

TEACHING AND LEARNING

REVIEW 2018



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

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

Professor Tawana Kupe



I started my term as Vice-Chancellor and Principal of the University of Pretoria (UP) in January 2019. My expectation that the University was a leader in teaching, student development and success, research and community engagement was confirmed as I became involved in the strategic management of the University and in the many activities that support the strategies. Reading through this review has also confirmed my belief and shown the excellence of the University in data-based decision-making and the hybrid approach to teaching and learning.

The first section of the review deals with the strategic priorities for teaching and learning in 2018; the second section shows how closely faculties align their activities with the strategies of the University. It is pleasing, for instance, to see the focus on curriculum transformation. The minimum-time-to-completion project, FLY@UP, is an innovative initiative to coordinate student development and success activities in the University into a single focus.

I read in the review of programmes such as the Michael and Susan Dell Foundation bursaries and the MasterCard Foundation Scholars Program. I have had the privilege since becoming Vice-Chancellor and Principal of welcoming the latest cohort of scholars. Students in the 2019 MasterCard programme come from 13 African countries, including Lesotho, Swaziland, Uganda and South Africa; 23 of them are undergraduates and 40 postgraduates. My message to the students was that they should probe what it means to lead with significance, whether this leadership is of self as a university student, or leading to create an impact after graduating; relevant leadership (ethical, moral and transformational) is what is required in life. There are two expectations of MasterCard scholarship students at UP: academic success and giving back to their local community. As we know, with every opportunity comes responsibility.

The review also covers the top school leavers entering the University, and provision that is made for them. Once again, I had the honour of launching the 2019 Vice-Chancellor's Discretionary Merit Award (VCDMA) at a celebratory dinner. The award is a prestigious financial accolade awarded to learners who appear on the annual national and provincial top achievers' lists, and which covers their tuition for three years, partly in recognition

of their outstanding academic achievements. For 2019, there are 55 recipients. I urged the selected students to continually strive for success and excellence, as UP's 111-year history is marked by excellence and change. It admits students who have excellent academic high school results because it believes that selecting and admitting such students is to affirm excellence – this is a University value and practice. Academic excellence knows no race, gender, religion, borders or alternative choices in life – it simply is human.

The leadership in this portfolio obviously contributed to the achievement of the 2018 priorities, from the drive shown by the Vice-Principal: Academic, Professor Duncan, to the work of the Deputy

Deans: Teaching and Learning in each faculty. Research shows the importance of visible leadership in student success initiatives.

My vision for teaching, learning and student success going forward is to address issues facing students, including financial, accommodation and other barriers related to gaining access to the University and completing their degrees. Student food security will be addressed in various ways. The opportunities available to residence students in terms of support will be extended to day students. Student well-being will be a focus within a holistic approach to student success.

Teaching is both an art and a science. Lecturers are appointed on the basis of their disciplinary knowledge and their research. This is appropriate as teaching begins with learning, with the learned practitioner, the scholar. That is why the University of Pretoria employs and will continue to employ as lecturers some of the most qualified academics available. In 2018, 30,5% of the academic staff held master's degrees while 66,3% had doctorates. UP far exceeds the national norm for staff holding doctoral degrees (18%) and the percentage increases every year as the University invests in the upgrading of staff qualifications. Students at the University of Pretoria thus benefit from engaging with highly qualified staff. Many academics also have professional and industry experience, adding to the value offered by the University. In addition, the University will continue to supply the necessary teaching and learning science expertise through the Department for Education Innovation as well as support for other professional learning opportunities for staff.

We shall continue to strengthen strategies for inquiry-based learning, hybrid teaching and learning, data-based decision-making for student success, the recognition of teaching for advancement, and the acknowledging of teaching through awards.

Two things have remained constant at UP: excellence and change. As UP continues to evolve, things will continue to change, and it will always be with excellence as its goal. I see excellence as our beacon star.

Professor T Kupe
April 2019



Foreword by Vice Principal: Academic

Professor Norman Duncan

One could write at length about the contextual determinants of innovation in teaching at the University of Pretoria, such as the University's very long history of excellence in teaching and learning; its ongoing willingness to provide and harness all forms of technologies to enhance student learning and success, and its prioritisation of teaching while pursuing its endeavours to be a research-intensive university. Instead, in this introductory message, I would much rather acknowledge and reflect on the contributions of individual academics to educational innovation as a means of enriching students' learning experiences and enhancing student success rates. As Hasanefendic, Birkholz, Horta and Van der Sijde (2017)³ observe, while one can hardly over-emphasise the influence contextual factors such as institutional histories and economic and political factors have had on innovation, the role of individual actors in innovation in the higher education sector cannot be underestimated.

As should be evident from a reading of this Teaching and Learning Review, the University of Pretoria's Deputy Deans: Teaching and Learning played a pivotal role in driving innovation in teaching in all of our faculties in 2018, so as to deepen the learning experience of our students, thereby contributing in significant ways to student success. For example, in 2018, Professor Johan Oberholster, the Deputy Dean for Teaching and Learning in the Faculty of Economic and Management Sciences (EMS) was a key mover in the implementation of the TAP

continuous professional development programme for lecturers in his faculty; under the leadership of Professor Salome Human-Vogel, the Faculty of Education significantly strengthened its drive to enhance the digital competencies of education students; Professor Alta van der Merwe, the Deputy Dean for Teaching and Learning in the Faculty of Engineering, Built Environment and Information Technology (EBIT), played a key role in developing and implementing data models aimed at predicting risks to and facilitators of student success; Professor Dianne Manning of the Faculty of Health Sciences continued to drive efforts to ensure the adoption of the University's hybrid approach to teaching and learning in her faculty; Professor Anton Kok and his successor as the Deputy Dean for Teaching and Learning in the Faculty of Law, Professor Birgit Kuschke, also pushed the adoption of the hybrid approach to great effect in their faculty; Professor Hennie Stander of the Faculty of Humanities once again championed and facilitated the use of learning communities as a means of enhancing student success in two of his faculty's departments; under the committed leadership of Professor Marietjie Potgieter, the Deputy Dean for Teaching and Learning in the Faculty of Natural and Agricultural Science (NAS), the Department of Mathematics and Applied Mathematics introduced a range of innovative interventions to improve student performance; under the steadfast leadership of Professor Ernest van Eck, the Faculty of Theology and Religion extended the use of Blackboard Collaborate Ultra; and under the very capable leadership of Professor Dietmar Holm, the Faculty of Veterinary Science continued to pursue its cutting-edge interventions aimed at online teaching.

Without the commitment of our Deputy Deans: Teaching and Learning and the

Faculty of Theology and Religion's Chair of Teaching and Learning, the University's efforts at improving student performance and success through its flagship FLY@UP project would not have taken off.

Of course, it was not only our Deputy Deans and our Faculty of Theology and Religion Teaching and Learning Chair who were responsible for the strides made by the University in respect of teaching and learning in 2018. Various other academic members of faculties also contributed in significant measure. Some of the more striking interventions aimed at enhancing student performance and success led by other academics include the pioneering work of Dr Thiru Vandeyar (Faculty of Education) on teaching with technology; Dr Ronel Callaghan's inspirational work through the Living Lab for Innovative Teaching at the University of Pretoria (LLITUP) (Faculty of Education); the exciting work of Dr Nadia Viljoen (EBIT) in the Vertically Integrated Project (VIP); the innovative work done by Professor Jannie Hugo (Faculty of Health Sciences) in education for health practitioners; the hybrid Global Classroom initiative led by Roland Henwood and Heather Thuynsma (Humanities); the seminal initiative involving 'the use of technology to revitalise a dead language' by Professor Gert Prinsloo and Charlotte Sibayoni (Humanities); the inspirational learning community for mathematics repeaters established by Dr Mpho Madi (NAS); and the significant innovations by Professor Martina Crole (Veterinary Science) in the field of histology.

Of course, the role of staff in all of our support departments in advancing educational innovation should also be acknowledged. For example, the Department for Education Innovation's online university preparation course for provisionally accepted first-year students, its management of the FLY@UP project

and its hosting of the annual Flexible Futures conference, which is aimed at showcasing educational innovation; the Department of Enrolment and Student Administration's online Ready for Work programme and its programme for high achieving students; the Department of Library Services' MakerSpace project; the Department of Information Technology Services' drive to provide Wi-Fi access in all learning spaces on all of our campuses; and the Department of Facilities Management's establishment of several social learning spaces on campuses all serve as illustration of our support departments' commitment to innovation in the service of student success.

If anything stands out for me about 2018 (that is, besides the evident strides made by the University in respect of student success), it is the manifest commitment of so many role-players in the University community (especially all of our academics at the 'chalk face') to enhancing student success through educational innovation. This commitment deserves acknowledgement and commendation.

References

¹ Mykhailyshyn, H; Kondur, O & Serman, L. 2018. Innovation of education and educational innovations in conditions of modern higher education institutions. *Journal of Vasyli Stefanyk Precarpathian National University*, 5:10.15330/jpnu.5.1.9-16. https://www.researchgate.net/publication/324649153_Innovation_of_Education_and_Educational_Innovations_in_Conditions_of_Modern_Higher_Education_Institution.

² Heick, T. 2017. Examples of innovation in higher ed – with a caution. *The Future of Learning*. <https://www.teachthought.com/the-future-of-learning/examples-of-innovation-in-higher-ed/>.

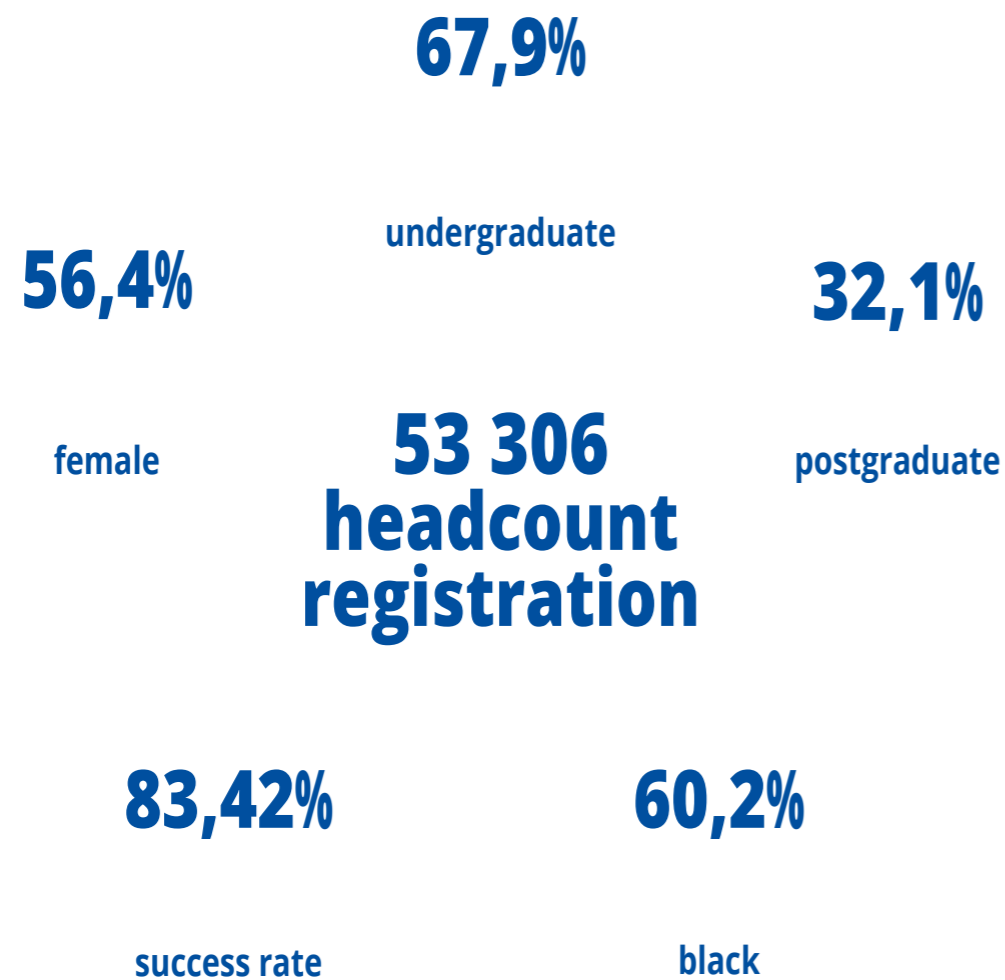
³ Hasanefendic, S; Birkholz, JM; Horta, H & Van der Sijde, P. (2017). Individuals in action: Bringing about innovation in higher education. *European Journal of Higher Education*, 7(2):101-119. DOI: 10.1080/21568235.2017.1296367.

Professor NTF Duncan
April 2019

In a recent publication, Mykhailyshyn, Kondur and Serman (2018)¹ defined educational innovation as a 'procedure or method of educational activity that differs significantly from established practice and is used to increase ... efficiency...'. Educational innovations include pedagogical innovation, scientific and methodological innovation, educational and technological innovation.'

In another recent online article, Heick (2017)² also emphasised the notion that innovation implies 'substantive change'. However, in addition, he suggested that in order for innovation in the higher education sector to be meaningful, it should be accompanied by or result in some or all of the following outcomes. Innovation, he argued, should: (a) substantively improve learning; (b) substantially broaden access to education for all; (c) significantly reduce the cost of education, particularly for young people; (d) reduce the dropout rates; (e) result in 'good work' (instead of simply jobs) for graduates; and (f) benefit the communities in which universities are located. In my interaction with our Deputy Deans: Teaching and Learning, as well as with various other academic staff members, it is clear that these are also the outcomes that the University of Pretoria aspires to attain in its conceptualisation and implementation of educational innovations. And of course, the University's production of educational innovations is significant.

Student Data 2018 – Institutional



Teaching and Learning Priorities 2018

The Institutional Plan for 2018 focused on a number of priorities and strategies to achieve the five goals of the University, including those related to enhancing access and successful student learning.

The drivers of the Institutional Plan included:

- Centrality of the academic mission
- Student-centredness

Most of the activities arising from these priorities will be dealt with in the first section of this report as they involve both academic and support structures, but they will also be integrated into some of the faculty sections.



Centrality of the Academic Mission

The Role of the Deputy Deans / Heads of Teaching and Learning

The contribution of the deputy deans / heads of teaching and learning to the improvement of the quality of teaching at UP cannot be over-emphasised. They retain teaching and research workloads in addition to their leadership of teaching and learning in their faculties. They serve on multiple institutional committees, the most important of which are the Senate Committee for Teaching and Learning, the FLY@UP committee, which focuses on the integration of student success initiatives, and the Tshebi data committee. Many serve on other institutional committees as well. They head the teaching and learning committees of their own faculties.

They form a community of practice that met on a quarterly basis in 2018 with the Vice Principal: Academic to explore strategic directions for teaching.

They are responsible for administering, monitoring and evaluating funds that their faculties receive from the University Capacity Development Grant (UCDG) to implement tutoring and advising, on the one hand, and to host a teaching and learning seminar or series of events and make teaching awards, on the other.

The deputy deans / heads of teaching and learning in 2018 were:

Economic and Management Sciences	Professor Johan Oberholster
Education	Professor Salome Human-Vogel
Engineering, Built Environment and Information Technology	Professor Alta van der Merwe
Health Sciences	Professor Dianne Manning
Humanities	Professor Hennie Stander
Law	Professor Anton Kok, succeeded by Professor Birgit Kuschke
Natural and Agricultural Sciences	Professor Marietjie Potgieter
Theology and Religion	Professor Ernest van Eck
Veterinary Science	Professor Dietmar Holm

Curriculum Transformation through Specific Faculty Plans and Activities

After Senate approved the document *Reimagining curricula for a just university in a vibrant democracy* as the official framework for the University of Pretoria's curriculum framework endeavours in 2017, all faculties, in 2018, developed and submitted curriculum implementation plans cast within this framework for the period 2018 to 2022.

To encourage ongoing scholarly reflection and debate about curriculum transformation matters, the Office of the Vice-Principal: Academic once again hosted a number of open lectures as part of the series 'Curriculum transformation matters: The decolonial turn', which had been initiated in 2016. The 2018 lectures were as follows:

- 'Decolonisation, liberation and the politics of knowledge production in Africa', presented by Professor Abdi Samatar, Department of Geography, Environment and Society, University of Minnesota, USA, and Research Fellow at the University of Pretoria (lecture presented on 20 March 2018)
- 'The appropriation and commodification of decolonisation in South African universities post-Fallism', presented by Professor Nomalanga Mkhize, Associate Professor, Department of Sociology and Anthropology, Nelson Mandela University (lecture presented on 2 August 2018)
- 'Re-Imagining the decolonisation debates in South African higher education: What's gender got to do with it?', by Professor Relebohile Moletsane, JL Dube Chair in Rural Education, School of Education, University of KwaZulu-Natal (lecture presented on 29 August 2018)
- 'In search of a new archive: Reclaiming agency, voice and knowledge production beyond the post-apartheid', by Professor Pumla Gobodo-Madikizela, Research Chair in Historical Trauma and Transformation, Stellenbosch University (lecture presented on 27 September 2018)



Back, left to right: Professor Ernest van Eck, Professor Johan Oberholster, Professor Norman Duncan, Vice-Principal Academic; Professor Marietjie Potgieter, Professor Dianne Manning. Front: Professor Hennie Stander, Professor Salome Human-Vogel, Professor Birgit Kuschke, Professor Dietmar Holm, Professor Alta van der Merwe

Transforming the curriculum will be dealt with in the faculty sections as appropriate, as they are the owners of their curricula.

