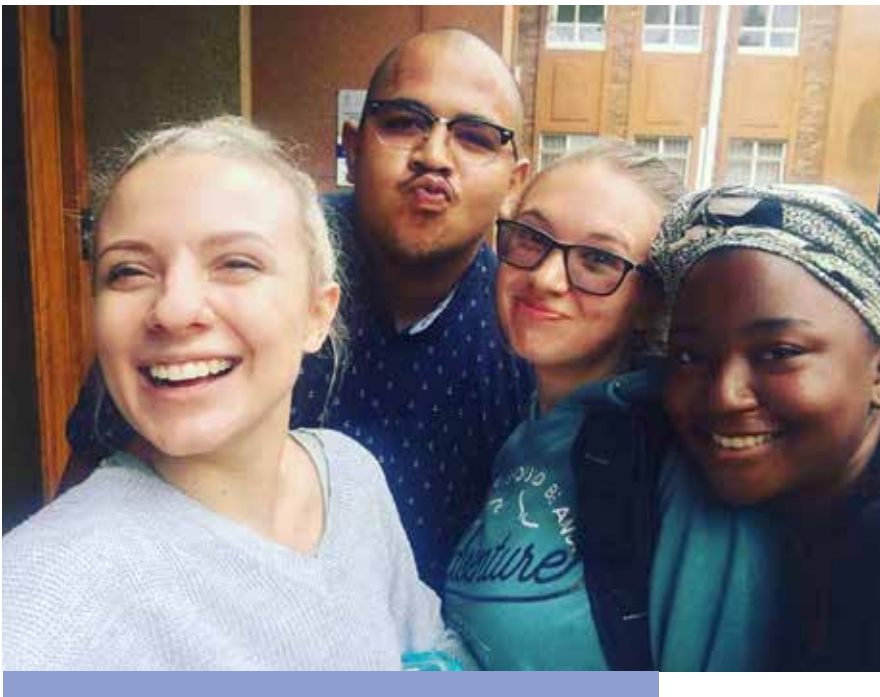
Dean's Merit Awards

On 15 November 2019, the Dean of Theology and Religion at the University of Pretoria, Prof Jerry Pillay, honoured several 2019 graduates for their exceptional achievement while enrolled as candidates in the various degree programmes offered by the faculty. Counted among their ranks were not only former undergraduate students, but also postgraduate students, all of whom had at least one common characteristic: their incredible success in scoring an average of over 75% in all the modules undertaken for every year of their academic studies.

Held in the auditorium of the Merensky 2 Library on UP's Hatfield Campus, the award ceremony itself was an afternoon to remember, complete with moving speeches from award recipients, top-notch catering from TUKS Res and medals of recognition handed out only to the most distinguished guests present. Prof Jaco Beyers, serving as the master of ceremonies on behalf of the Teaching and Learning Committee, ensured the entire event proceeded smoothly, while not neglecting the opportunity to also pause and reflect on its true significance.

Three, four or even more years of university education is no small undertaking, so earning sufficient marks to pass one's classes and reach the minimum of requirements for any given degree is of great significance. How much more noteworthy, then, is the accomplishment of those young men and women who rise to the top among their peers, mastering the course material with which they have been presented with such obvious distinction.

With graduates such as these, the future of theology and religion as an intellectual discipline is in good hands, as are the churches, schools and other faith-based organisations that these newly minted UP alumni have been deployed to lead.



Celebrating student well-being

For this reason, the leadership in the Faculty of Theology and Religion has renewed its efforts to shepherd the young men and women with whom it has been entrusted on their terms, tailoring campus-wide student support initiatives to fit their personal needs as

chaplains and missionaries. If they are to have any hope of adding value to the lives of the people they meet when they assume these positions, they will need to have experienced the kind of nurturing environment that the University of Pretoria can offer when it is at its best,



Prof Jerry Pillay, Dean, and students at the Merit Awards Ceremony

Inter-religious dialogue: The story of REL 310

As part of the centenary celebrations of the Faculty of Theology and Religion in 2017, world-renowned theologian Prof David Ford visited the faculty. He made a suggestion that the faculty consider establishing a Centre for Scriptural Reasoning as this might contribute to social cohesion in South African society.

The project was launched, beginning with a phase of investigation and information gathering. It became clear that there are two existing models for scriptural reasoning: the Cambridge model, which focuses on getting scholars and religious leaders together to discuss topics highlighted by religious texts, and the Amsterdam model, which attempts to gather students (under- as well as postgraduate) from different religious affiliations to discuss topics highlighted by religious texts. The latter model suited the faculty's needs best.

The reason was that the South African context presented some unique challenges to implementing scriptural reasoning. In South Africa, it would be of paramount importance to include African religion as a dialogue partner. The problem, however, is that African religion does not have a canonical sacred text. The solution was to turn to a recent development in religion studies to find a solution. Material religion is the study of the expression and manifestation of religion. For too long, religion focused on the beliefs and not the practices of religions. Material religion presented the opportunity to view religion from a broader base and include such elements as rituals, customs and practices in studying religion.

With support from the Scriptural Reasoning Centre in Cambridge, the faculty was able to select texts from the main religions (Islam,

Christianity and Judaism) pertaining to particular topics. Texts from the Qur'an, Tenakh and Bible were selected. Academic staff had to do their own research into African religion to find information on the chosen topics. The end result was the selection of five topics: dreams, clothes, food, encountering God and reconciliation, which would be highlighted from different religious perspectives. The content of the module REL 310 was developed with all the relevant requirements in mind.

During 2019, the first course in Scriptural Reasoning was presented at the University of Pretoria. The module REL 310 started with 21 students.

The semester course began with an introduction to definitions and understandings of religion, material religion and scriptural reasoning. After the completion of their theoretical studies, students engaged in a practical experience of scriptural reasoning.

An appropriate venue conducive to dialogue was necessary. The traditional lecture halls at UP tend to favour monologue lectures. A seminar room in the library, more suitable for the needs of a roundtable discussion, was booked and the class gathered in this venue.

The first meeting of this group introduced the students to the rules of engagement in scriptural reasoning. Scriptural reasoning creates a non-threatening environment where the goal is not to critique different religions but to learn how and why others view matters in a particular way. The end goal is to have participants engage in conversation on much more than the selected topics for lectures, and to encourage inter-religious dialogue on social matters.

For the remainder of the module, the selected topics were discussed as viewed from the sacred texts of different religions. The lecturer served as facilitator for the engagement between students from different religions. From the African religion perspective, relevant Internet articles were made available to students and presented on a screen during sessions. The focus was mainly on visual media, with photographs depicting different clothes with religious symbolism, taboos on food and human interaction. The discussions on dreams and encounters with God led to a discussion on worldviews. Students from different religions could then explain to each other the similarities and differences pertaining to the different topics. The discussion on food, clothing and dreams created the liveliest conversations.