Acknowledging and Rewarding Sustained High Performance and Innovation in Teaching

Range of Education Innovation (EI) and Faculty-specific Training Interventions

Provision for the development of teaching is considered to be a quality marker. The Department for Education Innovation (EI) provides a full range of workshops and priority courses to develop the teaching, assessment and e-learning skills of academic staff members.

In terms of e-education, instructional designers developed and delivered the courses. Lecturers could choose from ten different half-day courses on the use of clickUP, Turnitin and QuestUP, as well as a full-day course on creating digital lectures. These workshops challenged lecturers to review their teaching strategies to include online elements that interacted and integrated with their contact learning opportunities. The e-Learning for Academics course allows lecturers to experience an online course as both students and lecturers while they

learn how to design and facilitate online courses. The 42 sessions scheduled for the priority courses were attended by 531 staff members.

In addition to the priority courses, the e-education team also provided ad hoc departmental training to seven academic departments. This training was attended by 63 lecturers. Students who were appointed to support learning also received training in the use of clickUP. In 2018, 40 assistant lecturers in the School of IT were trained to use clickUP and 106 tutors received training to facilitate online tutorial sessions.

In addition, the new trend of clickUP being used as a communication and

with the deputy dean in each faculty or with heads of specific departments. For instance, in Economic and Management Sciences (EMS), six teaching events were organised, reaching a total of 180 staff members (some staff members may have attended more than one session). The six events dealt with the following: three events were designed to increase the hybrid approach in the EMS Faculty by using Apowersoft as a tool to record videos of lectures and feedback on tests and examinations. A total of 129 lecturers attended these presentations. Three other presentations were also made, dealing with AV technology (19 attendees), the power of a growth mindset (15 attendees) and how to improve retention



From left to right: Professor Salome Human-Vogel (Education), Professor Birgit Kuschke (Law), Professor Marietjie Potgieter (Natural and Agricultural Sciences), Professor Alta van der Merwe (Engineering, Built Environment and IT), Professor Wendy Kilfoil (Education Innovation), Professor Ernest van Eck (Theology and Religion), Professor Gerrit Stols (Education Innovation), Professor Hennie Stander (Humanities), Professor Dianne Manning (Health Sciences) and Mr Dolf Jordaan (Education Innovation)

management tool more widely than teaching and learning, resulted in a need to train 55 residence committee members in the system in 2018. The e-education team also presented 45 student orientation sessions to approximately 1 870 students in 2018 to support their use of clickUP.

The Education Consultancy Unit collaborated with the instructional designers and the Department for Research and Innovation to present the flagship Academic Induction programme twice in 2018. For the rest, their workshops were just-in-time in nature and faculty-based in consultation

rates in higher education (17 attendees). Another faculty with a full programme of professional development supported by the education consultants was Natural and Agricultural Sciences, where 17 workshops were presented, including one on how learning works, plus a number of brown bag lunches where lecturers became more aware of factors that influence learning such as neurocognitive psychology, motivation and the growth mindset.

The education consultants were also responsible for the training of all tutors and assistant lecturers.



Attendees at the Flexible Futures IV conference



Mr Almero du Pisani and Mr Johan Slabbert



Professor de Gruyter with UP staff and students



Professors Crole and Vandeyar at the Achievers' Award function

Flexible Futures IV Conference

The fourth Flexible Futures conference was held at the CSIR on 4 and 5 October 2018. The theme of the conference was 'Technology-enhanced innovation in teaching, learning, assessment and student success strategies'. The sub-themes were:

- Applying artificial intelligence to education
- Learning science and pedagogy for online
- Achieving teaching and learning outcomes supported by technology
- Innovative student success strategies with technology
- Technology and graduateness

Sir Peter Cochrane's keynote speech on the first day of the conference, 'AI – threat or promise?', was thought-provoking. Cochrane is currently Professor of Sentient Systems at the University of Suffolk, UK, as well as being a seasoned professional with over 40 years of hands-on management, technology and operational experience. With all the hype around artificial intelligence and the Fourth Industrial Revolution (4IR or Industry 4.0), Cochrane's take on the field was: 'We have many more rungs of the ladder to climb before AI becomes a generalised intelligent and self-aware platform'. His vision for AI is positive: 'The truth is, without AI almost all of human progress will come to a halt. We no longer hold all the abilities to unravel, analyse and understand all the problems we face. In a universe dominated by non-linearity, chaos and surprises, we need all the help we can muster'.

Johannes de Gruyter of Portland State University in Oregon, USA, not only delivered a stimulating keynote on the second day of the conference that

highlighted the participation of students in the design and development of curricula, but added value by presenting a seminar at the Department for Education Innovation on 3 October.

Thirty-one papers and demonstrations were presented, about 90% by University of Pretoria academic and professional staff, demonstrating the high degree of commitment to using technology to enhance teaching and learning at UP. The most highly rated of the presentations give a flavour of the presentations:

- 'Achieving teaching and learning outcomes supported by technology' (panel discussion based on research funded by the Carnegie Corporation of New York with panellists from participating grantee universities: Johannesburg, Cape Town, Free State and Pretoria): De Wet, T, Haupt, V, Meintjes, A and Scheepers, D, and facilitator Kilfoil, W
- 'Undergraduate students' access to social media related resources and the risk of tacit social exclusion: A South African case': Leith, K, Schmulian, A and Coetzee, S
- 'Learning design with technology': Amory, A
- 'Radiography board game brings life to teaching and learning': Essop, H, Kekana, M, Sethole, M, Lovric, G and Ahrens, E
- 'The "Groenkloof Campus Race": A mobile learning experience' (demonstration): Joubert, J and Callaghan, R

The winning paper was 'EBIT Faculty Student Advisor appointment booking system goes online: Confidentiality and ease through Google Calendar' presented by Botha, A, Vinson, C, Naidoo, R and Van Meyer, M.

The Department for Education Innovation also had a stall in which attendees could experience virtual reality. Virtual reality has great potential for experiential learning at university level. It has been used for some years already in mining engineering, where students can virtually experience being in a mine environment. Education Innovation showed how it could be used in health sciences, geography, etc.

The conference, organised by the Department for Education Innovation, using funds from the University Capacity Development Grant, was well-supported by the deputy deans for teaching and learning, who also encouraged their staff to attend and present.

Approximately 180 people attended. About 50% of the registrations were from UP staff.

Alternative Assessment Seminar

The second alternative assessment seminar took place on 17 May 2018 and was attended by 126 staff members from UP. Professor Norman Duncan hosted the event in the Sanlam Auditorium with support from the Department for Education Innovation (video: <https://youtu.be/DwPRFG-rYow>). Five lecturers from different faculties showcased their assessment practices:

- Dr Maximus Sefotho from the Department of Educational Psychology introduced the hybrid practices in the Faculty of Education's student learning communities: 'Student learning communities – scaffolding assessment via hybridisation technology' (<https://youtu.be/vOocfNHozGg>).
- Dr Elzette Korkie from the Department of Physiotherapy in the Faculty of

Health Sciences presented a paper on 'Video essay – an alternative assessment method' (https://youtu.be/qV8_fuVbskA).

- Dr Rhoda Leaks from the Department of Production Animal Studies in the Faculty of Veterinary Science presented 'Open resource assessment' (<https://youtu.be/owEJKP0KV7c>).
- Ms Madelyn Cloete and Ms Corlia Joynt from the Department of Accounting (EMS) illustrated their growth in online assessment in accounting: 'The road less travelled – online assessment in accounting' (https://youtu.be/ekncKr_k28c).

The improvement of practice through learning from peers is an established principle at the University.

Institutional Teaching and Community Engagement Awards

At the annual Achievers' Evening on 10 May 2018, the University awarded two Laureates for Teaching Excellence and one Community Engagement Award.

Professor Martina Crole, Faculty of Veterinary Science

Professor Crole works in Veterinary Histology. She has won a number of teaching innovation and excellence awards that culminated in her winning a University Teaching Excellence Laureate. What kind of university teacher continually innovates? Professor Crole says that, as a veterinarian, she has a passion for animals, which 'ties up with my passion for education as I can train students well so that they may look after the animals we all love'. She continues: 'I firmly believe that it is of the utmost importance for my students to develop the skills, among others, of critical

thinking and self-evaluation as well as a culture of continued and self-directed learning'. Veterinary Histology is a subject that calls on entirely different learning skills from other veterinary science disciplines. It requires the student to evaluate critically a three-dimensional structure in two dimensions and in strange colours. The problem is how to engage undergraduate veterinary students with histology in such a manner that they develop a critical eye. Professor Crole describes her award-winning teaching approach as follows:

I endeavoured to produce a catalogue of histology images in the form of flashcards with the pertinent information on the back of each card. These cards were used together with worksheets I designed, PowerPoint presentations I compiled and recorded or narrated, virtual microscopy which I implemented on clickUP and the microscope with accompanying slides. All of the afore-mentioned were pivotal in making histology fully hybrid. My teaching represents a synergy between old and new technology and between old and new lecturing techniques. These histology innovations have increased student success and freed up class time for other activities to broaden knowledge. Additionally, it allows students who cannot get regular access to a microscope to master the discipline of histology by using the online virtual microscopy. These innovations make histology tangible, fun and interactive for group learning.

The evaluators remarked on her coherent, considered teaching philosophy appropriate for veterinary and cognate sciences; ample and impressive evidence of innovation; some sharing of teaching practices at conferences; and a growing network internationally.

Dr Thiru Vandeyar, Faculty of Education

Dr Thiru Vandeyar is a senior lecturer in the Department of Science, Mathematics and Technology Education in the Faculty of Education. In 2018, he was a recipient of a Laureate Award for Teaching Excellence. The main thrust of his practice has been on exposing pre-service teachers to the use of ICT as an enabler to promote 21st-century competency skills of communication, collaboration, creativity and critical thinking. His teaching practice focuses on innovative and cutting-edge approaches to teaching and learning with technology. Numerous innovative practices define his teaching. Using open-source software, mobile technology and open educational resources promotes good teaching practices, even in resource-constrained schools. He uses interactive concept maps, embedded with multimedia and augmented-reality applications, as cognitive and instructional tools to enhance both teaching and learning. He uses open cloud-based learning management systems, mobile technology for assessment and classroom management tools to enhance his blended-learning pedagogical practice. A flipped classroom approach that incorporates short lecture videos, extensive learning resources, mobile assessments and self-evaluation rubrics, defines a blended learning strategy and simultaneously demonstrates technology as a pedagogical affordance. Various Google collaborative tools are used for faculty administrative and research purposes, and to create cloud-based interactive lessons that are enriched with interactive multimedia and assessments. Swivl™ technology allows him to video-record his classroom practice to develop course material and to be a reflective practitioner.

This experience also translates into allowing students to use smartphone technology and educational blogs to reflect on their own teaching practices. He argues that changing existing pedagogy is the principal construct in teaching and learning with technology. To this end, his teaching practice strives to develop pre-service teachers that will respond to the Third and Fourth Industrial Revolutions as ICT agents of change.

The evaluators commended Dr Vandeyar on his progressive and coherently articulated philosophy; his journey as a life-long learner; his reflection on his practice; the ample and impressive evidence of innovation, especially in relation to the use of teaching technologies; excellent student feedback, which demonstrated his passion for his subject; and the evidence of influence beyond the department and faculty to the University, and further, to external education partners.

Dr Victoria Rautenbach, Faculty of Natural and Agricultural Sciences



Vice Principal Academic, Professor Norman Duncan, congratulating Dr Rautenbach on her award

Dr Rautenbach received the institutional Community Engagement Award for her excellent contribution to sustainable curricular community engagement. Community-based service learning in geoinformatics prepares students for the workplace. The final-year project module for geoinformatics (also known as Geographic Information Science or GISc) allows students to complete a project, from start to finish, in which one or more of the studied techniques of data acquisition and processing are used to produce an output of geographically referenced information. To facilitate this application of learning in context, Dr Rautenbach relies on a community-based service learning approach in an informal settlement in the east of Mamelodi, City of Tshwane, called Alaska.

Students are not only exposed to technical skills, but also project management and soft skills, such as group work and time management.

The students had to map Alaska and implement a web solution for a problem they identified, such as assisting emergency services to reach their destinations by mapping the routes in the Alaska community. Through this project, students had the opportunity to go through the entire project lifecycle from data acquisition to presentation of their final results in an easy-to-understand format, while at the same time giving them the opportunity to put into practice GISc knowledge and skills acquired in individual modules.

After Dr Rautenbach received the award, she was able to secure NRF funding to extend her work in Alaska to include participatory GISc and the Internet of things. She expressed her gratitude to her students, colleagues and the UP community engagement section for their support and hard work.

The evaluators applauded the authentic learning context provided by the project and the way in which it integrated knowledge and skills from different disciplines. The students' 100% success rate is remarkable. At the same time, the project serves the needs of multiple community stakeholders in Alaska, and the number of households impacted is impressive. This is a good example of a service learning module and gives the students the opportunity to understand the dynamics within the communities and increase their social awareness. The longitudinal nature of the project has enabled Dr Rautenbach to build up a comprehensive database on the Alaska area that is invaluable for the community as well as for teaching and research.

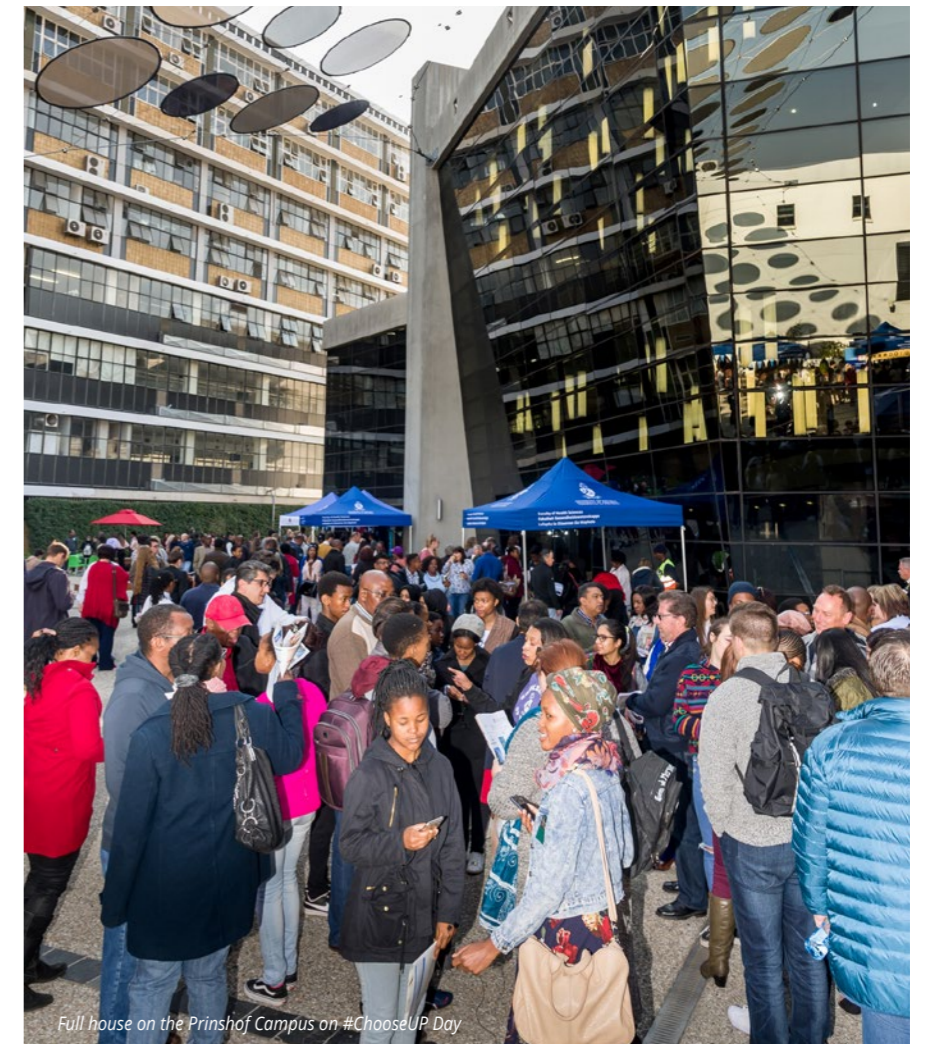
New Language Policy

The new language policy came into effect in 2019, with all first-year modules taught through the medium of English (except for language modules). The University was concerned that both staff and students for whom English is not a first language would need additional assistance. A language committee was formed, including the Unit for Academic Literacy, the Department of English, the Department of African Languages, departments in the Faculty of Education dealing with language methodology, the Department for Education Innovation, the Language Unit and Enterprises University of Pretoria.

All faculties offer an academic literacy module specific to that faculty in first year. In addition to that provision, other resources for speakers of other languages were targeted for development. The Department of Human Resources was also interested in modules to develop

staff English literacy. Such resources take time to develop and the initiative is continuing.

There are so many free resources available that it was possible to develop English Grammar DIY posters that included a range of open education resources (OERs) and apps that students or staff could access. One of the resource links is to the Open Educational Resource Term Bank (OERTB) developed by UP with a collaborative grant from the DHET in partnership with the University of Cape Town (<http://oertb.tlterm.com/>). It contains the University word list in all official languages and terminology for some subjects in all official languages. One incidental poster was about how to evaluate apps and other OERs rather than about grammar. These posters were available on clickUP when the university opened in 2019. The resource was also shared with staff through the Department of Human Resources.