Assessment of the module was by way of continuous assessment of class participation as well as formal assessment of a written examination. After lectures, students had to write a short essay on the topic discussed during class as their particular religion perceives it. Students could even decide to write an essay on any religious perspective. This was done in order to accommodate students who preferred to have no religious affiliation. An attempt was made to have students prepare the reading material prior to the lecture, followed by a discussion on the material during lectures and an assessment on the topic discussed after lectures. In this way, the teaching model of UP was implemented.



Scriptural reasoning group

Achievement of the outcomes of the module is, in one way, difficult to assess. Of course, the academic achievement of outcomes can be assessed, but the implicit outcome of social cohesion and religious tolerance is difficult to determine. Students exhibited an attitude of tolerance and openness to learning from others in class. Whether this attitude was perpetuated after class is impossible to discern.

Students did get to know more about the customs and practices of other religions. Knowledge was conveyed in a peer-learning environment where students from particular religions could explain and elaborate on the perspectives of the various sacred texts of the different religions. By way of comparison, students had an opportunity to be self-critical of their own perspectives on

customs and practices. Students had the opportunity to discover and become aware of the uniqueness and sincerity of other religions.

By participating in dialogue in a controlled and facilitated environment, students learned to be tolerant and open to the perspectives of others. In the end, REL 310 not only wanted to teach about religion, but to instil an attitude of awareness and openness towards differences and others.

As the module will be repeated annually, more students will get the opportunity to be exposed to learning about other religions in a non-threatening way.

Professionalising teaching

Academic staff success was a University focus during 2019. A range of activities and opportunities was available. The Faculty of Theology and Religion added faculty-specific opportunities as well. Improved teaching, assessment and student success are the desired long-term outcomes.

During 2019 two staff training events were held. At the first of these, on 21 August, Dr Ina Louw, an EC, delivered a two-hour presentation based on the book by Ambrose et al (2010): *How learning works: 7 research-based principles for smart teaching*. She dealt with all seven principles but focused particularly on the importance of prior knowledge and cognitive load to learning.

The second event was a workshop held on 31 October, where the faculty's EC, Ms Carol Gossmann, organised a one-day workshop on the topic, 'Re-imagining your own curriculum', based on UP's four transformation drivers. Dr Irene Lubbe, another EC, facilitated the process. Academics had to suggest strategies that they would use to address the four transformation drivers. Some of the positive responses included the following: collaboration and critical self-reflection (social responsiveness), make local realities and global trend connections and draw on African examples and expertise (epistemological diversity), more group work that demonstrates diversity and implement hybrid approach (renewal of pedagogy), and create opportunities or space for open debate in class (institutional culture of openness).

All academic staff attended the workshop and responded positively. A follow-up session on transformation was requested by staff members. This will be considered as part of the 2020 teaching and learning development programme within the faculty.

The annual one-day Teaching Lekgotla hosted by the Dean of the Faculty of Theology and Religion serves as a planning session for the teaching load in the faculty. During 2019 the Lekgotla was attended by all academic staff as well as representatives from all church partners. The development and planning of the curriculum formed the main item on the agenda. The Lekgotla contributed to awareness about curriculum: content, teaching, assessment and student success.



The Dean, Prof Vinny Naidoo, the Deputy Dean: Teaching and Learning, Prof Dietmar Holm and the final-year class with a record 171 graduates

Faculty of Veterinary Science

UG enrolments
1 417

Success rate
97,7%

Graduation
290

Teaching philosophy

The Faculty of Veterinary Science aims to deliver career-ready graduates with the necessary day-one competencies to serve the diverse South African community by promoting animal well-being, public health and food security.

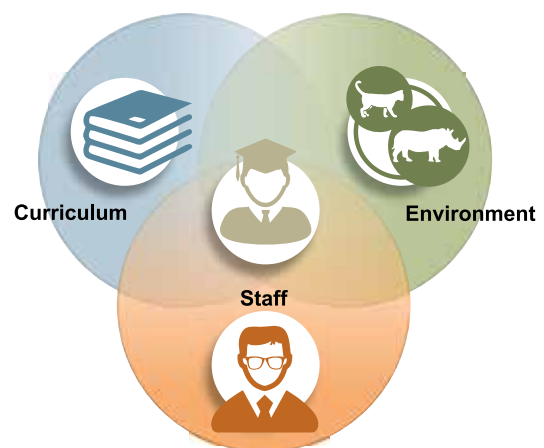


Figure 9: The educational ecosystem

Curriculum

The teaching and learning approach of the University of Pretoria, and therefore the Faculty of Veterinary Science, is based on inquiry-based learning in a hybrid learning environment – a combination of online and face-to-face teaching, the latter on campus, in communities and in workplaces. A student-centred approach, within the hybrid learning model, serves as the foundation on which new skills are built.

a nursing graduate should reach and is a spiral, integrated curriculum. Nursing professional life and clinical nursing skills are the golden threads that are present throughout this programme.

Curriculum development in the faculty is not a static event. Curricula are constantly under revision and are informed by the needs of the profession, international and national trends and a future vision to ensure that the training is on the leading edge of veterinary developments.



The Dean, Prof Naidoo, in two practical learning environments: high tech and high touch

The faculty delivers internationally competitive graduates from two undergraduate programmes, namely the Bachelor of Veterinary Science (BVSc) and Bachelor of Veterinary Nursing (BVetNurs) degrees. Several postgraduate programmes are presented in the form of postgraduate diplomas, master's and PhD degrees.

The BVSc curriculum is based on the day-one competencies a veterinary graduate should possess and consists of a scaffolded curriculum. Veterinary professional life modules are presented in each year of study, which aim to prepare students to deal with the diverse challenges of a career in veterinary science. Students are developed as balanced individuals and the focus is not only on academic training but on life-long learning.

Enhancing students' research skills is a golden thread that is present throughout the curriculum. After graduation, students are placed in communities for one year on a compulsory community service programme under the auspices of the Department of Rural Development and Land Reform.

The BVetNurs curriculum is based on the day-one competencies

An evidence-based approach is followed in teaching and assessment, and staff members are encouraged to do scientific research about their teaching and assessment.

Staff

The professional development of academic staff with regard to teaching and learning is a priority. The same learning principles as described for students are applied to professional development and the training of academic staff. Academic staff members are not only experts in their different scientific fields, but are also evaluated on their teaching performance and therefore they are expected to develop a teaching portfolio. This portfolio contains evaluations by students, peers and education specialists, as well as information about any innovative teaching practices they have developed or implemented. Educational practice is also informed by research, and staff members are encouraged to research their teaching practice as part of their professional development. SoTL grants are made available for this purpose. Educational support is available in the faculty by staff members from the Department for Education Innovation.