Full house on the Prinshof Campus on #ChooseUP Day

Student-Centredness

A student lifecycle approach was adopted with four stages: connection, entry, progress and completion (Rassen, E; Chaplot, P; Jenkins, D & Johnstone, R. (2013). *Understanding the student experience through the loss / momentum framework: Clearing the path to completion*. <https://ccrc.tc.columbia.edu/publications/understanding-student-experience-cbd.html>). As can be seen, this model accords well with the institutional goal of student access and success – personally, academically and professionally.

Connection

UP as the Institution of Choice: #ChooseUP Campaign

The overall undergraduate recruitment strategy is to brand, promote and market the University of Pretoria as the institution of choice to all prospective students and to increase the realisation rate by at least 1% in 2019 and a further 1% in 2020. This strategy is supported through differentiated recruitment activities focusing on different market segments, including IEB and Cambridge schools, top achievers and attracting quality applicants from previously disadvantaged communities.

The Department of Enrolment and Student Administration (DESA) plays a key role throughout the students' journey, starting at the recruitment stage.

The University of Pretoria, through the #ChooseUP integrated marketing campaign, ensures that UP is the institution of choice for prospective students. Part of the integrated campaign was holding the first #ChooseUP information event for conditionally admitted students and their parents on 4 August 2018.



A session in the skills laboratory on Onderstepoort Campus on #ChooseUP Day



A demonstration in the science laboratory on Mamelodi Campus on #ChooseUP Day

The faculty-focused event provided an opportunity for these learners and their parents or guardians to engage with the deans, attend information sessions on various programmes and attend mock lectures, academic and curriculum advising sessions, registration and orientation information sessions as well as sessions provided by various support departments (such as Enrolment and Student Administration, Residence Affairs, Student Affairs, Student Finance and Education Innovation).

One of the objectives of this institutional event was to assist in reaching registration targets and improve retention rates. In February 2019, the new first-year registration target was met. In the post-event survey, 94% of the respondents found the event engaging to very engaging.

The event won an Excellence Award from the Marketing, Advancement and Communication in Education (MACE) organisation.

Obviously, not every student could attend the day, but prospective students can take a virtual tour of any campus with 360 degree views of precincts around each faculty (<https://virtualcampus.up.ac.za>).

Research indicates that parents / guardians play a critical role in deciding where and if a student attends a tertiary institution. The undergraduate recruitment strategy emphasises the importance of responsible study / career choices and employability of students after completing a degree. Various initiatives are used to achieve this goal.

The following measures were taken in addition to the #ChooseUP event:

- JuniorTukkie Top Ten Day; Grade 12 Preparation Conference; Grade 9 Parents' and Learners' Day; Grade 10 Parents Evening; School Guidance Teachers and Faculty Information Day (Faculty-coordinated events included 'I want to be a vet', Health Sciences information sessions, etc.)
- Expanding the flagship JuniorTukkie programme to attract quality students through the DESA outreach programme



Professor Chika Sehoole, Dean of the Faculty of Education, on #ChooseUP Day

- Making greater use of the digital communication platform for prospective undergraduate students through the JuniorTukkie app
- Establishing sound relationships with prospective students in order to guide them towards making responsible study and career choices
- Communicating information on TuksSport, FLY@UP, WREn, hybrid teaching and learning, and other initiatives
- Establishing a Communication Unit within DESA to assist in providing more focused and better coordinated communication to (prospective) student markets
- Building relationships with internal / external partners, schools and communities

Differentiated Recruitment in Various Market Segments

As set out in the UP Strategic Plan 2025, UP aims to attract and select the most talented students from all South African communities, increasing diversity at the same time, through:

- targeting recruitment activities for students from IEB and Cambridge schools;
- initiatives to attract and reward top academic achievers in schools (top academic achievers are candidates with 85% + at school); and
- attracting quality prospective students – with special emphasis on students from previously disadvantaged communities (black and coloured learners) who have the academic ability and appropriate life skills to be successful in their studies.

At the Starting Line: Gearing up for University

In December 2017 the University launched a free, online university preparation course for provisionally accepted first-year students. This course aimed to develop a range of skills such as time management, note taking, study skills, goal setting and academic reading, before these prospective students entered the University. Most people have heard of MOOCs (massive open online courses), but this was a small, private online course (SPOC) for targeted students. By January 2018, 1 636 students had enrolled, with 14,4% completing the course. The course was then revised in line with feedback and relaunched at the #ChooseUP day on 4 August 2018 for provisionally accepted students. Data from January 2019 show that 2 199 made use of the SPOC prior to registration. Only 11,6% completed an assessment activity in the module, with 3,6% completing the course.

Entry

Registration 2018

The online registration process started on 3 January 2018 for returning students and proceeded without any major incidents. Assisted online registration for first-year students commenced on 10 January 2018 at the Hillcrest Campus. High volumes were experienced on Monday, 8 January, and on 10 and 11 January. More than 3 500 people made use of a variety of services on each of these days. All students who came to the Hillcrest campus were assisted by referring them to the Central Application Clearing House (CACH), providing career information or assisting conditionally admitted students with services needed such as registration, financial payments, accommodation, immigration clearance, etc.

Onboarding: Orientation and UPO

The first-year Orientation Programme (OP) is seen as the first academic involvement in a student's life at university and needs to be comprehensive. The evaluation of the abbreviated 2017 programme (a single day, influenced by the #FeesMustFall activities in late 2016) indicated that the period was insufficient to prepare the students for the experiences that followed. The report was used to inform the planning for 2018, so the programme reverted to being spread over a full week.

In recognition of the multifaceted nature of objectives of first-year orientation, the 2018 OP included a wide variety of sessions that focused on the first-year transition and created opportunities for academic and social integration. Specifically, in order to enhance the impact of the 2018 OP, efforts were made to incorporate each faculty's context by collaborating closely with faculties during the planning stages of the programme. In addition, the OP drew students' attention to the online extended orientation programme (UPO), thus providing the first-year students with access to academic support and consultation on academic challenges in the first semester. In order to fulfil the objectives of the OP, the faculty student advisors (FSAs) delivered the first-year academic support sessions. The evaluation of the 2018 programme indicated that the OP seemed to have achieved its overall objectives, as the majority of both students and staff who took part in the survey rated most of the questions in the evaluation favourably. There were a number of recommendations forthcoming from the report, which have been flagged to improve the 2019 OP.

Wrap-around Donor-funded Programmes

The university is grateful to the many individuals, families, companies and foundations that contribute to providing bursary and other support to bright but financially needy students registering at the University. Some bursaries are faculty-based, while others are institutional and open to any student who qualifies. However, there is a group of cross-faculty programmes, distinguished by wrap-around support, that are managed by the Department for Education Innovation, the Michael and Susan Dell Foundation, the MasterCard Foundation and the Thuthuka Foundation grants. Wrap-around support refers to the availability of at least a manager for scheduled check-ins, consultation, arranging additional activities and other support activities. A programme might also make provision for additional staff for counselling and advising.

Michael and Susan Dell Foundation (MSDF)

The University of Pretoria continued to manage two programmes from the MSDF: the Dell Young Leaders (DYL) Scholarship Program and the Sikelela Scholars Program (SSP).

Dell Young Leaders Scholarship Program

The MSDF continued to fund needy students under the DYL Scholarship Program (top-up bursaries plus wrap-around services) and the SSP (wrap-around services only). First-year students who are studying professional degree programmes and are eligible for the National Students Financial Aid Scheme (NSFAS) were invited to apply for these programmes.

The DYL programme took on its seventh cohort of 60 students at the University of Pretoria in 2018. This brought the total number of students awarded the Dell Young Leaders Scholarship at UP to 370.

The DYL programme saw a further 34 students complete their degrees at the end of 2018. This brought the total number who have completed their undergraduate degrees at the University of Pretoria to 136. Of these graduates, 100% have either gone on to postgraduate studies or have successfully been placed in the world of work. The retention rate (qualified or active) continues to track above 90%.



Dell Young Leaders 2018

The Sikelela Scholars Program

The SSP was launched at the University of Pretoria in June 2016 and seeks to empower young South Africans and reinforce their success, ensuring that they complete their chosen degree and are ultimately prepared to compete for meaningful employment post-graduation. A further 100 successful applicants received laptops, food and book incentives, mentoring, tutoring, skills development and online support.

MasterCard Foundation Scholars Program (MCFSP)

In 2018, the Mastercard Foundation Scholars Program (MCFSP) at the University of Pretoria entered its fifth year, and an additional 53 students from 12 African countries were selected to benefit from the scholarship.

The programme was pleased to welcome a new manager in 2018, Dr Ololade Shyllon. She started on 1 July. A new postgraduate academic coordinator,

- The Golden Key International Honour Society recognised 11 scholars for outstanding academic achievement at the University of Pretoria and extended an invitation to them to join the society.
- Nineteen scholars received awards from the University of Pretoria in recognition of their excellent academic achievements. Of these, 12 received the UP Achievement Award, six received the UP Merit Award and one received the Vice-Chancellor's Discretionary Merit Award, which is awarded to

- A second-year master's student in environmental management received a Green Talent Award for her master's research on renewable energy strategies for energy poverty alleviation. She was one of 21 researchers from around the world who received this award. In October, she attended a two-week science forum in Germany, during which she received her award at a ceremony. The award honours young researchers from around the world for the outstanding academic achievement of making the world sustainable through their research.
- Another second-year master's student in project management from Kenya attended the 15th Skoll Emerging Leaders Conference on Social Entrepreneurship in Oxford, United Kingdom, in April 2018. The forum brought together notable world figures.

Mentoring: At the Intersection of Entry and Progress

Mentoring is run by the Department of Student Affairs (DSA). It is triggered by the Student Academic Readiness Survey (STARS) administered during first-year orientation by the Department for Education Innovation. The survey is the earliest alert of potential problems (funding, skills, self-efficacy, family support), as self-identified by students. The academic point score (APS) is added to the data, as well as first-generation status and urban / rural background, to create a comprehensive risk profile.

At this stage, the STARS Mentorship Programme has been firmly established on campus. Other students may also ask directly for a mentor.

The mentorship programme has a dual purpose in developing both mentors and mentees. Mentors develop important career attributes such as facilitation, decision-making, communication and mentoring skills, to name but a few. Mentees, on the other hand, are assisted socially and emotionally with a view to easing their transition to university,

enhancing their academic performance and enabling them to become 'streetwise' on campus.

The model on which the programme is run is very cost effective. Mentors volunteer, and only the four mentor coordinators, appointed to assist with training and monitoring, are paid. In 2018, about 420 students volunteered to be mentors, many of whom had themselves been mentored in their first year. DSA's records show that 665 mentees were allocated to mentors. Each mentor was allocated one or two students, a very favourable ratio.

Both mentors and mentees were diverse in race, gender and home language. These attributes were not considered when allocating mentors to mentees, but allowed for flexibility if a student expressed a preference: for instance, if a female student requested a female mentor.

Mentor reports show referrals to lecturers, tutors, residences, Faculty Administration, Student Affairs, health services, advisors and the Student Service Centre.

Frequency of meetings varied from monthly to weekly. Many maintained regular contact on WhatsApp. Given the full timetables of both mentors and mentees, this might be the most effective way to maintain contact.

Following established practice, the Department for Education Innovation conducted research into the programme in each semester. The conclusion is that mentees who take up the opportunity to receive assistance through mentoring achieve psycho-social fit and become well-balanced learners.

Progress

FLY@UP

The Finish Line is Yours (FLY@UP) strengthened its role in promoting student success in minimum time in 2018. FLY@UP is the University's



The Vice-Chancellor and Principal, Professor Cheryl de la Rey (centre), welcomes the female complement of new 2018 MCFSP students

Ikusasa Student Financial Aid Programme (ISFAP)

The Thuthuka Foundation supports other programmes in the University, but they also initiated the Ikusasa Student Financial Aid Programme (ISFAP) in 2017 as a pilot project to address the so-called 'missing middle' student who did not qualify for NSFAS funding. While the ISFAP provided bursaries to selected students, the Department of Higher Education and Training (DHET) funded wrap-around services for 2017 and 2018. The total number of funded students for 2018 was 269, studying accounting science, actuarial science, medicine and engineering.

Dr Efe Iske, was appointed, as well as a staff member for recruitment, Mr Sifiso Khubani, both starting on 1 August.

The following were some of the highlights from 2018:

- Thirty-two scholars graduated in April 2018 (four undergraduate, nineteen honours and eight master's) having completed their degrees in the 2017 academic year. Fifteen of the honours graduates went on to enrol for master's degrees, and all four undergraduates have also enrolled for postgraduate studies, funded by the MCFSP. Notably, seven of the graduating scholars (six honours and one master's) obtained an average of 75% or higher.

undergraduate students who achieved 90% in their grade 12 results prior to joining the University.

- A scholar received the top second-year mining engineering award for the 2017 academic year.
- An undergraduate scholar studying towards a degree in food science received the Amanda Minaar Award for outstanding academic achievement in the Department of Food Science.
- A scholar completed his Bachelor of Investment Management at the top of his class in 2018, with a final average of 81%. He is continuing as a scholar and registered for his honours in investment management for the 2019 academic year.



flagship student success and completion programme that integrates student engagement and development initiatives coherently. A particular focus in 2018 was on the growth mindset and a holistic approach to student experience and success, with each support and academic department contributing. Students were guided to understand that the brain is wired to learn, so everyone can learn through hard work and the help of others. Students could even take a photograph with a growth mindset frame visualising themselves graduating.

The message was that they should work towards resilience, adaptability, innovation and persistence in adversity. Students were again encouraged to accept responsibility for using available University resources (mentors, tutors, advisors, library, counsellors, health services) introduced during the Orientation Programme and promoted through UPO and campus events.



FLY@UP activation at the Piazza



FLY@UP activation at the library

Involving All Staff

The FLY@UP team and the Vice Principal: Academic, Professor Duncan, went on a roadshow to embed the message that students' well-being and success are everyone's responsibility. Support services such as Security Services, Residence Affairs, Finance and others, as well as individual faculty student administration departments, were visited to encourage the efforts made to help students succeed. Security Services, for instance, is aware that students are particularly stressed around examination time and undertook to facilitate entry to the campuses at that time so that students were not worried about arriving on time at the examination venue. The roadshow also highlighted problems such as students dropping modules to maintain their GPA in order to retain their residence placements, but effectively ensuring that they would not graduate in minimum time.

Support staff in faculties are often the first point of contact for many students. To ensure excellent client service, FLY@UP offered breakfast / lunch sessions to support staff (specifically secretaries and student administration staff) to sensitise them to the challenges students face. Staff members were encouraged to share positive anecdotes of how they assisted students.

Involving the Faculty Student Advisors and UPO

FLY@UP adopted UPO, the University of Pretoria's compulsory online orientation module, as its flagship programme and aligned the content and messaging of UPO with that of FLY@UP. All new first-year students were registered for the UPO module assigned to their faculty. UPO addresses the following themes:

- An introduction to the FSAs, mentoring, tutoring, and finances and budgeting
- Time management and goal setting
- Academic reading and writing
- Note-taking and study methods
- Reflecting on adaptation (done in the middle of semester one)
- Motivation in the form of success stories of senior students
- Examination preparation

Orientation for first-year students provides an overload of information; its continuation online reinforces essential messages and services during the first semester. UPO had a 90% completion rate in 2018.

UPO is a joint initiative involving FLY@UP and the FSAs. Feedback from students in 2018 indicated that:

- 78% felt the course assisted them in their studies,
- 80% felt more confident that they could succeed in their studies after completing UPO,
- 81% had applied what they had learned in UPO, and
- 77% felt their faculty student advisor was adequately involved in the UPO module.

Involving the Students

Various 'time management and goal setting' and 'examination preparation' training workshops were presented to student leaders to equip them to host similar sessions with the students in their care. In total, 43 student leaders attended these workshops.

Some students were trained as FLY@UP ambassadors to support the initiative and to add more relevance to the activations. Eight piazza activations were held with the aim of making resources accessible to all students to provide them with the necessary support to graduate in the minimum time.

Students were invited to share their orientation and academic success stories through a competition launched by FLY@UP.

One hundred and twenty-two students entered orientation success stories, while 365 entered their academic success stories. These stories will be used in 2019 to motivate other students.

The Vice-Principal: Academic organised two meetings with class representatives.

I love my library!

- Providing the opportunity of promotion without writing an examination if the student achieved a distinction during the year
- Receiving departmental awards
- Writing letters of commendation from the dean for the top 10% based on GPA
- Making monetary awards

The Vice Principal: Academic recognised the need to provide additional stimulus for high achievers and therefore organised a leadership development journey for the Vice Chancellor's awardees, run by Common Purpose South Africa. The pilot with first-year awardees in 2018, about 50 students, will be extended to second- and third-year students in later years.

Improving the Provision and Use of E-Technology and Further Developing the Hybrid Teaching and Learning Model

Videos of Good Hybrid Teaching

To make sure academics and other stakeholders are aware of innovations in teaching and assessment within a hybrid framework, effective lecturers were identified and videos made of their practices. Video links were shared with lecturers across the University through the offices of the Deputy Deans: Teaching and Learning.