Excellence in teaching and learning is recognised in the faculty as well as in the institution – staff members are nominated for faculty, institutional and national awards.

Environment

The faculty aspires to contribute to the relevant sustainable development goals of the United Nations and has a social responsibility towards South Africa, especially since it is the only veterinary faculty and it contributes towards economic growth in the country, rural farming development, animal well-being, public health and food security. The well-equipped hospital not only provides clinical training to graduates, but also provides a service to the community.

to have a diverse student body that will contribute to a variety of communities after graduation.

Student support is high on the agenda and is presented in different formats. Tutors play an important role, while student feedback is taken into consideration in any curriculum changes that may be implemented. Students have a voice in the faculty in the form of the Onderstepoort Veterinary Student Council, and they have representation on all teaching and learning committees.

Students are prepared for the changing environment. They are encouraged to participate in different extra-mural activities



The faculty runs an animal clinic at Mamelodi Campus for local community members

The faculty is responsive to changes in society and the teaching and learning environment; therefore, feedback from all role-players, including students, is taken into consideration with regard to teaching and learning. The faculty is also a leader in the veterinary field in Africa and is recognised as an important role-player internationally.

Students

Students are obviously at the centre of the faculty's academic activities. They are admitted after a rigorous selection process, and entry into the programmes is highly competitive owing to limited available spaces. Some international students, including students from neighbouring Southern African Development Community (SADC) countries, are admitted. The faculty aspires

available on campus and develop a balanced lifestyle. The aim of the student-centred approach is to enhance problem-solving skills and develop students as dynamic members on the leading edge of the scientific community.

The teaching philosophy of the Faculty of Veterinary Science is informed by the curriculum, the staff and the environment, with the aim to deliver veterinary scientists of the highest quality.

Faculty Teaching Excellence Awards

The Faculty of Veterinary Science annually presents a set of faculty awards in recognition of teaching excellence and innovation, and also to stimulate academic collaboration within modules.

New Lecturer of the Year



Dr Ned Snelling

This award is presented to a lecturer who has been employed in the faculty for a maximum of five years. Nominations are based on the scores achieved through the official student lecturer feedback system, and the winner is determined through a student vote.

The 2019 recipient was Dr Ned Snelling. He states: 'I really enjoy learning and discovering how things work, and I think students quickly pick up on that'.

Nursing Lecturer of the Year

This award is presented to a lecturer teaching in the faculty's veterinary nursing programme. Nominations are based on the scores achieved through the official student lecturer feedback system, and the winner is determined through a student vote.

The 2019 recipient was Dr Jennie Hewlett. In her own words: 'I endeavoured to teach in a humorous but sincere manner, where students were comfortable to ask questions or discuss work. I also tried to focus on directly applicable aspects of pharmacology and to present context to the theory, so as to facilitate learning and also to emphasise why this information was important to know'.

Lecturer of the Year

This prestigious award is presented to a lecturer teaching in the faculty's veterinary science programme. Nominations are based on the scores achieved through the official student lecturer feedback system, and the winner is determined through a student vote.

The 2019 recipient was Dr Johan Steyl. In reflecting on his teaching, he says: 'If you do not know why you need to know what you just got taught, then it's not worth remembering ...I try very hard to transfer my experience rather than reciting the literature. Enthusiasm and honesty are key'.

Faculty Community Engagement in Education Award

This award is presented to the team or individual demonstrating the best community engagement project within the faculty. The winner is determined through an official application process, assessed by a panel of experts and previous recipients. The project needs to demonstrate clear benefits to students as well as to the community, and must include evidence.

The 2019 recipient was Dr Alfred Kgasi, for the Primary Animal Healthcare (PAHC) clinic, presented as part of the clinical training programme for final-year veterinary students.

Project summary for PAHC

Community engagement takes place during the PAHC rotations that are held once or twice every month as part of the Veterinary Core Practice module (VCP 603). There are +/-30 farmers trained during each PAHC rotation week. The training session takes place over a period of four days and involves an in-class theory session and a practical session. The training is planned and organised by Dr Alfred Kgasi through prior engagement with stakeholders and leaders in the community. Students are given an opportunity to train farmers under supervision and guidance. Practical sessions are done at the farmers' households using their own livestock and available infrastructure. Training material is translated into applicable local languages and is provided to farmers as learning aids. The material is regularly updated with new knowledge and research findings to ensure relevance and appropriateness to meet ever-evolving farmer needs. Students are required to compile a report and present it before the lecturer during their last day of the rotation. This serves as a form of assessment on what they have learned and what thoughts and reflections they have on the philosophy and principles of PAHC.

Impact on students

Students learn about the concept of PAHC and how it can be leveraged to support community development and veterinary skills transfer. They learn how to 'Formulate an extension strategy for a given community scenario' as part of their learning outcome in the VCP 603 module. The students also get to understand their role and relevance as veterinarians in the community. Many misconceptions that students have about their role in communities are changed as they get to appreciate how crucial their impact is, or can be, on communities. The students do the actual training of the farmers on various animal health and production topics such as early disease identification, disease prevention and production planning. The students are also taught the methodology of organising successful farmers' days, implementation of veterinary extension strategies and best practices in community engagement.

Impact on community

Agricultural production plays an important role in promoting

rural development, improving food security and poverty alleviation, especially in rural areas of the country. PAHC training provides communities with knowledge and skills related to good production and health management practices of livestock. The skills imparted are practical interventions that can be undertaken by a farmer on an ongoing, daily basis to maintain health and production of his/her livestock. The livestock owners also gain an understanding of products that are available for treating the most common treatable or preventable diseases. Farmers are trained on how to administer medicines correctly and the importance of record keeping. The farmers who have been trained have now started to market their animals at the local livestock auctions and are beginning to realise the income-generating value and potential of their livestock.

Faculty Open Educational Resources Award

This award is presented to the team or individual who created the best open educational resource (OER) project within the faculty. The winner is determined through an official application process, assessed by a panel of experts and previous recipients. The project needs to demonstrate clear benefits to students as well as the wider international veterinary education community.

The 2019 recipient was Dr Geoff Brown for the series of OERs created in the module Veterinary Reproduction (VRP 400).

OER summary

Resources were created within the VRP 400 module, consisting of narrated videos and case studies from applied anatomy and physiology of reproduction in cattle to the pathology of reproductive disorders in cattle and sheep. Using clickUP, an integrated lesson was created for the students, which consisted of video lectures and references to annotated PDF documents

of review articles. Narrated videos of practical procedures were created (calving and foaling assistance) for viewing by students. These were made available on YouTube under a Creative Commons licence. The materials are supported in a hybrid teaching approach by a contact session in a traditional classroom lecture setting, or followed by a practical training session in the clinical skills laboratory.

All through the years: Veterinary nursing, from diploma to degree

The University of Pretoria has a proud history of education of veterinary nurses, given that it is the only tertiary institution in South Africa that provides training for veterinary nurses and veterinarians.

During the late 1960s, the South African Veterinary Association investigated the feasibility of training veterinary nurses, then approved a curriculum (at that stage called a 'syllabus') and requested that the University introduce a full-time, two-year university diploma course. The qualification was to be named the University Diploma in Veterinary Nursing or DipCurAnim. The first students were admitted in 1977. A maximum of 30 students, only women, was to be selected annually.

For ten years the nurses were awarded their diplomas under this name. However, in 1988, the Committee of University Principals decided that Latin names should be reserved for degree courses only. The name of the programme was therefore changed to DipVetNurs. In 1995 the number of students admitted to the course was increased to 36 students per year, and male students were now also eligible for selection. The DVN curriculum was revised in 1994, and implemented in 1995. No subsequent changes were made to this 1995 curriculum.



Typical setting of veterinary nurses busy with clinical work in the Onderstepoort Veterinary Academic Hospital

The Veterinary Nurses Association of South Africa petitioned the UP to discontinue the two-year diploma programme and institute a three-year degree programme, to afford those students with a qualification in veterinary nursing the opportunity of postgraduate training, which was not available to veterinary nursing diplomats before. After a very lengthy and intricate application process, the BVetNurs degree, a professional three-year bachelor's degree, was accredited by the Council on Higher Education in August 2017. Curriculum design of the degree started in November 2017. The last intake into the DVN programme occurred in 2018, when 59 students were admitted.

The curriculum for the first two years of the degree programme was designed during 2018 and 2019, with the design of the third (and final) year to take place in 2020. 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, were considered.

The degree is designed as a spiral, integrated curriculum, whereas the diploma followed a siloed approach. This modern curriculum approach 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. Themes are revisited and reinforced, with horizontal integration between parallel disciplines and vertical integration between disciplines and topics normally taught at different phases of a siloed-approach programme. It is grounded in the constructivist approach, where students construct new knowledge and skills in an active way.

A backward design approach 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 constructively aligned. BVetNurs I introduces general veterinary and basic nursing principles; BVetNurs II advances from system-specific nursing to multi-systemic diseases and intensive care nursing; and BVetNurs III is the clinical year, with rotation through the Onderstepoort Veterinary Academic Hospital and approved veterinary facilities. During the curriculum design process, overlaps, redundancies and omissions in the diploma curriculum were identified and improved, and the scope of the programme was expanded to reach the three-year degree programme.

Evaluation and review of the newly designed curriculum is an iterative process, based on student (online module evaluation), lecturer (focus group discussions) and external moderator feedback, complemented by other forms of student, graduate and employer feedback.

The main strength (and also an innovative aspect) of this new curriculum lies in the spiral integrated educational approach, which allows a deeper understanding of content and provides mixing of content between disciplines, to facilitate a smooth transition between clinical understanding and application of real-life, multidisciplinary problems and cases. Another strength is that time is allowed in the official daily lecture roster for self-directed study, thereby shifting the approach to student-centred learning and away from the historical lecturer-centred teaching. A greater emphasis has been placed on hybrid teaching and learning, whereby some face-to-face contact time has been replaced by online learning activities.



Another typical setting of veterinary nurses busy with clinical work in the Onderstepoort Veterinary Academic Hospital

The BVetNurs degree was implemented in February 2019, with the enrolment of 40 diverse students, and allows articulation to a postgraduate diploma in veterinary nursing.

Since 1977, the University has qualified 1 170 veterinary nurses, who are increasingly sought after locally as well as internationally. They have proven themselves to be indispensable members of the veterinary healthcare team and have added enormous value in veterinary practices and hospitals, animal welfare organisations, the agricultural sector, wildlife organisations, zoological gardens, research institutions, pharmaceutical and other industries, to name but a few. Some veterinary nurses have diversified into fields such as specialised production animal practice, pet grooming, boarding and breeding establishments, animal behaviour, animal rehabilitation and the training of dogs for the blind, where they have adapted their knowledge to suit their working environments.

The training of veterinary nurses at the University of Pretoria has been a success owing to the dedication and commitment of numerous role-players over the years. The recent implementation of the BVetNurs degree heralds an exciting new chapter in the education of veterinary nurses in South Africa, and will provide many opportunities for further growth and innovation.



Dean, Prof Nthabiseng Ogude, welcomes Vice-Chancellor and Principal, Prof Tawana Kupe to Mamelodi Campus

Mamelodi Campus

Registration

748

(NAS: 501 students
and
EMS: 247 students)

Success rate

NAS: 86,7%
and
EMS: 93,3%

Tenth anniversary of extended curriculum programmes

The Mamelodi Campus celebrated ten years of extended curriculum programmes (ECPs) during 2019. Several activities took place to celebrate this milestone including the development of a customised UPO module launched during orientation week, a second orientation day in October to prepare students for their transfer/transition to mainstream programmes, and the hosting of the National Colloquium on ECPs.

In addition to these activities, the annual workshop with heads of department from Natural and Agricultural Sciences and Economic and Management Sciences to evaluate the previous year, 2018, and plan for 2019, was held a week prior to orientation week. A significant decision from this workshop was that heads of department or senior professors in the departments should present the first lecture and, if possible, a few more lectures to ECP students. It was also decided in 2019 to include all third-semester lecturers to become part of the Inter-Faculty Academic Committee for Mamelodi Campus from 2020.

A number of regular activities to support staff and students' teaching and learning took place, including a staff seminar series, sharing best practice from national teaching and learning conferences, teaching and learning days, two writing retreat days and, finally, a highly successful #ChooseUP Day.

On 14 and 15 August 2019, the Mamelodi Campus hosted 150 delegates from 14 universities at the National Colloquium on ECPs. Over the two days, there were two plenary presentations, one of which was presented by the Dean of the campus, Prof Nthabiseng Ogude. There was also a panel of ECP alumni and 41 parallel papers. The colloquium was opened by the Vice-Chancellor and Principal, Prof Tawana Kupe. Ten UP staff, seven from Mamelodi and three from the Faculty of Engineering, Built Environment and Information Technology's augmented programme (ENGAGE), presented papers at the colloquium.