Accounting: <https://www.youtube.com/watch?v=JrZ0HL-Ov7Q>

Engineering: <https://www.youtube.com/watch?v=uU-WOTweH5Y>

Law: <https://www.youtube.com/watch?v=V4DoePqLexc>

Sociology: <https://www.youtube.com/watch?v=KWZaGwY8VoQ>

Health sciences: <https://www.youtube.com/watch?v=-wkvcO3B8qc>

Augmentative and alternative communication: <https://www.youtube.com/watch?v=B43S7nqyT3M>

clickUP

The University has the longest history of use of a learning management system in South Africa, and in 2018 it celebrated 20 years of its use with the current provider, Blackboard, at a function at the CSIR on 5 October.

At the dinner, the Blackboard representatives announced that the company would sponsor two technology education scholarships over two years to celebrate its 20-year partnership with the University of Pretoria. The funds will be awarded to two postgraduate students for the BEdHons degree in computer-integrated education, housed in UP's Department of Science, Mathematics and Technology Education in the Faculty of Education.



UP and Bb Partnership Dinner

He and his team briefed the student leaders on developments with FLY@UP, research into well-being, the Ready for Work initiative and other matters. In turn, students shared concerns with the Vice Principal. At the first meeting in May, students raised issues such as challenges in accessing textbooks or food when financial constraints were an issue; additional training for students and lecturers in the use of clickUP; and concerns about health and counselling. At the October meeting, issues of technology literacy were again raised as well as questions about the use of clickers and student evaluation of teaching forms. The class representatives welcomed the research into student well-being.

High Achievers

Most student support and development initiatives are aimed at all students in the hope that the at-risk students would also make use of the services and opportunities provided without feeling stigmatised. However, students who perform badly in assessments might be deliberately directed to an intervention. Faculties note, however, that high-performing students often make more use of student success interventions (tutors, advisors) than do struggling students.

Many faculties rewarded high-performing students in ways such as the following:

- Placing the students on the Dean's List
- Awarding bursaries (including for academically strong students with historical debt)



Professor Salome Human-Vogel, Deputy Dean: Teaching and Learning, Faculty of Education, receiving the bursary from Lee Blakemore of Blackboard. From left to right: Mr Dolf Jordaan, Professor Wendy Kilfoil, Professor Salome Human-Vogel, Lee Blakemore (Blackboard), Professor Norman Duncan (Vice Principal: Academic) and Professor Gerrit Stols.

The uptake of the learning management system, Blackboard Learn, branded as clickUP at the University, has increased significantly over the past five years: from 81,95% in 2014 to 94,43% in 2018 for undergraduate modules actively using the system.

What the Department for Education Innovation is working on intensively with academics is increasing the quality of the engagement in the online environment and progressing towards the hybrid target of up to 30% of each module comprising online interaction and engagement integrated meaningfully with the contact elements of the module.

Student activity in clickUP has shown significant growth in general during the last three academic years as illustrated in figure 1.

Research into Blended Learning

A group of South African universities received a two-year grant from the Carnegie Foundation of New York to conduct research into blended learning in relation to #FeesMustFall. They were the University of Pretoria (the lead university), the University of Cape Town, the University of the Free State and the University of Johannesburg. Using mixed methods research that included focus group interviews of staff and students, individual interviews, analysis of quantitative marks data and questionnaires, each university produced a case study.

Ms Detken Scheepers presented the UP case study at the National Blended Learning Case Studies Symposium at the Birchwood Conference Centre in Kempton Park on 1 June 2018. Mr Alastair Smart and Ms Gaby Pretorius presented faculty case studies on the results from the EBIT and Humanities faculties at the Flexible Futures conference in October. During this conference, Professor Wendy Kilfoil (the project manager) chaired a panel discussion where the colleagues from the four participating universities discussed the perceptions of blended learning at their institutions during the #FeesMustFall campaign.

At the University of Pretoria, most lecturers (83,13%) and students (67,93%) were positive about the use of blended / hybrid learning. The majority of both lecturers (77%) and students (57,85%) agreed that the use of blended / hybrid learning contributed substantially to the completion of the academic year in 2016. Lecturers and students emphasised that contact classes should remain an essential part of teaching and learning at UP. Lecturers' views indicated that using blended / hybrid learning is necessary for 21st-century teaching practice (90,13%), improves the way that they teach students (89,94%), improves students' engagement with the subject matter (88,24%), and adds value to students' learning despite the extra work required (85,35%). A third of the student respondents agreed that the use of technology helped them to keep on track and pass their modules, while 17,62% attested to the fact that it kept them motivated to continue studying. Most undergraduate students reported a preparedness to use the technological tools the lecturers employed: 53% indicated that they were fully prepared, while 33% said they were prepared to use most of the technology. However,



Figure 1: clickUP measurement trends: 2015-2018

about a quarter of the students indicated that their learning was negatively impacted by their lack of Internet access. About two thirds of the students specified that they were not ready to study on their own and struggled to manage their time and assimilate the content alone.

Blended learning, to be done well and to promote student engagement and success, must be designed on sound online teaching principles. Lecturers and students should work online some of the time as part of a normal, 21st-century approach to teaching and learning.

Coursework Master's Initiative Reaches Maturity

The Department for Education Innovation continued to collaborate with academics on the development of coursework master's (CWM) degrees in 2018. Continuous support was provided to existing CWM degrees to improve their online environments. The support included staff development, student training and support and project management through the use of the ADDIE design and development model for online facilitation.

Involvement in CWM degrees accentuated the implications of institutional policies and support mechanisms to allow students to complete the degrees in minimum time. Ongoing internal consultation is still required to overcome these barriers.

Fully Online Programmes to Extend the University's National and International Reach

In 2018, the University signed a contract with Academic Partnerships and their local chapter (Higher Ed Partners South Africa – HEP-SA) with the aim of expanding access to the UP brand by offering fully online degree programmes. The aim of the project is to make high-quality and affordable degree and diploma programmes available to students who are not able to attend class physically on one of the UP campuses. In order to get the initiative off the ground, a new department, called Comprehensive Online Education Services, was established under the leadership of Professor Linda van Ryneveld.

This special project is being rolled out in phases. For phase 1, five programmes have been identified to be developed for fully online delivery:

- Postgraduate Diploma in Public Health (Health Sciences)
- Postgraduate Diploma in Public Management (EMS)
- Master of Education in Management and Leadership (Education)
- Postgraduate Diploma in Nursing Education (Health Sciences)
- General Management Programme (GIBS)

Parallel to the development of the online learning materials for these programmes, profound changes are also being made to PeopleSoft to accommodate multiple starting points per year. Once the system goes live, students will be able to register for a programme and, within two months, kick-start their studies with their first online module.

There is also a process underway to integrate the Blackboard Learn-based clickUP with HEP-SA's own management system to ensure that real-time data are made available to the contact centre's retention staff so that they can immediately and personally follow up on students who are identified as 'at risk'.

The University is excited to offer students from all over the world, but specifically elsewhere in Africa, the opportunity to pursue a UP qualification without ever having to set foot on campus. Apart from broadening UP's international footprint, this initiative

also aims to provide access to those South African students who, for whatever reason, cannot take time out of their personal schedules to attend face-to-face classes on campus.

The Department of Information Technology Services (ITS)

The Department of Information Technology Services (ITS) contributes to teaching and learning excellence through its Unit for Academic IT (UAIT). In 2018, the department continued the drive to optimise the use of technology in both lecture venues and student computer laboratories. This drive generated a number of exciting projects aimed at improving the teaching and learning experience and included the expansion of Wi-Fi coverage to all lecture venues, the upgrade of Audio Visual (AV) equipment in lecture venues, as well as the renewal of technology in Student Computer Laboratories.

Wi-Fi connectivity is no longer a luxury and has become essential in education. It was a mammoth task to realise full high-density (HD) Wi-Fi coverage in approximately 400 lecture venues across all campuses, and 427 wireless access points were implemented to achieve this objective.

Quality AV equipment in lecture venues forms a vital part of teaching and learning, and various projects were undertaken in an effort to improve the experience of lecturers and students. First was the replacement of the microphone systems in all venues with high-quality Sennhieser equipment. This was followed by the first phase of data projector replacements, as well as the replacement of overhead projectors with document cameras. A second phase of this project focused on the implementation of dual projection AV facilities in larger lecture venues. A project is currently in development that will make the remote monitoring and proactive maintenance of AV equipment a reality through the implementation of specialised software, which monitors equipment and notifies technicians of components in need of replacement.

Student Computing Services further offer a wide range of services focused on teaching and learning and facilitating the work of lecturers as well as students through the use of various technologies.

Some of the recent projects that were launched in order to improve the service delivery in computer facilities across the various campuses include the improvement of AV technologies in various classroom facilities, the acquisition and implementation of a comprehensive computer laboratory management system and the replacement of standard desktop computers with more modern 'all-in-one' units.

Extensive upgrade projects and expansion of a number of facilities at Hatfield, Prinshof, Groenkloof, Onderstepoort and Mamelodi campuses were also undertaken.

Furthermore, additional Wi-Fi capabilities have been installed at a number of computer facilities, provision has been made for students who would like to make use of their own computing devices, and a dedicated support service has been established for students who make use of their own computing devices.

The most recent development was the incorporation of the management of student computing facilities, situated within the libraries across the various campuses, into the Student Computing Division of the UAIT. This boosted the number of computers being managed by Student Computing to approximately 7 000.

A project is currently underway to develop UP's first mobile application. The initial phase of this project entailed the selection of a suitable mobile development framework and led to the acquisition of the Modo Labs platform. The main development theme of the new UP mobile app will be to design a quick-reference web applications mobile app pointing to existing content by making use of, for instance, Extensible Mark-up Language (XML). ITS will expand this development work to include native app links coded into the mobile app for fast performance and a high degree of reliability. The target date for implementation of the mobile application is 31 August 2019.

Completion

Careers Services

The Department for Enrolment and Student Administration plays an important role in the student's educational pathway from recruitment to graduation. Their Career Services office has long offered a range of support to students. In 2018, they presented various contact workshops to enhance employability. These included personal branding, presentation skills, LinkedIn profiling, artificial intelligence, interview preparation and CVs. In addition to the workshops, 14 individual events were hosted for companies on campus, attended by 1 980 students.

Students in some programmes find it particularly difficult to get employment, and Career Services launched a new initiative to assist such students.

A close working relationship with employers resulted in enhanced employer involvement in UP activities, and the career fairs were well attended by students. Career Fairs were organised for the faculties

of Law, Economic and Management Sciences (for accounting), Natural and Agricultural Sciences (for actuarial science) and Engineering, Built Environment and IT (specifically for the engineering students), and there was a general career fair.

The *Graduate Recruitment Handbook* is an annual publication produced by the Career Services office to provide advice to UP students for the transition from university to the corporate environment. An electronic version is available all year round on TuksCareers (student portal) and the UP website. Mass e-mails promoting the use of the handbook are sent to approximately 60 000 students on an ongoing basis throughout the year.

TuksCareers is an online application that allows UP to communicate with students about potential employers and job offerings. The system also offers students the functionality to book for appointments and events and to access resources to help them be ready for work. The database has 849 active companies, and 251 job opportunities were posted by companies in the last year.

Various stakeholders were engaged to promote work-integrated learning and internships, such as Community Engagement in the Department for Education Innovation at UP, Boston College, Ford, Absa, Common Purpose, the Association of Commonwealth Universities, Toyota, Public Investment Corporation and the University of Regina. Career Services also assisted students with work experience by facilitating on-campus job opportunities. For the first time, an intern from Oxford University spent several weeks on a UP campus, gaining experience in institutional research and career services. Dr Martina Jordaan, the community engagement organiser in the Faculty of Engineering, Built Environment and IT, launched a project to develop mentorship opportunities.

Collaboration was established with the Alumni Office to track alumni and their employers via LinkedIn. Towards the end of 2018, a South African employer database with designations and contact details was purchased in collaboration with the Department of University Relations.

Surveys completed in 2018 include a graduate destination survey and an employer survey (what employers want).

Initiatives Focused on Work Readiness and Entrepreneurship

Career Services has more recently linked to the Work Readiness and Entrepreneurship (WREn) initiative of the Vice Principal: Academic through the Ready for Work programme. The undergraduate academic curriculum focuses to some extent on the knowledge and skills students might need in the workplace; however, pragmatic skills on how to write a CV, how to secure the first interview and how to behave at that interview to secure the first job, and how to remain meaningfully employed over a lifetime often need to be learnt outside the formal curriculum. Using their knowledge and skills relating to career planning, job preparation and workplace skills acquired over a number of years, in 2017 the Career Services office partnered with Enterprises UP to develop a number of free professional online development (POD) modules to equip graduates to be competitive when entering the job market, and the number of modules was increased in 2018.

The Ready for Work programme now consists of four free core packages comprising five to seven modules each: Career Planning, Job Preparation, Workplace Skills and Personal Development (see <http://www.enterprises.up.ac.za/training-solutions/ready4work/>). Each package takes about five hours to complete and, after assessment, students receive certificates that they may use to enhance their curriculum vitae. The packages are self-paced and are presented fully online. A fifth package, focusing on specialised skills, consists of online courses and face-to-face workshops available at a nominal fee. During 2018 there were 2 018 enrolments in the free packages, with 1 464 students completing their PODs (72,55% – excellent for self-study online programmes). Feedback was overwhelmingly positive.

The plan for 2019 is for each of the faculties to produce three PODs to add to the free Ready for Work programme.

Professor Duncan, Vice-Principal: Academic, organised several 'Future of Work' workshops and seminars:

- 31 January – 'Future of Work' – Mr Barry Vorster, Director at PWC
- 16 May – 'Future of Work' – Mr Willem Roos, CEO Rain Mobile and former CEO and founder of Outsurance
- 30 May – 'The entrepreneurial university' – Professor Paul Coyle, Founder of the Entrepreneurial Mindset Network, London
- 31 August – 'Employability' – Mr Barry Vorster and PWC team





Flexible-seating teaching venue in Mathematics Building

Several articles were written specifically for Ready for Work:

'Preparing for an interview' – Ms Elise Ronquest, MD, Career Management Consulting

'Tips for online job applications' – Information provided by Torrecid SA (Inc in Spain)

'Put your career in the Fourth Industrial Revolution' – Professor Vasu Reddy, Dean: Faculty of Humanities

'Workforce of the future' – PWC

'Will robots really steal our jobs?' – PWC

'Workforce of the future – The views of 10 000 workers' – PWC

Perdeby also published an article promoting the Ready for Work programme.

A Ready for Work website has been developed that provides a one-stop landing page with links to all related services and information (<https://www.up.ac.za/ready-for-work>).

Development of Learning Environments and Experiences to Enhance Student Success

Department of Facilities Management

Social Learning Spaces

The transformation of teaching and learning spaces is an ongoing objective of the Campus Planning and Development Division of the Department of Facilities Management. Implementation occurs through ongoing planning and engagement initiatives, small-scale interventions and major construction projects.

The purpose of these spaces is to support the way in which students learn. The facilities are developed to enhance the specific pedagogy and student experience. These social learning spaces need to mimic real-world work and social environments that foster organic interactions and cross-disciplinary problem-solving, are flexible and provide forward-focusing platforms that usher in technology.

Ongoing Planning Initiatives

Ongoing planning initiatives are done in conjunction with various faculties, students, the Department of Institutional Planning and the Department of Library Services with the support of external consultants. The planning area under focus for 2019 is the redesign of the libraries, the Agriculture Building (Hatfield Campus) and the Student Centre (Hatfield Campus), as well as the optimisation of the UP residences' underutilised dining halls. Surveys, workshops and interviews are an integral part of the planning process. The interactions inform the design directive. It is critical to engage students because the spaces have a big influence on their experience at UP. Some interesting findings from research in 2018 include:

86% of students would welcome open social spaces where one can eat and work between classes. Students want to eat and work on their laptops. These spaces and furniture layouts should provide the possibility to work in groups as well as accommodate social activities during break times.

Multi-functionality, modern-looking environments and quick accessibility to food and drinks are also essential. One space should accommodate a variety of options; students want an area for 'down time', socialising and quiet space.

Spaces must be user-friendly. They must have a logical flow and different comfortable seating options.

Small Interventions, Major-impact Projects

The process of testing assumptions by introducing small-scale interventions and testing the response of students and staff has been extremely insightful. The Department of Library Services has provided exceptional support in this regard.

A temporary coffee kiosk was placed in the Library foyer (Hatfield Campus) at the end of last year and a survey was conducted: 82% of the students' responses were overwhelming positive about the idea. The concerns raised were regarding cleanliness, noise, affordability and regulation of the coffee kiosk. The students were helpful in suggesting ideas for an operational model, defining expectations for a supplier, eco-friendly cups and design elements. The students were also asked to choose a new colour pallet for the library.

The Mathematics Building has several fixed-seating teaching venues. These are now used as postgraduate teaching facilities and tutor venues. The fixed 50-seat layout is not necessarily conducive to modern pedagogy. The fixed seating was removed and stored, and a furniture supplier provided a variety of educational furniture in order to test a few combinations. Glass writing boards were also installed in the venue. Teaching staff quickly responded with suggestions and a final layout was determined. The seating now consists of loose chairs on wheels with writing tablets and standard stackable chairs with movable tables. The combination of furniture allows for a variety of teaching options.



3D rendering of Akanyang multifunctional facilities

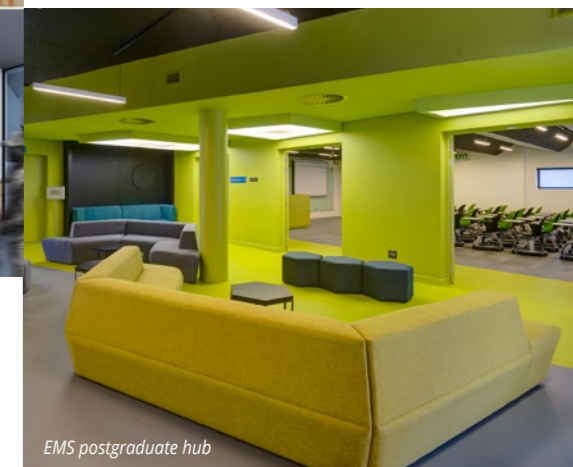
Large-scale Construction Projects

Recently completed projects include Economic and Management Sciences' new postgraduate hub and the IT Building atrium upgrade.

Refurbishments in construction for 2019 include the following:

- Akanyang – shared academic and student support service space with multifunctional facilities, training room, counselling pods, coffee kiosk, social external areas and quiet internal relaxing areas
- Arnold Theiler – upgrading the foyer spaces of the main lecture complex at Onderstepoort Campus to allow for a coffee kiosk and break areas
- Mamelodi Library – addressing the need for group discussion areas and incorporating social learning spaces
- Monastery Hall upgrade – residence dining hall upgrade, increasing seating capacity in and around the building and creating more effective social learning spaces
- HW Snyman upgrade on Prinshof Campus – refurbish underutilised foyer to include social learning areas

The spaces encourage students to stay on the campus. This in turn enhances accessibility and promotes successful student learning, which is a critical goal for UP. These spaces also foster and sustain a transformed, inclusive and equitable university community.



EMS postgraduate hub



EMS postgraduate hub



3D rendering of Monastery Hall residence dining hall



3D rendering of IT Building atrium layout



3D rendering of Arnold Theiler foyer

Department of Library Services

During 2018, the Department of Library Services (DLS) embarked on implementing a new strategic plan for the creation of a 21st-century library, situated within the context of international knowledge developments such as the Fourth Industrial Revolution and the intensification of digitised processes, products and services.

teaching and learning roadmap, and secondly to create a Beehive tool. The teaching and learning roadmap is a framework that includes the different learning processes of students and the role the library can and should play in each process. The aim of the roadmap is to link students to relevant support and learning enablement services on campus (for example, student advisors, FLY@UP and student support). The second

product, the Beehive, is an interactive tool that gives students quick and easy access to relevant information and digitised tutorials.

The overarching goal of both these tools is to support undergraduate students at UP through all their learning processes and enable learning. During the development of these two outputs, a number of discussions and brainstorming sessions were held with relevant partners on campus (student advisors, Academic Information Management (AIM) and FLY@UP programme coordinators), as well as students. These sessions contributed to the identification of gaps and ensured that the library was adding value and supporting the students' path to academic success.

Digital Literacy Survey

Other projects driven by this focus area included a digital literacy survey with an undergraduate student focus group. This digital literacy survey aimed at establishing the digital literacy needs and levels of our students and was conducted from March to April 2018. The 569 respondents indicated the following:

- The majority of students use and have access to smartphones, which they use

to communicate on social media and search the Internet. (These findings correlate with the results of the ECAR survey run by the Department for Education Innovation in 2018 with a group of 2 472 students, which revealed that 96% of respondents had smartphones, 87,7% had access to laptops, 40,8% to tablets and 38,5% to desktop computers.) A large percentage (40%) of the students indicated

- Students were unaware of services and products that the library already provided. This indicates the importance of increased visibility of the library products and services.
- Improved navigation of the library website is also a priority.

The digital literacy survey results, as well as the two abovementioned teaching and learning tools, were also discussed with

Both a main help desk (for quick general enquiries) and a subject-specific information desk (for assignment support) were created on the entrance level of the Merensky 2 Library to better serve the undergraduate students.

Student Social Spaces

A new social space was created in the Merensky 2 Library during the examination period.

The Marketing Office identified a need to support undergraduate students during examination times and opened the doors of one of their staff seminar rooms to students during May to June and October to November. This venue was upgraded with modern furniture earlier in the year and was mainly used for staff meetings, but students were allowed to make use of this welcoming facility during the examination periods. The purpose of this initiative was to demonstrate that the library cared about the well-being of students and to provide them with a neutral space where they could unwind and beat the examination stress with some creative activities such as building jigsaw puzzles, colouring in, playing board or card games or sudoku. Students were encouraged to bring their own refreshments and unwind between examination sessions. An informal survey indicated that 98% of the students said they would recommend this facility to their friends and that everyone wanted the library to repeat the exercise during future examination periods. A few students were interviewed and asked to share why they would choose this venue over other social spaces on campus, and this was their feedback:

- Nolwazi Radebe: 'It's a more relaxed study environment and we can eat in this room. It is more air-conditioned compared to the study centre. We study here and then take breaks again. A classmate was here and he told me about this room and I decided to check it out.'



My Library, My Success Partner

Supporting Teaching and Learning

To stay relevant to our academic clients' changing needs, one of the nine high-level focus areas to achieve the goal of creating a 21st-century library is the creation of specialised services for teaching and learning. The teaching and learning focus area, driven by the Learning Centre coordinator, Ms Gerda Ehlers, and overseen by Deputy Director Ms Lindiwe Soyizwapi, underlines the importance the library places on student success and teaching and learning support.

Roadmap and Beehive

The outputs of the teaching and learning focus area were firstly to design a



Instructions
Click on the labeled blocks to explore a topic. Press the forward arrow on your keyboard to continue with the sub-topics. Click on the Back button on the bottom left corner to return to this screen

Beehive tool

We would like your feedback
<http://bit.do/ezMBE>
<http://www.library.up.ac.za>



Touchscreen self-help terminals at Merensky 2 Library

that limited access to computers and training prevented them from improving their computer literacy level.

- Although only 3% of these 569 respondents indicated that they use the library app, marketing during the Orientation Week and monthly FLY@UP collaboration sessions on the Hatfield campus ensured an overwhelming increase in its download and use.
- The majority of students indicated that they prefer to access information on Google and online.
- Students indicated a need for an increase in a variety of online training and step-by-step guides.

students during focus group sessions. The teaching and learning focus area will continuously upgrade current teaching and learning products and develop new ones to support students academically and ensure their success.

Undergraduate Support

Centralisation of Information Desks and Self-Help Facilities

The library centralised information services during 2018. Touchscreen self-help terminals were implemented on all the levels of the Merensky 2 Library to assist students with frequently asked questions and locating books and journals.



Examination relaxation room at Merensky 2 Library

- Kefilwe Shongoane: 'The study centre is a bit stuffy, so I am here because this room keeps me awake. When you take a study break in the library, you watch YouTube videos, and then you end up losing track of time, but here in this room, it's easier to remind yourself, break is over, it's time to study.'

MakerSpace Support to a Visually Disabled Student

One of the library MakerSpace highlights was the visual aid project, which assisted in the teaching and assessment of a visually impaired student. This collaboration involved lecturer Dr Rivak Punchoo, pathologists in the Department of Chemical Pathology, the Disability Unit and the library MakerSpace, who together developed 3D files from prescribed readings in the field of Human Physiology and adapted them into physical form. Methods in 3D print design that were employed included tracing, computer aided design (CAD) software, mechanical reproduction with the printers, and finally braille-labelling. A legend was created to follow the tagged graphs in order to allow audio-feedback. By making the human physiology imagery legible in physical form, key concepts aligned to studying strategies could be deployed to allow teaching and assessment. This project was presented at the SAAHE (South African Association of Health Educationalists) Conference in 2018 and was awarded as one of the best posters. The library MakerSpace hopes to pursue further endeavours like this to enhance teaching and learning for our disabled students and to facilitate research in new and ground-breaking ways.

Interesting Statistics

Some interesting library statistics regarding undergraduate student support by the library:

- Undergraduate student enquiries: 46 556
- Undergraduate contact sessions: 2 544
- Undergraduate training attendees: 18 422
- 'Chat to a librarian' (in real time) sessions: increased from 348 during 2017 to 1 375 during 2018
- 'Ask a librarian' questions: 2 051

Upscaling the Extent of Data-based Decision-making

The University of Pretoria is currently a national leader in the use of data to support student success. In the past few years, the University has focused on learning and learning analytics, as well as more general academic analytics, and continued to do so in 2018.

Tshebi

The Vice Principal: Academic established an analytics team, Tshebi, in 2016, which focused on analysing data to improve undergraduate student success. In 2018, the committee met every third Monday to consider UP data sets and take actions. Tshebi is composed of faculty representatives (mainly deputy deans for teaching and learning), Education Innovation, ITS, Enrolment and Student Administration, Institutional Planning (sub-department Institutional Research and Planning – BIRAP) and Student Affairs.

The intended purpose of the data presented at this committee was to allow for knowledgeable discussion and decision-making. Various systems were used to produce reports for this purpose, such as the Higher Education Data Analyser (HEDA), Blackboard Analytics for Learn and various statistical models like Bayesian models and cluster and survival analyses. Qualitative research into student well-being and the characteristics of successful students was launched.

A particular focus in 2018 was training on the PowerHEDA dashboards to build knowledge of how to use faculty data that are already accessible to all faculties through PowerHEDA. Staff from BIRAP did presentations at the start of each meeting to show a different aspect of using and manipulating the dashboards. After the first two presentations, deputy deans were asked to consult their dashboards and prepare their own presentations on what they had learnt and actioned. The first set of presentations yielded extremely sensible and creative uses of the dashboards so the training had

an impact. These activities were in addition to the standard focus on the differential success rates of students, including graduation rates, progression, determinants of drop-out and student engagement.

The Siyaphumelela Grant from the Kresge Foundation

The three-year funding from the Kresge Foundation for Siyaphumelela focused on data-based decision-making to increase student success. It came to an end in December 2018 but the University successfully applied for a no-cost extension till the end of 2019 to use up unspent funds and a further bonus of \$100 000 for the use of predictive analytics and a 'nudging' campaign. The University had to self-fund the nudging campaign and the bonus grant will only be awarded in 2019 if the project is successful.

Nudging is an approach that steers people in particular directions, but that also allows them to go their own way (Sunstein, 2014). During the 2018 registration process, the total credits of first-time entering students registered for three- and four-year bachelor's programmes from selected faculties were downloaded and the students identified who either over- or under-subscribed their credit load. These students were contacted to 'nudge' them to change their programme load to the optimal level. After the first semester, the credit-fail ratio of all first-semester modules was calculated. From the credit-fail ratio, five groups were identified for the nudging campaign. Depending on the nudge category, students received a specific message with a 'call to action'. The content of the messages advised students to consult with a Faculty Student Advisor, use online self-help material (UPO) or to continue with good work. Both the first- and second-semester nudges promise to lead to improved progression rates to the second academic year.

Part of the Siyaphumelela grant was used by the Department for Education Innovation to implement the student success matrix from the Predictive Analytics Report (PAR) Framework, a division of Hobsons, Inc. The department held group interviews with faculties and various support departments to collect their interventions. These interventions were captured on the SSMx in 2018 and can be used in 2019 to understand the range of services offered to students within faculties and institutionally, including unnecessary duplication or the need for new interventions where there are gaps.

As one condition for the Siyaphumelela grant, participating universities had to commit to using the South African Survey of Student Engagement (SASSE). During 2018 the SASSE and LSSE (the lecturer equivalent) were administered to undergraduate students and lecturers teaching undergraduate modules at the University. As in the past, the participation rates were low. However, trends that emerged across the survey cohorts (2014, 2016 and 2018) should provide enough evidence of challenges that students are facing that are inhibiting their engagement. The SASSE report will be disaggregated by faculty and distributed via the Vice Principal: Academic to each faculty in 2019.

In addition to the funding, UP benefits from attending and presenting at the annual Siyaphumelela Conference, held in 2018 at the Wanderers' Club in Johannesburg. UP's institutional presentation was entitled 'Beyond data and the growth mindset', and three SRC members contributed their stories. The University also benefitted from data coaching from Ms Jan Lyddon, who spent two days at the University in November. Ms Lyddon is a data coach for Achieving the Dream in the USA, a community college movement to improve student success through data. The Kresge Foundation also funded two people from the University to attend the Achieving the Dream conference in the USA in February: Professor Salome Human-Vogel, the new deputy dean in the Faculty of Education, and the academic coordinator from the Mamelodi campus.

Reference

Sunstein, CR. (2014.) Nudging: A Very Short Guide, 37. J, *Consumer Pol'y* 583. <https://dash.harvard.edu/handle/1/16205305>.

Bayesian Networks for Critical Path Analysis to Understand Student Progress

One system of data analysis, Bayesian modelling, was investigated as part of the Siyaphumelela project. Bayes' theorem is used to calculate conditional probability, i.e. the probability of an event 'B' occurring given the related event 'A' has already occurred: If A, then B.

The School of Engineering in EBIT and the Faculty of Natural and Agricultural Sciences commissioned a research project on student throughput to describe critical pathways to success. Mr Gabriel de Wet, a master's student in statistics, carried out this project under the supervision of Dr Alta de Waal. He used structural machine learning in Bayesian networks to elicit dependency structures between modules in academic programmes. Discovering dependency structures leads to the identification of pivotal modules, i.e. those modules that impact most on other modules. Among the outcomes of this research project was the pivotal role of the mathematics modules in the engineering (BEng) academic programme.

The process of machine learning happens in a stepwise manner. Firstly, a conditional dependence structure is determined through a statistical technique called unsupervised learning. The conditional dependency structure of all modules in the BEng programme is displayed in Figure 2.

Secondly, high-impact modules are identified by considering those variables with the highest node force, which is a measure of the magnitude of incoming nodes. The strength of each node force is represented by the size of the nodes. The strong influence of WTW 168, WTW 161, WTW 258 and WTW 238 in the BEng programme is emphasised in Figure 3.

It is interesting to observe that first-year, first-semester modules cluster together. Similarly, second-year, second-semester modules cluster together, etc. This shows the ability of the algorithm to discover temporal structure automatically and correctly without any prior information. Figure 3 provides information on the importance and influence of pivotal modules.

The results of this study clearly indicated that performance in mathematics is the strongest determinant of throughput in the School of Engineering. The critical pathway for student success follows the sequence, WTW 158 (S1), WTW 168 (S2), WTW 256 (S1) and WTW 263 (S2). These are the modules where interventions might have the biggest impact. This information can be used for decision-making on institutional level for the allocation of scarce resources.

Reference

De Wet, G. 2018. *Bayesian networks for knowledge discovery in academic programmes*. MCom (Statistics) dissertation, University of Pretoria, 2019. Supervisor: Dr A de Waal.

At the Intersection of Data-driven Decision-making and the Hybrid Approach

The value of data in higher education to support data-driven decision-making is associated with the integration of student information (SIS), learning management (LMS) and the learning analytics (LA) systems in higher education. Learning analytics is the application of big data practices within an academic context

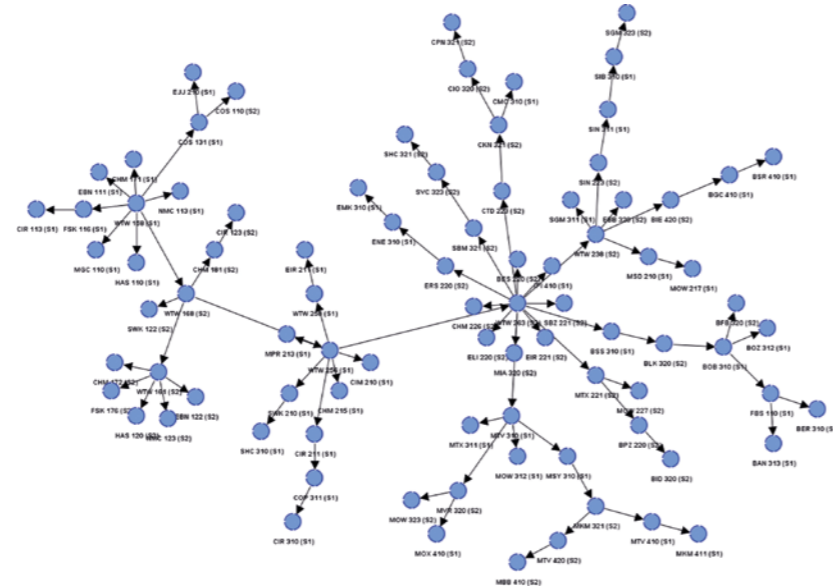


Figure 2: Final learned structure for BEng

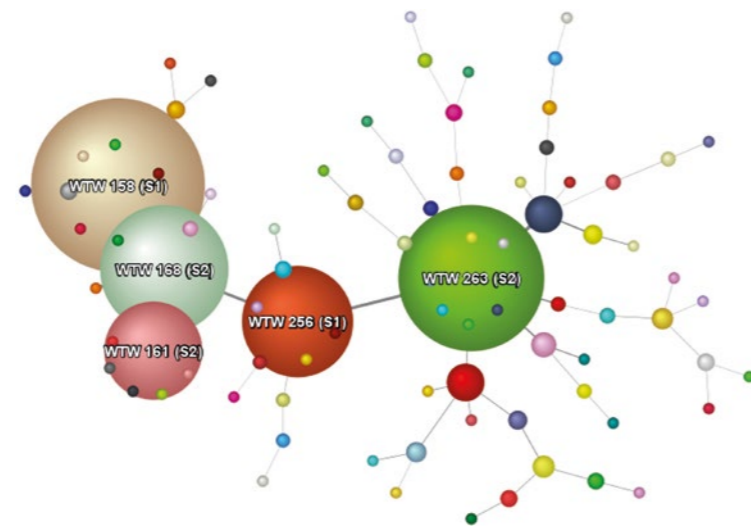


Figure 3: Five most influential modules in the BEng programme

whereby students' electronic actions that are captured in an LMS create opportunities to use transactional data to the benefit of students and institutions in achieving strategic teaching and learning objectives. Decisions made in higher education based on experience, intuition or previous solutions might be part of human nature, but they can be erroneous and an unnecessary risk in a data-rich environment. Data-based decision-making provides new alternatives and contributes to student success strategies.