Student success – the desired outcome

In 2019 there was a decrease of 9% in the student intake, from 820 in 2018 to 748. This partially reversed the 28% hike that occurred between 2017 and 2018. The campus teaching team worked hard to maintain the target 85% pass rate in all modules. The overall 90% average pass rate for 2019 showed a 2% improvement on that of 2018. However, as in previous years, the pass rate in both mathematics modules was again below the 85% target level. The pass rate for the pre-calculus course (WTW 133) was 71% and for the calculus course (WTW 143), 77%. Although falling below the target, the pass rate for WTW 143 was 10% higher than in 2018. In 2018 it was noted that the WTW 133 module included commerce students with Level 3 passes in Grade 12 mathematics. To cater for the mathematics needs of these students, a new module called Basic Business Mathematics



Delegates attending the National Colloquium on ECPs

The ECP alumni panel was particularly well received. Four successful ECP students, two from ENGAGE and two from Mamelodi Campus, presented their views on how the ECP experience had contributed to their success.



Student panel at National Colloquium

(BAM 133) was approved in 2019 and is being introduced in 2020 for students registered for a non-numerical BCom degree. It is thus expected that the pass rate of the WTW modules will meet or exceed the 85% target in 2020.

In 2018, the pass rate on two compulsory and strategically important modules – language and study skills (LST 133) and calculus (WTW 143) – dropped by more than 3%. In 2019, this decrease was reversed in both modules. Other improvements between 2018 and 2019 were as follows: LST 143 (91% to 94%), LST 133 (84% to 89%), WTW 144 (85% to 92%) and WTW 143 (67% to 77%). The Business Management modules OBS 133 and 143, the Physics module 144, the Statistical Mathematics module and Academic Management AIM modules have over the last three years recorded pass rates of at least 90%, with OBS 133 as high as 98% in 2019.

Staff on Mamelodi Campus believe that student success is measured not only according to pass rates, but also by an increase in students' skills and abilities to work independently. They believe that effective teaching is done through careful

monitoring and dealing with misconceptions as they appear. They maintain a focus on meeting students' future needs through the development of capabilities such as self-directed learning, critical thinking, complex problem-solving, teamwork and digital fluency. They also acknowledge that effective teaching also means successfully filling the gaps in knowledge and skills that students bring from school. To this end, a change from procedural thinking to conceptual thinking is considered necessary and lecturers implement specific strategies in their teaching and learning. For example, active learning is encouraged in both lectures and tutorials. For physics, teaching, tutorials and laboratory work are combined in one integrated teaching process.

Orientation week

Approximately 600 students attended the orientation week, with 77% on average attending all five days. During orientation week, eight alumni students assisted daily with the planned activities such as the campus tour and the treasure hunt. The alumni panel discussion, which included speeches of encouragement from two students in ENGAGE and three students who commenced their studies in the ECPs, was well-received by students, scoring the highest percentage as the most useful session. The main purpose of the session was to reassure students who had doubts about their future on Mamelodi Campus. One student said about the presentation: 'It made us feel at home and forget about the discouragement about the campus. I really learned a lot of things and my determination has risen from the wise words.'

Students received a package containing the orientation week programme, bus schedule, semester-test timetable, University of Pretoria rules and regulations and a specially designed Mamelodi bookmark as a communication tool to assist them with all the contact information of relevant people and available services on the campus. These

bookmarks were compiled and designed by Mr Vincent Mabuza and Ms Nthabiseng Mogase.

Below are some views from students about the OW:

Student 1: I really appreciate the orientation week at UP, it's so informative, it lifts up your confidence for the journey that commences.

Student 2: The programme is informative and I would highly recommend it.

Student 3: The tour should have been more informative in a sense of we should have got a chance to actually see the lecture rooms and the IT labs.

Second orientation

On Saturday, 26 October, 407 students from the BCom and BSc streams joined Student Support, Mamelodi Campus, for a second orientation. This orientation was focused on retaining students in their initial faculties and providing transition and transfer information for the following year.

The programme included inputs on transfers within and across faculties for 2020. Presenters were senior administration staff, teaching staff from different departments and the senior FSA.

Once more, Mamelodi Campus alumni gave the 2019 student cohort pointers on how to adjust at Hatfield. Topics such as class attendance, the importance of time management, how to build relationships with friends who take their academics seriously, where to go for help and some slogans led to positive student engagement.

The alumni input was followed by standing ovations as the top performers in various first-semester modules were acknowledged by Prof Thulani Hlatswayo. The awardees responded by saying that the awards motivated them to do better in the second semester.

Finally, students had the opportunity to visit various information tables before everyone enjoyed a free lunch in the cafeteria.

The hybrid approach and curriculum innovation

There have been signs of increasing buy-in by staff to the use of blended learning approaches. Lecturers in chemistry, accounting, language and study skills, business management and academic information management make use of either YouTube videos or videos created in-house. A number of disciplines (business management, language and study skills, physics and biology) have access to the exercises and activities of the McGraw-Hill Connect platform (integrated into clickUP), while mathematics students can access their online homework on WebAssign in the IT Labs. Webassign is a Cengage product that is used widely at first-year level in the Department of Mathematics, and it accompanies the textbook that is used for WTW 133 and WTW 143. Experience with Webassign is positive, and it has proved to be successful both from the lecturers' and the students' perspectives.

In 2019, lecturers involved in Business Management (OBS 133/143) co-created and customised the modules' content on the McGraw-Hill platform, and computer-based summative assessments were introduced into the modules. Similarly, the team involved with Molecular and Cell Biology modules (MLB 133/143) incorporated the McGraw-Hill built-in pre-lecture preparation (Learnsmart), post-lecture quizzes and Learnsmart labs into their modules.

Chemistry tutors were encouraged by the lecturer to use active digital platforms during their tutorials. Improved attendance has been seen in one tutorial small group where the tutor used Kahoot (an audience polling system) towards the end of 2019. In physics, clickUP was used in three modules as a mode of communication and assessments. For PHY 144, clickers (tool for audience response) were introduced to enhance student participation in lectures.

ECPs' interdisciplinary project on Sustainable Development Goals

In a continuous effort to help students see links between their subjects and the relevance of their studies to the real world, the LST team at Mamelodi Campus participated in a collaborative community-based project with partners in Business Studies, Statistics, and the Graduate School of Technology Management. The aim of the project was to empower students to resolve a real-world problem in the Mamelodi community, using academic resources and knowledge at their disposal. Approximately 40% of Mamelodi Campus students participated in this project. Three hundred and twenty commerce students applied their learning from business management and statistics to academic literacy (through their LST module) and participated in a community-based project built around the United Nations' SDGs. The lecturers developed topics that addressed aspects connecting the three subjects. Students were required to design and administer a questionnaire to a selected population, and they then analysed the responses. These data, along with a literature review and an application of the knowledge gained in business management, were used to solve a management-related problem that is aligned to the SDGs at an early childhood development centre. The end result was a case-study report used for assessment. A collaborative project guide has been developed so that one unified project is presented to students, explaining how the three subjects integrate, and the responsibilities and areas of focus of the various subjects.