Numerous studies indicate that the use of activity data available in the LMS provides opportunities to measure student engagement as a proxy for success. Data variables such as student activity, formative grades and student engagement with content are used as derived variables to measure the impact of the use of clickUP. The level of clickUP adoption in undergraduate courses (see figure 2 earlier under hybrid) and access to Blackboard Analytics allow the University to use the data to inform course design, staff development and student engagement with clickUP. Lecturers can access course dashboards and provide students with the ability to monitor their progress in comparison with their peers. Blackboard Analytics for Learn Datawarehouse gives faculty management access to LMS data across departments. Institutional data provides an overview of different measurement data sources.

During 2018, progress was made with the development of new dashboards and reports about the use of the LMS, and new reports were developed for faculties for reporting and planning purposes. Development work continued with the integration of the clickUP grade centre with the PeopleSoft Campus grade centre. Successful pilots were completed in July and November. The value of formative assessments and the use of the grade centre are illustrated in Figure 4.

Courses that include formative assessment and use the grade centre to share grades with students show significantly higher activity in comparison to courses that do not use the grade centre.

Given the value of big data and machine learning in supporting student success and empowering lecturers to intervene on time, the University embarked on a small-scale pilot of Blackboard Predict in 2018. The predictive analytics system uses historical and current LMS activity and student biographical data to attempt to answer the question of the probability that the student will get a percentage of 51% or higher in a course. Six modules participated in the small-scale pilot in the second semester of 2018.

The pilot aimed to ensure that the technical integration of the Predict system in clickUP and the daily extraction of data from PeopleSoft provided actionable, real-time data to lecturers and faculty student advisors. The pilot was preceded by a strategic review and planning consultation by Blackboard consultants. The consultation aimed to assess institutional, operational readiness for implementing Blackboard Predict and to create an operational plan for its long-term implementation. The outcomes of the operational Predict readiness consultation show a clear vision of the requirements and pockets of excellence around student success and attainment, that the required capabilities and capacities do exist within the institution to implement it, and that the technical infrastructure is adequate. However, further coordination for a medium-term, institution-wide deployment is required before the desired outcomes at the institutional scale will be visible. An extended pilot project will resume in the first semester of 2019.

Positive feedback was received from lecturers and faculty student advisors (FSAs). The FSAs indicated that the dashboards allowed them to monitor students in their faculty based on numerous specific criteria, including the breakdown of semester marks and the timeline of the marks. Additional biographical information allowed the FSAs to filter students based on, for example, risk levels, high school GPA, degree programmes, majors and academic level and status. Pilot lecturers provided additional support to students with high levels of risk. In one of the pilot modules, a small group of students received additional tutorials, and all of them passed their final examinations.

Detailed data reports were provided to the Deputy Dean: Teaching and Learning of the Faculty of Engineering, Built Environment and Information Technology and the lecturers involved. Analysis of the data from the week-eight prediction in correlation to the final semester mark of the students shows a strong to a very strong positive relationship between the prediction probability of students' successful completion of the course and their final semester marks.

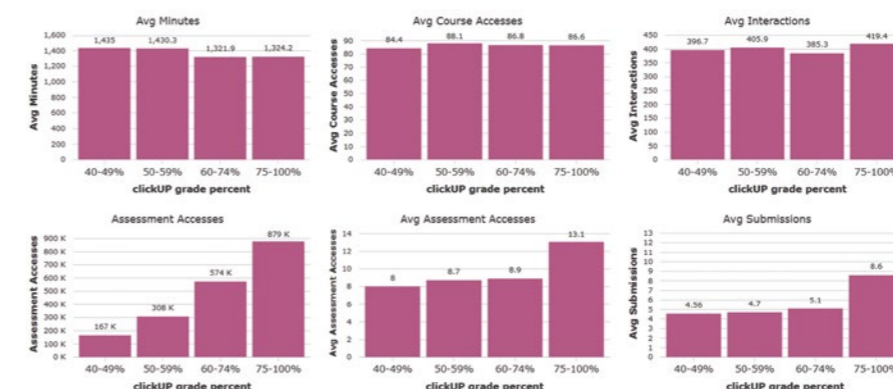


Figure 4: Undergraduate students' course activity in correlation to formative grades captured in clickUP

University Social Responsibility

Given its unique base of knowledge and skills, a university is in an ideal position to apply that expertise to solve 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. Volunteers often support ongoing activities in communities by these students or undertake activities of their own. However, the University also offers a wide range of other activities in terms of its social responsibility. The following chapter, co-authored by the Vice-Chancellor and Principal, the Director: Education Innovation and the Manager: Community Engagement, describes the full range of the University's activities: De la Rey, C, Kilfoil, W and Van Niekerk, G. (2018). 'Evaluating service leadership programs with multiple strategies', in *University social responsibility and quality of life, Quality of life in Asia 8*, edited by DTL Shek and RM Hollister. Singapore: Springer Nature. Chapter 10. DOI 10.1007/978-981-10-3877-8_10.

Curricular Community Engagement

The Community Engagement office in the Department for Education Innovation focuses predominantly on curricular community engagement for credit. Approximately 30% of the students (19 500) were involved in community engagement in 2018. Ninety percent of the students were undergraduates. A total of 189 modules was involved. Volunteers from approximately 120 registered student societies also contributed to the sustainability of the various community sites of learning. Other groups who volunteered came from the residences, faculty houses and the SRC. Some students ($\pm 1 000$) were placed because community engagement was one of their bursary conditions. In recent years, the Community Engagement office has

extended its services for placement for work-integrated learning, and students from participating modules were all placed satisfactorily.

The Community Engagement office maintained support for the Hatfield precinct anchor project where students earned their credits by participating in various activities. Students from six Hatfield faculties were involved, as well as some Health Sciences students. Partners in the initiative were local community members, the CID, some NGOs and the local police service at Brooklyn Police Station. Working close to campus has a high impact and is convenient for students.

The office also planned Casual Day fundraising and Mandela Day contributions on an institutional level. Casual Day raised R16 000, part of which was contributed to the Disability Unit on campus. The office also sourced useful redundant assets from the University to the value of R162 750 and distributed them to communities.

A new project related to the Ready for Work programme is being led by Careers Services. Students learn valuable skills during community engagement. A project was initiated to identify those skills and link them to the Community Engagement Management System (CEMS) so that the achievements can be drawn through and acknowledged on the student transcript. The same would apply to work-integrated learning. The skills will be aligned with the learning outcomes of the modules.

Current knowledge of the field was enhanced through interaction with national and international partners. The concept of university social responsibility is growing worldwide. The expertise of the Manager: Community Engagement in good practice escalated into various international visits that included training in Italy and Germany, with particular emphasis in those countries on addressing the humanitarian crisis caused by illegal immigration and the setting up of migrant camps. A delegation from the University of Bologna travelled to Pretoria

for training from 6 to 9 November. Through the Erasmus Foundation, Ms Van Niekerk visited Konstanz in December 2018 to conduct a workshop on university social responsibility, management of large-scale community engagement and how to institutionalise both.

Every year, the University calculates its B-BEE score. The process showed that community engagement activities contributed R30 000 000 in 2017/18, and thus contributed to the eventual rating of 6.

University Social Responsibility Network

The University of Pretoria is one of the steering committee members of the international University Social Responsibility Network (<http://www.usrnetwork.org/>) and currently the only member in Africa.

During the July recess, a final-year town and regional planner, Ms Mellon Ncube, attended the Global Youth Leaders' Summit in Hong Kong and Beijing. She also received the Global Youth Leaders Seed Project Fund 2018 for her campus society project, Mpepu Rural Youth Encouragement. Through the University Social Responsibility Network, five students from the University of Sichuan and one student from The Hong Kong Polytechnic University joined the students enrolled for the Community-based Project module of the Faculty of Engineering, Built Environment and Information Technology to work with them on their community projects. The projects were completed at two different animal shelters, a local zoo and a school in Soshanguve, a township next to Pretoria.

The University Social Responsibility Day involving an exhibition of community outreach projects was held at one of the main halls on campus. Awareness of the day was created through a photo competition reflecting the social responsibility of the campus.

Mr Romario Roman, a final-year law student, and Professor Antoinette

Lombard, Head of the Department of Social Work and Criminology, attended the USRN meeting from 2 to 4 December 2018. Mr Romario was elected as secretary for the student-only steering committee, which will be responsible for promoting social responsibility projects and research with students at USRN-linked campuses.

Wayne State University

Since 2016, with the visit of Dr Ahmad Ezzeddine (Associate Vice-President: Educational Outreach and International Programmes), UP has been interacting with Wayne State University. In October 2018, a further delegation visited UP with a focus on the precinct project, community engagement and a virtual study-abroad programme. The WSU delegation comprised Professor Keith Whitfield (Provost) and Dr Monica Brockmeyer (Senior Associate Provost).

The broad aims of the various meetings held during the visit were to:

- exchange ideas on UP's and WSU's student success initiatives,
- exchange ideas on WSU's and UP's student engagement initiatives,
- discuss the possible establishment of a virtual study-abroad programme involving WSU and UP students, and
- discuss the possibility of establishing a formal partnership between WSU and UP in respect of our teaching and learning endeavours.

WSU is interested in UP's community engagement programmes, and they believe that they can learn from UP's experiences in this field. UP, on the other hand, can learn from WSU's student success model. WSU's student profile is very similar to UP's, and they have achieved significant successes with their student success model. They also have an impressive student entrepreneurship programme.

Discussion of the virtual study-abroad programme was put on hold as Dr Ezzeddine had to pull out of the delegation.



Faculty of Economic and Management Sciences

Preparing Work-Ready Internal Audit Honours Graduates – An Integrated Audit Approach

In 2014, internal audit practitioners decided that internal audit graduates need to be more skilled in financial and management accounting, but from an internal auditing perspective. These practitioners are members of the Advisory Board of the Department of Auditing for the Internal Auditing Educational Partnership (IAEP) programme – one of only seven Centres of Excellence in the world. Workshops were held with internal audit practitioners in collaboration with UP's Department for Education Innovation to inform the curriculum of a module that integrates internal auditing with financial and management accounting as well as financial management. Traditionally, accounting and management accounting modules at postgraduate level are presented by lecturers from the departments of Accounting and Financial Management respectively, representing a siloed approach. However, these curricula are geared towards an in-depth understanding of, among other things, international financial reporting standards (IFRS) in financial accounting and technical financial management concepts.

Professor Kato Plant, in developing a module following an integrated audit approach, integrated accounting, strategic management, management accounting, Excel skills and other topics into the internal audit process, which had not been done previously. It is increasingly clear that both internal and external auditors should follow an integrated audit approach when assessing the adequacy and effectiveness of various business processes. This integrated approach enhances the value added by auditors and could ultimately enhance audit quality.

Registration
7 873

Success rate
81,4%

Graduation
2 574



Professor Kato Plant

In 2017, after reflecting on the benefits of the integrated teaching approach spearheaded by Professor Plant, a decision was taken to expand the integration to all four of the other postgraduate modules during a period of two years. This strategy contributed to an integrated teaching, learning and assessment approach that prepared more work-ready graduates who were able to think in an integrated manner and perform integrated internal audit engagements. Feedback from students is very positive, and they confirm that this approach prepares them for the world of work much more effectively.

Currently, the Department of Auditing is in the process of changing the name of the initial integrated module to 'Integrated Audit Approach' and will now present this module as a capstone module of the programme (See Figure 5). This entails the integration of technical and non-technical knowledge and skills acquired in both undergraduate and postgraduate modules. Simulations based on real-life audit projects are used to facilitate problem-based learning, and a 'learning by doing' teaching and learning philosophy is applied. Contact sessions take the form of simulated audit meetings, and students are encouraged to engage actively with their stakeholders (represented by co-students, lecturers, tutors and practitioners) as part of their learning experience.

AACSB International Accreditation and Assurance of Learning in EMS

The Faculty of Economic and Management Sciences has embarked on the process of obtaining accreditation from the Association to Advance Collegiate Schools of Business (AACSB) International. The overall goal of AACSB International is to promote a culture of high quality and continuous improvement in business education. The accreditation application requires compliance with 15 standards and covers the full spectrum of BCom undergraduate and postgraduate programmes. The 15 standards cover four broad categories, namely strategic management and innovation; students, faculty and professional staff; learning and teaching; and academic and professional engagement. EMS is currently in the process of developing an initial self-evaluation report (iSER) as a second step in the four-step application for AACSB International accreditation after obtaining eligibility status in April 2018. The plan is to submit the iSER late in the first semester of 2019, and it is anticipated that once AACSB accreditation is in place, it will also enhance the international visibility of EMS.

The purpose of assurance of learning (AoL) is to facilitate and monitor continuous improvement at programme level, and it forms an integral part of the learning and teaching standards pertaining to this category of the AACSB accreditation process. To equip staff with the necessary knowledge about the AoL process, a representative group of academics and key staff from the Dean's Office attended an in-house AoL seminar delivered by AACSB International and facilitated by Professor Chris Wert, Dean for Accreditation and Quality, Pôle Universitaire Léonard de Vinci, France from 11 to 12 June 2018.

During this workshop, an AoL Committee was formed with at least one academic representing each department. The AoL Committee is chaired by the Deputy Dean: Teaching and Learning, Professor Johan Oberholster, and is actively supported by Professor André Jordaan from the Department of Economics and the EMS Education Innovation consultant, Ms Elmien von Ameron.

Within the context of the AoL and the EMS mission statement, four common learning goals (mastery of fundamental knowledge, critical thinking, communication skills, and ethics and sustainability) were identified and will in future be evident in all programmes. The AoL Committee is currently in the process of developing rubrics to illustrate the identified goals, objectives and traits per programme and to refine and standardise existing systems to assess whether these learning goals have been met.

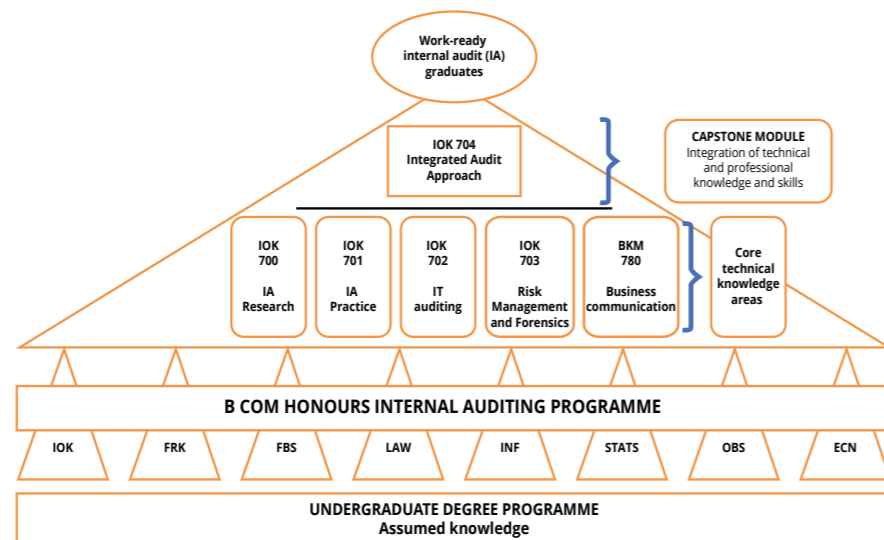


Figure 5: Integrated audit approach - #AuditEngage

It is important to note that AACSB International also puts a high premium on matters such as student support, student success and throughput rates, transformation, work readiness and employability of graduates. The AACSB International standards and processes are thus very much aligned with the strategies of UP and EMS and will clearly support and strengthen our teaching and learning goals and initiatives.

Although AACSB International accreditation is an overarching accreditation for the EMS Faculty as a whole, EMS will continue to maintain its other national and international accreditations for specific programmes (SAICA, CIMA, CFA, HPCSA, SIOPSA, SABPP, IIA and the European Logistics Association).

Advancing Community Engagement in Public Administration and Management

Third-year students registered for the degree BAdmin (Public Administration) enrol for the Public Practices (PBP 320) module. This is a curricular community engagement module in which students assist a selected non-profit organisation with an identified need. The aim of the module is for students to transfer the skills and knowledge that they have acquired during their three years of study in public administration and management to the community.



Dr Mapula Nkwana and course students

In 2018, in this module lectured by Dr Mapula Nkwana, 21 groups of between five and six students each were formed. Students had the option of either selecting a community site from the UP Community Engagement site list or choosing their own community partners. As determined by the rules governing the selection of UP community sites, a member of the UP Community Engagement Office accompanied the students on the first site visit to introduce them to the community partners. Challenges identified at the community sites included a lack of funding for running community centres, inadequate record-keeping procedures and challenges in complying with health and safety regulations related to running childcare centres. The PBP 320 students conducted workshops for the community partners in order to transfer knowledge and skills with regard to writing applications for funding, drafting an ethical code of conduct for non-governmental organisations and legislation relating to occupational health and safety. The foster grant application process of the Department of Social Development and compliance requirements from the National Youth Development Agency were also explained to the community partners to ensure that they understood how to run their organisations efficiently.

As part of preparing the students for the world of work, they reflected on how they would apply what they had learnt through this module in the workplace. Students indicated that they had enhanced their interpersonal skills, had gained experience of how to work in teams, were able to communicate better with diverse groups of people and were able to conceptualise and manage projects successfully. Some of the reflections from the students are:

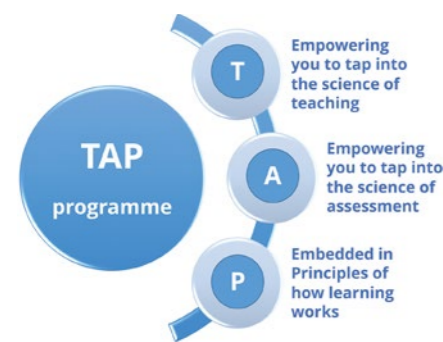
- 'In enhancing service delivery I've learnt that time management is crucial in any project and that one needs to respect timelines.'

- 'I am grateful for the opportunity and exposure, and it changed the way that I used to think about community care centres. I believe that I will not stop this journey of imparting knowledge to those who need it as the University of Pretoria imparted the knowledge that I have now.'
- 'The project gave me an opportunity to make a difference in someone's life and I will ensure that I carry that legacy of always helping where I can at different community care centres.'

In summary, the biggest benefit to University of Pretoria graduates from this module appears to be that they developed social awareness and were provided with a platform to find solutions to societal issues. This is in line with the University's vision of community engagement as a vital part of its social responsibility and its curriculum transformation.

EMS Lecturers TAPPING their Way to Smarter Teaching

At the University of Pretoria, and especially in the EMS Faculty, lecturers are considered the most valuable contributors to enhancing successful student learning through excellence in teaching and learning. To assist lecturers with their professional development journey as change agents of teaching, learning and assessment, Professor Johan Oberholster (Deputy Dean: Teaching and Learning) and Ms Elmien van Amerom (Education Consultant) conceptualised and implemented a continuous professional development (CPD) programme, known as the Teaching and Assessment Principles (TAP) empowerment programme in 2018. The programme aims to empower lecturers with teaching and assessment related knowledge and skills through training embedded in the science of teaching and assessment driven by the principles of how learning works.



The purpose of the TAP programme is to:

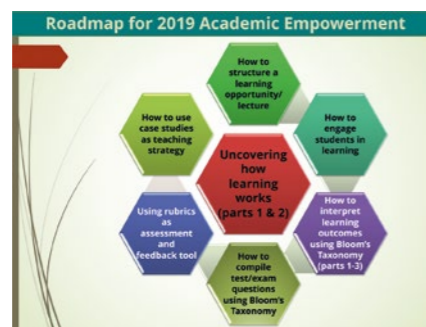
- provide CPD opportunities to novice and experienced lecturers in EMS;

- empower lecturers with knowledge on how learning works so that they can help their students learn; and
- empower lecturers with 'how to' knowledge on teaching and credible assessment.

The TAP programme covers seven key themes, presented bi-weekly during ten two-hour workshops during both semesters. In both semester, newly appointed lecturers are trained, but in semester two, seasoned lecturers are also given the opportunity to join sessions of their choice for CPD purposes. Presenters include Ms Van Amerom and other education consultants from the Department for Education Innovation, as well as exceptional lecturers from the Faculty of Economic and Management Sciences.

The seven key themes were as follows:

- 'Uncovering how learning works' hinges on two award-winning books: Ambrose, SA, Bridges, MW, DiPietro, M, Lovett, MC and Norman, MK. (2010). *How learning works: 7 research based principles for smart teaching*. Jossey-Bass. ISBN-13: 978-0470484104 / ISBN-10: 0470484101. and Dweck, CS. (2007). *Mindset. The new psychology of success. How we can learn to fulfil our potential*. Ballantine. ISBN-10: 9780345472328 / ISBN-13: 978-0345472328.



- 'Empowering you for lecture one' guides lecturers on how to structure a learning opportunity (ie lecture) and, among many other resources, provides tips on how to use a document camera creatively.

- 'How to engage students in learning' covers topics such as how to design engagement activities and provides the opportunity to practise the use of some digital engagement tools.
- 'How to interpret learning outcomes using Bloom's Revised Taxonomy' guides lecturers on how to interpret the knowledge and cognitive process dimensions of Bloom, write learning outcomes using Bloom's Revised Taxonomy and how learning outcomes direct teaching and assessment practices.
- 'How to compile test / examination questions using Bloom's Revised Taxonomy' enables lecturers to make use of a template with which they analyse and plot their test / examination questions on Bloom's Taxonomy.
- 'Using rubrics as assessment / feedback tool' guides lecturers on how to design a rubric with specific reference to the identification of assessment criteria and criterion descriptors and how to create rubrics with Turnitin / clickUP.
- 'How to use case studies as a teaching strategy' is a highly interactive session during which lecturers are exposed to different types of case studies, how to select a case study to use in class and tips when using case studies as a teaching strategy.

In conclusion, the success of the TAP programme is evaluated by the education consultant visiting lecturers' classes (with their prior consent) to assess how the teaching / learning / assessment principles taught during the workshops are implemented as part of lecturers' instructional classroom practice. Individual feedback provided is used as a development and improvement tool. Presented below is some feedback from recent participants:

- 'The overall package was good. I certainly took several ideas with me from the morning to use in future.'



CPD students and Professor Johan Oberholster

- 'Understanding learning is complex, but critical for the planning of any subject.'
- 'Learning about the techniques that can be used to engage students best in class, positioned me to support my students better.'
- 'I gained a better understanding of Bloom's Taxonomy, how to enhance student learning and how to better structure classes.'
- 'The theory of designing rubrics was unpacked by both presenters and I realised that rubrics are crucial in helping lecturers to drive students to the intended destination where they want them to be.'
- 'I enjoyed the way the theory was explained to us and to then be able to apply what we learnt through facilitation.'

EMS Celebrates Teaching and Learning Excellence

At the EMS Annual Awards Function held on 6 June 2018, four teaching and learning awards were presented to lecturers for exceptional and innovative initiatives and dedication to our students.

The purpose of these awards is 'To recognise a consistent record of outstanding teaching and learning related activities for lecturers who clearly demonstrate that they make a significant contribution to enhancing the students' learning experience'. This is in accordance with the UP 2025 Plan, which states that 'effective teaching and learning ... are key to fulfilling the primary function of the University, namely to produce knowledgeable and skilled graduates, in

line with the high-level needs of the South African economy and society, and to replenish our human capital needs'. The following staff members were rewarded for teaching excellence and associated innovations:

Professor Kato Plant: An integrated teaching, learning and assessment approach to internal auditing

The Department of Auditing adapted its postgraduate internal auditing honours programme to include a year module, namely Internal Financial Control (IOK 704), which follows an integrated business process approach, rather than a siloed audit approach. The module integrates financial accounting, management accounting and financial management principles into the internal audit process. Professor Plant introduced this unique approach, which was the first step towards an integrated audit programme.

Professor Stephen Coetzee: The use of messaging apps as a learning tool

The use of messaging apps as a learning tool may enhance student learning, engagement, motivation and interest. It also presents possibilities for collaborative learning and quicker responses to FAQs in a large-class environment. The aim of this intervention, used in FRK 201, was for students to actively learn, independently construct their own knowledge through interaction with each other and the bots, reflect and think more critically and read more attentively, while growing as independent thinkers and lifelong learners.

Ms Astrid Schmulian: The Immediate Feedback Assessment Technique

The Immediate Feedback Assessment Technique (IF-AT) entails the use of a student-centred multiple-choice answer card, similar to a lottery scratch card, in group assessments. Students scratch off the coating on their preferred response after team consultation, and immediate feedback is then provided to them. This method proved to be most successful and was used for two team assessments in FRK 201. It supports the development of the highly essential group work skill in the CA programme.

Professor Natasja Holtzhauzen: PBP 320 as a fully-fledged service learning module

Public Practices (PBP 320) is a unique community engagement module that provides third-year students with a platform to share what they have learnt during their three years of study with various members of the community. Through this module and the associated video feedback, students have learnt that community engagement is about individuals looking beyond themselves and empowering others to make their lives better.



Winners of the Teaching and Learning Excellence Awards 2018 with Professor Johan Oberholster (back row left), Deputy Dean: Teaching and Learning, and Professor Kato Plant (back row right), and in front from left to right, Ms Astrid Schmulian, Professor Natasha Holzhausen and Professor Steven Coetzee

Faculty of Education



Registration
8 409

Success rate
92,1%

Graduation
2 124

I Shut My Eyes in Order to See

On 24 October 2018, the annual art exhibition titled 'I shut my eyes in order to see', initiated by Dr Raita Steyn, was hosted by the Department of Humanities Education art students of the Faculty of Education. The exhibition featured artworks by FET, senior, intermediate and foundation phase art students as well as artworks by learners from Prinshof School for the Partially Sighted and Blind.

Dr Steyn challenged the notion 'vision' in visual arts which, by definition, has excluded the visually impaired from any visual art form, as unable to 'appreciate by sight'. This exclusiveness has also put the foundations on which art aesthetics and art ethics were built, successfully developed and conventionally established. It is on and around these factors that globally ethical principles, aesthetic criteria, research projects, educational systems and pedagogical curricula have been established and have diachronically maintained an unchanged, unchallenged and static existence. At the same time, this very 'vision' exclusiveness set crucial limitations on 'creative thinking' and artistic inspiration, both essential factors in today's products of art. Aiming at inclusiveness in 'visual' arts and the broadening of the students' artistic conceptualisation, the theme for the exhibition has served as a tool to promote the importance of arts education as a platform of interaction, for both visually abled and visually impaired.

If visual art is defined as an exclusively pictorial discipline, then both creativity and imagination would be considered as visual functions of the brain too. However, this cannot be a valid association since imagination goes hand in hand with the inner self and beyond sight – exploring knowledge from within.

Setting the Scene

Art education students were required to challenge the notion of aesthetic appreciation by creating artworks that

could be experienced through human senses. To create a successful exhibition, and to express the concept of it through their artworks, students had to be properly exposed to the theme 'I shut my eyes in order to see'.

The Prinshof School offered the art education students the opportunity to experience the challenges with which people with visual impairments are faced daily. Upon arrival at the school, not only were the students exposed to the different types of visual impairments, but they also became aware of issues of these people's daily dependency, whether in reading, writing, walking, eating, or simply using the bathroom. Of specific importance was the fact that these children and young adults, living with visual impairments, did not show any feeling of discontent at how they created meaning in their lives. Too often, society focuses on the visual 'beauty' of life and of visual arts without questioning the biased value systems or how society's sense of meaning and value excludes those without vision.

The Opening

Dr Maximus Sefotho, from the Department of Educational Psychology, who introduced the new Advanced Diploma in Visual Impairment to be

offered in the Faculty of Education by the Centre for Visual Impairment Studies, officially opened the special event. The Advanced Diploma course is aimed at training teachers across spheres of studies to teach learners who are visually impaired. Another special guest speaker at the event was Ms Laurette Eysell, the Creative Arts teacher at Prinshof School for Visually Impaired Learners, who shared her experiences and challenges as a teacher for the visually challenged.

The proposed core modules for the Advanced Diploma entail the following:

- Understanding inclusive education and disabilities as diversity
- Understanding and teaching learners with visual impairment
- Supporting learners who are visually impaired
- Research and practice in visual impairment
- Orientation and mobility
- Assistive technology for learners with visual impairment
- Facilitating partnerships and stakeholder involvement
- School leadership and classroom management



Dr Raita Steyn with art students of the Faculty of Education



A phase of the process whereby students experienced awareness at Prinshof School



Creative arts teacher, Ms Laurette Eysell and a learner from Prinshof School for the Partially Sighted and Blind, sharing their experiences at the exhibition



Dr Maximus Sefotho introducing the Advanced Diploma in Visual Impairment



Mr Abel Mkhwanazi from 2 of a Kind Plus sharing his talent with the audience

The morning prior to the exhibition, Mr Jody Joubert, from the LLITUP Collaboratorium videotaped the art education students who were setting up the artworks for the opening of the exhibition. During the evening of the exhibition, attendees were able to see the time-lapsed video of how the exhibition, which allowed for other types of sensory feelings, was put together. Attendees viewed the exhibition in virtual reality: the real surroundings time-lapsed video was blended with what the viewers saw with their digital content (generated by computer software). This involvement took the theme of the art exhibition a step further, i.e. people experienced the exhibition by 'looking around' an artificial world, reminiscent of how one uses virtual reality to escape dejection in the real world. Additional to this experience, Mr Abel Mkhwanazi and his blind music band, 2 of a Kind Plus, entertained the audience with their magical performance of jazz music.



Mr Jody Joubert helping attendees exploring virtual reality

The Artworks

Artworks made by the students also dealt with themes of blindness by creating awareness towards the blind and visually impaired. Apart from raising awareness of the visually impaired, the aim was also:

- to enhance their world view through consciousness of the 'other' in terms of empathy, objectivity and sensibility, all essential factors for the successful completion of any art project and process; and



Artworks by learners from Prinshof School for the Partially Sighted and Blind

- to challenge conventional thinking in education among art students and society.

This different line of thinking aims to enhance the creative possibilities of 'visual' arts in education through direct exposure to accurate information of the subject matter, acknowledgement, realisation, assimilation, artistic expression and communication. People living with blindness and/or visual impairments are subject to discrimination and are judged as 'disabled'. However, they are not disabled. It is the value system of the sighted that disables them by excluding them from participating in the arts, as well as various other fields and disciplines in life. Visual art is a matter of creativity, of imagination. Art is a state of mind, it is seeing without one's eyes, but looking within one's cognitive systems, using one's feelings and mind to craft the impossible. In the same way, 'beauty' should not be defined by what we see, but by what we feel. Thus, art as a

visual discipline needs to be challenged and debunked, as it 'disables' by limiting the able. Art for the visually impaired is about insight rather than sight; why is it not it for those with vision too? Has society no insight, no 'vision'?

In continuation of the enterprise and the success of the exhibition, Dr Steyn and Dr Sefotho have been invited to present a paper, 'Challenging vision in visual arts', at a conference, entitled 'Creating spaces: Inclusivity, ethics and

participation in art and design education', held at Goldsmiths, University of London (hosted in partnership with The Glasgow School of Art), on 23 February 2019.

Preparing Teachers for the Fourth Industrial Revolution

"No man can reveal to you aught but that which already lies half asleep in the dawning of your knowledge. The teacher who walks in the shadow of the temple, among his followers, gives not of his wisdom but rather of his faith and his lovingness. If he is indeed wise he does not bid you enter the house of wisdom, but rather leads you to the threshold of your own mind." (Kahlil Gibran)

Dr Thiru Vandeyar has been in the education profession for over 38 years. His journey through the education field from 1981 to 2019 has offered him a magnificent panorama of the transitions, trials and tribulations of the South African education system. This also describes



Augmented reality: A constructivist approach to teaching and learning

his enriched experience through difficult times: a race-differentiated syllabus, student riots, teacher strikes, curriculum changes, educational reforms, language conflict issues, educational transitions and paradigm shifts. His teaching experience covers all levels within the school hierarchy structure (teacher, head of department – Mathematics, deputy principal, principal, lecturer) and spans all the levels of the education system (primary and secondary school, college and higher education). These experiences have significantly influenced his pedagogy in teaching with technology, as well as his philosophy and identity as a teacher in socio-culturally diverse contexts.

Dr Vandeyar argues that changing existing pedagogy is the principal construct in teaching and learning with technology. Thus, his teaching practice focuses on innovative approaches to teaching with technology. The main focus of his practice has been on exposing pre-service teachers to the use of technology as an enabler to enhancing their pedagogical practice. To this end, his teaching practice attempts to promote pre-service teachers as ICT agents of change. Numerous innovative practices define his teaching:

- Open-source software and mobile applications are used that promote good teaching practices even in resource-constrained schools.
- Interactive concept maps and augmented reality are used as cognitive and instructional tools for both teaching and learning.
- Cloud-based learning management systems, mobile technology for assessment and classroom management tools are used to enhance the blended learning pedagogical practice.
- A flipped classroom approach that incorporates short lecture videos, learning resources and mobile assessments simultaneously facilitates his blended teaching practices and pre-service teachers' pedagogical affordances.
- Google collaborative tools are used for faculty administrative purposes and to create cloud-based interactive lessons that are embedded with multimedia, web links and assessments.
- Swivl™ technology allows him to video record his lectures in an attempt to be a reflective practitioner. This essential experience also translates to promoting students' use of smart phones and educational blogs to reflect on their teaching practices.

The daily onslaught and social pervasiveness of information and communication technology (ICT) in our lives is not easy to avoid. The use of technology has influenced how we work, communicate, trade, manage finances and keep abreast of the ever-growing complexity of maintaining social networks.

Yet, however rapid the effective exploitation of technology is in the different fields of human activity, effective uptake of ICT in education still needs to occur. As teachers, we always seem to lag behind technology frontrunners, even though ICT offers significant affordances to change radically both teaching and learning. Given that ICT will eventually make its way into all classrooms, teachers must become moral and proactive change agents in order to engage in 'continuous renewal, and change expectations' that are ubiquitously presented by technology (Fullan, 1993: 3). As a higher education institution of teacher training, we have to ask, has teacher training influenced our ICT classroom practices? If so, how does the use of ICT influence teachers' practices? What are teachers doing differently with their technology in classrooms? Do their practices reflect evolving pedagogies?