Support for students

To help students with academic difficulties or queries, the FSA team introduced a customised UPO module during the orientation week in 2019. This module is a source of information; students make their appointment with the FSA when needed and 'at-risk' students are called in to consult even though different platforms are used to identify them. This module is

also primarily used to introduce students to the University and all its support structures. As part of this module, the FSA team organises sessions for transfer information to various faculties. A new online booking system was introduced for students to enable them to book available slots on Google Calendar. The online booking system has streamlined the workload of the FSAs.

In 2019 the campus embarked on a project to manage student success deliberately. A rigorous interrogation of historical student performance data culminated in a data-led student success management tool called the Mamelodi Referral System (M-RS). The system draws from the institutional student success initiatives to operationalise a case management tool customised for the context of ECPs. The system draws students' continuous assessment scores from clickUP and analyses the data based on the criteria stipulated in the referral system policy. The outcome of the analysis, which is further reviewed by the teaching staff,

to students at risk of failing or performing below the transfer requirements of the programmes they wish to transition into. The M-RS was presented at the 2019 Siyaphumelela conference as an invited address. The system will be developed further in 2020.

#ChooseUP Day: Choose Mamelodi Campus

The successful 2018 plan was revised by Ms Ida Meyer, the FSA, leading to an even more successful 2019 #ChooseUP Day. Three buses filled to capacity arrived just after 13:00 to tour the campus and attend the Dean's session for more information about the programmes. Prof Theron, Head of the Physics Department and acting Dean, told parents about many successful students who started at Mamelodi and have now graduated and entered postgraduate studies with good marks. He also mentioned that his own son had studied on Mamelodi Campus and that, if faced with the same choice, he would send him to the campus again.



Parents and prospective students tour Mamelodi Campus

informs the nature of support offered by the advisor to the students. In this way, the system is geared towards providing guided pathways and just-in-time support

Four bursaries of R10 000 each were given out to prospective students as part of a lucky draw. These students and parents were overwhelmed with joy.



Drawing of bursaries for prospective Mamelodi students

ECP lecturers and alumni interacted in a friendly and welcoming manner with prospective students, answering questions. Parents mentioned that the alumni put their minds at ease about their sons and daughters entering Mamelodi programmes. Safety concerns were mentioned but the parents relaxed on hearing that there had been no incidents in the last ten years and that the campus itself was very safe and respected by the community.

#ChooseUP was a strong teamwork effort with lecturers, administrative staff and alumni working together under the guidance of Ms Ida Meyer.



Prospective students had the opportunity to see Mamelodi's teaching facilities



High tech at Mamelodi campus

Achievements

In 2019, the following staff achievements were celebrated:

- Dr Thulani Hlatshwayo, physics lecturer, was promoted to the rank of Associate Professor.
- Ms Nandi Weder, LST lecturer, was one of the three South African scholars awarded a scholarship from the University Staff Doctoral Programme (USDP), which included attendance at the first cohort meeting in Gordon's Bay and a subsequent visit to Rutgers University-Newark in the USA.
- Ms Nandi Weder and Ms Marguerite de Waal were awarded a SoTL grant by the Department for Education Innovation.
- Ms Marguerite de Waal, LST lecturer, was selected through the Alexander von Humboldt Foundation to participate in a summer institute in Cologne.
- Mr Lindo Magagula, mathematics statistics lecturer, won the best first-year lecturer award in the Faculty of Natural and Agricultural Sciences. This was a first for Mamelodi Campus as this award is open to both Mamelodi and Hatfield Campus lecturers. One of his students said the following on the nomination form:

The way he is organised and just the way he delivers the content is extremely amazing. He encourages us in different levels, but most importantly, he motivates us not to give up on our desired degrees, regardless of the challenges we might face.

- Publication: Ogude, NA; Meyer, IJ; Mwambakana, J & Mthethwa, NE. 2019. Can extended curriculum programmes be improved through engagement with students using appreciative inquiry? *South African Journal of Higher Education*, 33:4: 219–236.
- Publication: Dr Thabsile Thabethe, physics lecturer, published a series of mathematics and physics books for toddlers entitled: *Making it fun at the earliest ages*. These books are aimed at introducing toddlers to and familiarising them with these subjects from an early age.

Teaching and learning days

Academic staff development is a priority for staff success. Teaching staff from Mamelodi ECPs and ENGAGE meet twice a year to participate in teaching and learning days. The campus also hosted a national conference for ECP.

Classroom management and the new study guide template were chosen as topics for the first day, hosted by ENGAGE on 31 May. During the workshop, staff members shared ideas on how to improve students' performance in 2019 and beyond. Poor lecture attendance, students' disruptive behaviour and their lack of motivation in 2018 were among challenges faced by lecturers. Following this workshop, the ECP Study Guide Template was revised in accordance with Education Innovation's guidelines.

The topics for the November day were in line with the FLY@UP campaign: active learning, presented by Prof Rollnick (Mamelodi research fellow), and a step-up approach for transition students, presented by Prof Potgieter (Deputy Dean: Teaching and Learning for the Faculty of Natural and Agricultural Sciences). Prof Rollnick told participants: 'If students are not actively involved in their own learning, they will not show a conceptual approach to their material or be able to attach meaning to it. The natural result of lack of meaningful learning will be rote learning, leading to short retention and poor understanding.' Students need to engage personally with material in order to understand and internalise it. Prof Potgieter reminded participants that as students progress with their studies, they receive less formal input and are expected to work more on their own. She urged participants to prepare students for the step up by gradually adjusting the demands of the programmes to enable students to become more independent learners who are able to manage their time and study habits.

Gordon Institute of Business Science

**Top South African
and African
business school**

May 2019, *Financial Times*
Executive Education Rankings

**GIBS
executive MBA
Top 100 globally**

October 2019, *Financial Times*
Executive MBA Rankings



Basking in success - Walmart Graduation, April 2019

Case study teaching at GIBS

Case teaching is an important component of a business school's teaching methodology as this method enables students to engage with practical management decisions. Cases are not simply good stories; they provide opportunities to apply theory to real-life problems or dilemmas. In addition to using case studies regularly in its classes, GIBS is also a producer of high-quality cases that enable it to offer students a deeper insight into making decisions in the African context. Not only does the production of case studies create valuable pedagogical material, it is also an opportunity for academics to engage with business and to collaborate with each other and lecturers from other institutions.

Since 2017, GIBS has produced in excess of 20 cases that, in addition to being prescribed by the school, are used by business schools across the continent and in other global markets who want their students to learn more about doing business in emerging markets. In addition to examining how traditional management dilemmas can be addressed in the African context, GIBS case studies also focus on themes that are really close to home like social entrepreneurship, state capture, innovation in emerging markets and the role of government relations in business. It is not only GIBS students who appreciate the case studies; corporate clients also welcome the opportunity to embark on the case-study process with GIBS as it gives them the chance to showcase their organisations across the world.

In 2019, GIBS created the Case Study Hub to improve and enhance case writing and case studies through setting up a formal structure to mentor, guide and manage quality control of cases published under the name of GIBS and the University of Pretoria. The Case Study Hub is overseen by Prof Albert Wocke and has a panel of experienced case writers who have won several case study awards, supported by an experienced case writer who coordinates the copywriters and proof-readers and tracks the cases through the publication process. GIBS cases can be accessed through Harvard Business Publishing, Ivey Case Centre and Emerald.

In 2019 a member of GIBS, Prof Caren Scheepers, was nominated for a prestigious competitive award. The school and members of the Case Study Hub were delighted when she was awarded the Outstanding Contribution to the Case Method Award. This is the second time an African institution has won in the ten-year history of the award.



Prof Caren Scheepers, winner of prestigious award

Producing high-quality case studies has enabled GIBS to strengthen its local and international reputation as a business school that is close to business, deepen client relationships, contribute to student learning across the world, and make a small contribution to creating thought leadership in the African context.

Entrepreneurial learning

The Gordon Institute of Business Science (GIBS) Entrepreneurship Development Academy (EDA) ran a programme for township-based retail-oriented entrepreneurs. The programme was a scholarship opportunity, funded entirely by the Walmart Foundation based in the USA, with an associated research component. The programme required extensive levels of innovation from recruitment of beneficiaries to project roll-out and data collection.

Given the objectives of this programme, the GIBS EDA delivered course content on-site within townships across seven provinces. In order to do this, deep investigations into the needs and the very nature of township entrepreneurship were conducted. Thereafter, customised course content was developed that would address these needs for retail-based township business owners. The EDA team had to remain cognisant of heterogeneous business activities as well as possible language and literacy issues. In the first instance, the business functions ranged from spaza shops and butcheries to mechanics and many other activities – hence, there was a need to provide education that would be relevant to all beneficiaries. To address the language concerns, the EDA contracted facilitators and mentors

who could engage with participants in their own vernacular (in some instances, facilitators were proficient in as many as five languages; in many areas, English is not the common medium of communication).

Despite some initial concerns relating to possible complexity of delivering the programme, the EDA delivered a highly successful intervention across Tembisa, Motherwell, Mitchells Plain, Kwa-Guqa, Phokeng, Umlazi and Seshego. The programme itself consisted of five months of teaching, as well as integration of learning under specialist mentorship. The entrepreneurs learnt new concepts to apply to their businesses such as marketing techniques, financial management practices, legal and compliance matters and people management skills.



Graduation of Umlazi entrepreneurs

Monitoring and evaluation processes included the collection of quantitative data at the beginning and end of the programme to assess change over time. Additionally, qualitative data were collected in the form of focus groups held at the end of the programme. The data showed that major improvements had taken place across almost all metrics, and the qualitative data supported this finding. Indeed, the largest impact took place across personal variables such as entrepreneurial self-efficacy and growth mindset as measured by psychometric scales. These very interesting data were used to track the programme efficacy but were also written up and presented at a research event held at GIBS in January 2020. Findings of interest about township entrepreneurs were shared with business development service providers, national and provincial government representatives, members of academia, as well as other entrepreneurs and private sector entities.

The EDA is proud to have delivered so well on the programme that the unit was awarded further funding from the Walmart Foundation to run a second iteration. This next tranche of funding will support 120 township entrepreneurs in six different provinces starting in May 2020. Armed with learning from the first project, the EDA is confident that an even greater impact can be made going forward.

Forums at GIBS

Since its inception in 2000, GIBS has hosted a series of high-level business discussions, known as forums. These events are

held in the evening and are aimed at experienced as well as up-and-coming business executives and leaders. In 2019, the school hosted 36 such functions, which were attended by 3 880 delegates (primarily senior managers).

The events attract notable business executives, politicians, overseas business leaders and subject matter experts as speakers. They have developed a reputation as a 'safe space' for discussion, with a strong climate for interaction. This climate has encouraged senior leaders to share, in a frank and engaging way, contextual insights into the challenges and opportunities they face in their own organisations. Discussion also encompasses national and global topics from time to time. The notion is that leaders come to share their experiences in order to help other business managers learn from them in an academic space.

The GIBS forums are structured to respond rapidly to important, topical business and social issues. Speakers and topics through the year included: Chief Justice of South Africa Mogoeng Mogoeng (governance and ethics); Ralf Schmitt, the Musical Director of the Ndlovu Youth Choir (leadership, community upliftment); Nonkululeko Nyembezi, Board Chairman: BLSA and JSE Chairperson (governance and ethics); Martin Kingston, Executive Chairman of Rothschild and Co SA, Vice-President of Business Unity South Africa and board member of SAA (ethics, values-based strategy); Barry Swartzberg, co-founder Discovery Healthcare (values-based strategy); Sim Tshabalala, CEO of Standard Bank (banking industry, strategy, leadership, technology); and President Kgalema Petrus Motlanthe, the former

President of the Republic of South Africa (politics, governance).

There are few other avenues available to South African business for the creation and dissemination of thought leadership in such short timeframes, thus allowing attendees to dip into the very latest theory and practice. The forums cover a wide gambit of topics, from conversations with CEOs and politicians on ethics and governance, through leadership, strategy, business performance, politics, economics and technology, to the latest on disruption, innovation, technology and behavioural economics.

In addition, to increase accessibility, all significant forums are video-recorded. This content is then distributed through GIBS' email, online and social media channels. To further broaden accessibility, the school partners with various media

organisations such as City Press. There is also a standing invitation to journalist from both the business and popular press to attend the events at no charge. Likewise, to improve accessibility, GIBS waives the small attendance fee (used to cover the catering costs of the events), for those in financial need. Not all learning and information sharing occurs in the classroom. A networking event over a light meal is arranged after the discussions, which allows attendees to network, thus enabling much informal learning to take place.

GIBS forums have responded to a business need for short, interactive engagements that enable participants to stay current and satisfy their aspiration for continuous learning opportunities.



GIBS forum: Andile Khumalo, Junior Ngulube, Philisiwe Sibiya, Tawana Kupe

Enterprises University of Pretoria



Enterprises University of Pretoria graduates

Promoting workplace skills development

Today's challenging business environment is a reminder to organisations that talent management, where employees' skills are appropriately deployed to optimise performance, is a critical function.

A workplace skills plan (WSP) is an important tool in assisting organisations to address their learning and development needs. The WSP requires organisations to identify their skills priorities in line with the business strategy, identify the subsequent skills gaps that exist within their workforce, and develop or search for the best learning solutions for their employees' career ambitions.

During 2019, Enterprises University of Pretoria (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 1 069 training opportunities during the year that were attended by more than 16 000 individuals representing companies and institutions from all sectors of the economy.

The Deputy Minister of Trade and Industry, Ms Nomalungelo Gina, delivered a keynote address at the third certificate ceremony of the Incubation Governance and Management

Development Programme (IGMDP). The IGMDP is a capacity-building programme presented by Enterprises UP and the Department of Business Management in collaboration with the Department of Trade and Industry (DTI) and the Small Enterprise Development Agency (Seda) to develop the capacity of incubator managers, board members and officials responsible for incubation in government.

Toyota South Africa, together with the Department of Marketing Management and Enterprises UP, are working side by side with the local taxi industry to implement sound business practices and upskill members of taxi associations. The training programmes aim to strengthen and develop the management and leadership skills of staff, managers and executives in the taxi industry. The programme is facilitated by a collection of industry specialists and lecturers from UP.

Innovative leadership development programmes were top of mind for most institutions. Enterprises UP, together with a variety of academic departments, designed and delivered bespoke training interventions to enhance leadership skills for various clients in both the public and private sectors.

Enterprises UP's reach extends beyond the borders of South

Africa. A tailor-made Leadership Development Programme, designed to meet the specific needs of Electricidade de Mocambique, was presented to the board of directors, directors and managers from various departments in the institution during 2019. Courses were also presented to clients on-site in Dubai, Congo, London, Malawi and in member countries of the SADC.

Institutions and individuals are becoming increasingly aware of the potential impact of accelerated digital transformation on skills requirements for the future. New additions to the course portfolio addressed topics such as 'Uncertainty modelling in artificial intelligence', 'R-ecosystem for analysis', 'Unmanned aircraft systems technology', 'Technological entrepreneurship and innovation', 'Disruptive innovation' and 'Future thinking'.

'Online learning is not the next big thing, it is the now big thing.'

(Donna J Abernathy)



Classroom 3D technology

An increase in preference for online and blended training interventions among the customer base of Enterprises UP resulted in the development of several customised solutions using a hybrid teaching model. Clients who opted for a blended mode of delivery included the Auditor General of South Africa, the National Lotteries Commission, the South African Institute for Government Auditors, the Gauteng Department of Agriculture and Rural Development, First National Bank and Netcare.

The Democracy Works Foundation commissioned Enterprises UP to develop a programme called the Democracy Works Academy (DWA), using a blended mode of delivery. The DWA is a civic education and dialogue programme to support young people in becoming engaged and critical leaders. The project brought together an interesting mix of participating academic departments, including the departments of Political Sciences, Music and Computer Science. Learning topics included 'Thought leadership', 'Blogging', 'Reflective writing', 'Public speaking', 'News writing', 'Social media marketing', 'Critical conversations' and 'Opinion pieces'.

As the imperative for upskilling and re-skilling increased owing to economic dynamics, more and more individuals opted to enrol for training programmes in their own time. In response, a number of new fully online courses were added to the

Enterprises UP portfolio addressing a diverse range of topics such as maintenance, project procurement, ethics, governance and sustainability, and fraud and corruption risk indicators.

A total of 1 527 delegates enrolled for online training courses scheduled during 2019. Popular courses included ones in debt counselling, neuroscience, project management, higher exercise science, legal collections and legislative drafting.

Work-ready graduates

Collaboration between Enterprises UP and the University of Pretoria's Career Services continues in an effort to optimise the R4W programme for University of Pretoria students and to exploit possible commercial opportunities.

Approximately 20 PODs structured into four packages were available. (A POD is a professional online development module/unit offered through Enterprises 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. They receive a certificate for each POD they complete.

Enrolment increased through active promotion of the programme among students. During 2019, the R4W programme recorded 3 566 student enrolments, compared to 2 018 enrolments the previous year.

The success and popularity of the R4W PODs hinge on their quality and relevance to current workplace dynamics. To this end, a full review of the programme was undertaken and a number of new topics was developed for inclusion in the 2020 programme, including 'Computational thinking', 'Ethical reasoning skills', 'The gig economy' and 'Learn unlearn relearn for 4IR'.

Students were also introduced to the free R4W programme during #ChooseUP Day in September.

In addition to being ready for formal employment, entrepreneurship and the concept of self-employment were promoted by providing students free access to the online module in entrepreneurship. During 2019, 341 students actively participated in this programme.



R4W programme #ChooseUP

Conclusion

The University can move confidently into the future with clear leadership in teaching and learning at all levels, from lecturers to deputy deans to the Executive; excellent staff committed to their disciplines and student success; world-class physical and online facilities; and policies and structures that support best practice in university teaching, assessment and student success.

Student success is seen as more than just good marks, although they are obviously important and seen as the outcome of students' hard work, growth mindset and optimal use of resources. Successful transition into the University and later into the world of work are given attention, from orientation to the free online R4W packages. Advisors provide co-curricular support. Student well-being while at university also receives attention from researchers and the FLY@UP team.

The University is monitoring and discussing advances in technology in the era of the 4IR and the impact that they will have on the curriculum in terms of both content and delivery.

Curriculum transformation remains high on the agenda. Much progress has been made in making content local, including

through curricular community engagement and work-integrated learning, consultation with other academics, and consultation with professional bodies. The continuing focus at all levels in faculties ensures that the University does not lose momentum in this important work.

Hybrid teaching and learning remain a priority, especially as data show that students who use the learning management system frequently outperform those who do not quite significantly. The driver is not the use of technology for the sake of technology, but having students spend time on task through meaningful engagement with learning resources beyond the classroom. These resources can be texts, videos, graphics, lecturers, fellow students, URLs, etc.

Evidence-led teaching and student success interventions have been established over the past few years and the new module review approaches prioritise the use of teams and data. For 2020, modules with high enrolments and a less than desirable success rate will receive intensive attention and be provided with the data they need to start conversations about meaningful interventions.





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