In an attempt to answer the above questions, Dr Vandeyar's research found that most teachers believed that their use of ICT had changed their pedagogy; however, it merely creatively changed the way they delivered the curriculum. Thus, students are still passive onlookers. It would seem that what teachers say they are doing in their classrooms (espoused theory) is not in harmony with what actually transpires in their classrooms (theory-in-use) (Argyris & Schon, 1974). In light of the above, it is evident that teachers' existing beliefs about their changed teaching practice is being (mis) construed as changed pedagogical practice.

The challenge encountered by higher education institutions tasked with teacher training is to dispel pre-service teachers' (mis)perceptions that teaching is a simple task of transmission of subject content. Borg's (2004: 274) 'apprenticeship of observation' explains that pre-service teachers enter teacher training institutions with a baggage of prior knowledge entrenched by at least twelve years of observing how their teachers taught. This emphasises student teachers'



Yesterday's classroom

Today's classroom

narrow view of what transpires at the chalkface of teaching. Student teachers seem to be unaware of the 'behind-the-scenes' planning and preparation that are undertaken by teachers. Thus, pre-service teachers who have been exposed to traditional teaching methods or 'bad' teaching may perpetuate the same teaching practice as teachers.

The 'apprenticeship of observation' phenomenon is exacerbated when student teachers enter the portals of higher education institutions. Seemingly, academics at teacher training institutions entrench pre-service teachers' subjective notions and experiences about teaching through their own traditional practices. So we lecture to pre-service teachers about learning theories (constructivism, behaviourism, cognitivism, etc.) and other paradigms on teaching and learning without students experiencing good pedagogical practices. Fullan (1993: 7) cautions academics in education faculties tasked with teacher training not to 'advocate things for teachers or schools that they are incapable of practicing themselves'. However, changing academics' anachronistic practices seems only remotely possible because most academics at teacher training colleges or universities reached their tenured positions without ever experiencing teaching in schools.

Teacher educators need to become change agents and take 'some initiative themselves' (Fullan, 1993: 6). The speed and scope of technological transformation is exponential, with the potential for unlimited possibilities and endless opportunities for teaching and learning. The Fourth Industrial Revolution (4IR or Industry 4.0), brings forth new technologies based on artificial intelligence, 3D printing, robotics, the Internet of things (IOT) and machine learning. What are the implications for schools, educators and students? We have yet to become responsive to affordances of the Third Industrial Revolution: the introduction of existing technologies such as computers, the web, mobile technology, augmented reality, virtual reality and social media. Now, more than ever, there is the need for good teachers, who can harness the exponential advances in digital technologies to promote key 21st-century skills of creativity, critical thinking, collaboration and communication.

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Higher Certificate in Sport Science Education

In 2017, the Department of Humanities Education in the Faculty of Education offered the Higher Certificate in Sport Science Education for the first time, with 126 students representing a variety of sports codes, and this grew to 137 students in 2018. The programme is coordinated by Mr Leepile Mothlaolwa, who holds a master's degree in human movement science, assisted by Mr L J van Zyl, Tuks Athlete of the Century and multiple gold medallist at the Commonwealth Games, and partners at TuksSport.

To fully understand the new certificate in the faculty, the Department of Humanities Education, with the assistance of Professor Wendy Kilfoil, Director: Education Innovation, appointed an expert review panel to assess the academic curriculum and to comment on the structure and organisation of the programme. The review committee commented that the HCSSE programme has the potential to make a major contribution at the University of Pretoria as well as in South Africa. Since the review, the Department of Humanities Education has been revamping the curriculum to ensure that it meets the unique needs of the students who are high-level sportspeople competing at the highest levels.

The Faculty of Education is especially excited about the dual potential of the Higher Certificate: to produce high-level sportspeople, as well as future sports coaches and administrators who can, after completion of the Higher Certificate, qualify for a BEd degree in Human Movement Studies in the Faculty, thereby stimulating sports education at school level.

The Faculty of Education is very optimistic about the future of the Higher Certificate under the leadership of the Head of Department, Professor Johan Wassermann, and an excellent team of academics and sportspeople.

Instilling Digital Competencies in Education Students

The Living Lab for Innovative Teaching at the University of Pretoria (LLITUP) research unit resides within the Computer Integrated Education (CIE) focus in the Department of Science, Mathematics and Technology Education (SMTE). This unit investigates and promotes the use of educational technology to support innovative teaching practice.

The unit is responsible for teaching the CIE-focused modules for third-year BEd students (one of the Education modules and the Methodology of

e-Learning module); as well as for the two elective modules in the CIE BEdHons course: namely, Instructional Tools and e-Learning and Computers as Cognitive Tools, as well as a module on education technology in the Postgraduate Certificate in Higher Education (PGCHE). Through LLITUP, teaching and research are integrated in a collaborative, interdisciplinary environment where the 'play with new technology while figuring out' approach is formalised – not only for data collection and research purposes, but it feeds directly and constantly into the design and development of each module.



Ms Marica Foxcroft, Dr Marlize Malan-van Rooyen and Ms Karien Botha from the Department of Educational Psychology

The unit's teaching philosophy is based on active, applied, collaborative and constructionist learning. The sooner students can be deeply involved in their own learning and development, the sooner they take ownership of their own futures. Staff assists by managing and facilitating this process for students, and also inspires them to be such managers and facilitators. The teaching approach is supported by the following questions: How can students be actively involved in their studies? and How can we introduce them to the newest educational technology and inspire them to implement technology in such a way that

they instil good educational principles in their own teaching practice and in their learners?

When designing modules, academics think about how all the modules in the Computer Integrated Education (CIE) knowledge area align to each other, as well as to the goals of the Professional Development Framework for Digital Learning, as proposed by the Department of Basic Education. Dr Ronel Callaghan writes that, 'In our own practice we adhere to the relevant digital learning competencies in the Digital Framework expected from a teacher training perspective for our pre-service student



Head of Department, Professor Ina Joubert, with students at the Early Childhood Education exhibition during the Teaching and Learning Festival in 2018

on the Technology Integration Process (TIP) framework and includes backward design, the technology-pedagogy-content framework, online community of inquiry, social learning and interactive learning principles. The main strategies include interactive, co-operative, collaborative, problem-based, gamified, active, peer and just-in-time teaching.

Incorporating educational technology into teaching and learning creates the opportunity for an interactive and student-centred approach. It inevitably drives the educator's practice towards innovation and creativity.

Faculty of Education Teaching and Learning Festival

The Deputy-Dean: Teaching and Learning, Professor Salome Human-Vogel, championed the faculty's first formal Teaching and Learning Festival on 15 May 2018. The event took place over two days. The keynote speaker was Ms Marj Brown from Roedean School, who was a nominee in the Top Ten Teachers Global Teachers Awards in 2017.

The theme of the Festival was 'Quality teachers, quality education', and the programme consisted of a diversity of presentations from staff on teaching and learning, a student panel on curriculum transformation and a panel on teacher professionalism in which educators from partner schools participated. There were exhibitions of student work, tutor training



Professor Salome Human-Vogel (Deputy Dean), Ms Marj Brown (keynote speaker) and Professor Chika Sehoale (Dean) at the Teaching and Learning Festival

teachers. We aim to introduce students to different tools, strategies, resources and theories while allowing them to create open education artefacts that they can use and share in their own speciality fields'. Through our Enterprises University of Pretoria (Enterprises UP) courses, the unit aims to instil the same values, knowledge, skills and practice in other educators, such as lecturers, trainers and facilitators from industry. While each module is different, the unit aims to build an innovative practice or product into each module.

The unit bases the design of its modules

certificates were handed out after tutors completed their training, and there were book presentations of books in the Department of Humanities Education. A demonstration of a variety of indigenous games and sports by students in human movement gave evidence of curriculum transformation.

Supporting Second-Language Learning through Online Collaboration

In the South African context, learning a second language is fraught with difficulty. Learners in South African public schools are often promoted to higher grades with poor communicative competence in the target language, whereas the curriculum envisages high levels of proficiency in the first additional language. What the learners acquire is, unfortunately, nothing close to the expected degree of language competence.

In addition, the White Paper on e-Education (DoE 2004) states that all South African learners in the GET and FET bands should be able to use ICT confidently and creatively to help them develop the knowledge and skills they need to achieve their personal goals and to become full participants in the global information society. Thus, teachers are not only mandated by policy to nurture e-learning competences in their learners, but they also have to develop these competences in themselves. This is the only way to stay relevant in the technological age, which has allowed more people access to information than ever before. Increased access to information means that the teacher's role needs to change from merely supplying information to helping learners find information for themselves, and helping them to evaluate that information critically. The appeal to offer e-learning components in the classroom is a methodological reaction to the many learning needs that have been identified in research, of which passivity is one. The aim would be to engage learners in constructivist learning through social and

intellectual interactions in an attempt to break the cycle of traditional passive learning.

Moreover, research shows that pre-service teachers learn better and perform better when they work in collaboration with others. The motivation, thus, was to develop a project so that the three underlying aspects, namely promoting communicative competence and oral proficiency, integrating e-learning into instructional design, and working collaboratively through social platforms, could be addressed.

In 2018, with funding for a scholarship of teaching and learning (SoTL) project, a team of five academics in language education and technology in the Faculty of Education began their work. The team comprised Dr Lizette de Jager (team leader) (English), Dr Alta Vos (Afrikaans), Dr Connie Makgabo (Sepedi, isiZulu), and Dr Ronel Callaghan and Mr Jody Joubert (Technology). Against the social constructivist paradigm, and from a multi-literacies perspective, the project is situated within the community of inquiry framework and uses participatory research and action as a methodology, with its main aim to enhance communicative competence. The research team participated in three training workshops to plan the process of the project and conceptualise the outputs and dissemination possibilities. Early in 2019, pre-service teachers in the PGCE programme, who have chosen one of the above-mentioned languages as their methodology, will be invited to participate. Participating pre-service teachers will work together in communities of practice (CoPs) to collaborate online to source and evaluate Android and Apple apps or Microsoft Tools for use in interactive lessons. These lessons should promote proficiency and communicative competence in their language and communication. The research team will act as monitors and facilitators.

The project will be completed in several phases during 2019.



Mr Jody Joubert and Dr Ronel Callaghan from the LLITUP Collaboratorium

The Journey of Establishing Scholarly Communities of Practice for Self-Empowerment

Initially, before our professional self-empowerment journey commenced, Ms Tanya Smit conducted a baseline study with 280 final-year education students at UP in 2017, assisted by Dr Eberlein at the Teaching Practice office. The data indicated that mentor teachers have the most significant influence on the pre-service teachers' professional teacher identity development. Ms Smit then developed two pioneering short courses for the final-year students and their mentor teachers.

The official journey kicked off with the short course programme commencing with eight sessions and a group of 20 mentors and 20 pre-service teachers. The project team members were Ms T Smit (Professional Development Programme Executive), Professor PH du Toit (Project Manager), Dr R Callaghan and Dr E Eberlein. The two pioneering programmes 'Mentor professional development: Self-empowerment in a community of practice' and 'Pre-service teachers' self-regulated professionalism', which have SACE accreditation, were registered at Enterprises UP and ran from June to September 2018.

On this self-regulated professionalism expedition, the participants and researchers viewed themselves as agents of transformation using participatory action research as research design. The process of becoming reflective practitioners (an additional attribute of the 21st century) formed part of the epistemological grounding of the respective action research projects – executed by individuals or in the scholarly communities of practice as a collective in a constructivist fashion. Whole Brain® thinking formed the centre of the study; reference was made to a



Ms Tanya Smit and Professor Pieter du Toit

newly coined construct, namely Whole Brain® participatory action research, as presented by Professor Du Toit during a workshop. An array of research methods were used: brain profiling (Herrmann Brain Dominance Instrument® HBDI®), focus group interviews, observations, questionnaires and photo evidence. Concluding the journey of self-empowerment, the mentors, final-year education students and researchers submitted electronic portfolios of evidence as part of the blended mentoring process, developed by Dr Ronel Callaghan and Mr Jody Joubert.

At the end of this self-empowerment voyage, the group celebrated with a certificate function (12 October 2018) held on the Groenkloof Campus. The pre-service teachers and the mentors received certificates from Professor Human-Vogel, Deputy Dean of the Faculty. The certificates carry 30 teacher professional development points. One of the mentors will commence with her master's studies in this field in 2019, and six of the pre-service teachers indicated that they want to further their studies in the honours programme.

At the beginning of this journey, the team had desired outcomes but did not know exactly where the progressing would lead them. Sometimes there were patches of light, but also dark, intimidating shadows of the authentic situations that academics face in their diverse practices. Team members shared their research at the HELTASA conference on 21 November 2018 in Port Elizabeth, as Ms Tanya Smit presented a conference paper, 'Establishing scholarly communities of practice for the self-empowerment of mentor and pre-service teachers'. As researchers also share their findings in publications (SAJE or SAJHE), they acknowledge that the Whole Brain® participatory action research self-empowerment journey for the 'self' is never-ending.

Responsiveness to Social Context

Teaching games for educational purposes prepare learners to become productive members of society and acquire relevant attitudes, knowledge and skills. Adults within home and community settings are still instrumental in facilitating traditional cultural content. Yet, education has replaced several functions of the family, and it has become the school's responsibility to introduce all learners to the rich physical and game culture of South African ethnic groups.

Responsiveness to Social Context is a practical module in the Department of Humanities Education. It is taught by Ms Cheresse Jones, Ms Elmarie van Wyk and Ms Antoinette Botha. Attendance is compulsory. Like most modules in the University, for transformation purposes, it focuses on epistemological diversity, renewal of pedagogy and classroom practices, and an institutional culture of openness and critical reflection.

The module has three sections: Section A – Water activities (swimming strokes); Section B – Life saving; and Section C – Motor development and small area games. Two innovations in 2018 were:

- a learn-to-swim programme was introduced and a qualified instructor (tutor) appointed to help and support students (Sections A and B) with a more flexible, personalised approach; and
- indigenous games included as a study theme within Section C.

Sections A and B

The fatal drowning burden in South Africa is at approximately three per 100 000 people and is continuing to increase. Swimming and life-saving remain critical life skills.

It is impossible to learn to swim in

seven periods – it is a skill and therefore takes practice. Students thus have the opportunity to continue to swim with the tutor, and assessment takes place in the second semester. In many ways, the curriculum is personalised. Swimming and life-saving assessment are done according to each student's skill level.

Students are encouraged to help and support each other by identifying and correcting key technique points to develop knowledge and skills with regard to physical development and movement. Basic principles of water safety, watchfulness and the correct actions to be taken in case of an emergency in and around the swimming pool are introduced.

Student feedback shows that they appreciated the extra support offered and are making use of the opportunity to practise basic swimming skills. They also reflected that the assessment in the second semester made them feel less anxious and that they have appropriate time to learn to swim. Sections A and B caused some student to change their subjects totally. Despite the improvements, flexibility and additional student support, some students continue to experience difficulty.

Section C

Indigenous games are part of our heritage, and students are encouraged to understand diversity and appreciate the various indigenous games that South Africans play. Participation in indigenous games can foster a positive self-concept within each student's cultural heritage, as well as relationships among the various ethnic groups within a multicultural society. Students presented a topic each period in order to understand diversity and appreciate the various indigenous games that South Africans play. They showcased the indigenous games at the Teaching and Learning Festival (May 2018).

It is the opinion of the lecturer that this module not only developed an appreciation for sport but inspired and united students.

Faculty of Engineering, Built Environment and Information Technology



Registration
11 186

Success rate
80,5%

Graduation
2 348

Graphical Communication Intervention Project Prepares Students for Academic Success

The University's Faculty of Engineering, Built Environment and Information Technology recognises the importance of adequately preparing first-year engineering students with technical drawing, computer literacy and study skills to ensure their academic success.

Having identified the lack of these skills in some of its entry-level students, the School of Engineering embarked on an intervention to better prepare these students for the challenges they may experience in the Graphical Communication (MGC 110) module. All first-year engineering students need to complete this module to progress to their second year of study.

The intervention takes the form of a self-driven, hands-on e-learning course that includes a component that helps students learn new study techniques. An existing computer application, the miEBooks app, was used, which provided a platform for an e-book and resources linked to topics in the book.

First-year students in the School of Engineering make use of the miEBooks app on their cellphones



The project was piloted in January 2018 when new first-year students were introduced to it during Orientation Week. After a call for volunteers, 38 students actively participated in the pilot.

The benefit of this support tool for teaching staff was that it was a stand-alone introductory intervention that required little supervision and could be run in the University's existing computer laboratories or from students' own electronic devices. It included videos, pdfs and automated assessments.

Feedback received from the students was positive in respect of the ease of use and self-explanatory nature of the app. The feedback also revealed that the course aided the students' understanding of the material covered in the module.

Upon completion of the course, the academic performance of the students who had actively participated in the programme was compared to that of the inactive users (students who had registered for the course, but had not actively engaged with the material). On average, a 5% improvement was found in the performance of the active participants. It was therefore decided to introduce the programme as a compulsory part of the MGC 110 curriculum in 2019.

The pilot revealed that the course has great potential for preparing first-year engineering students for the technical drawing course, as well as for providing them with essential computer literacy and study skills, thus easing the transition from school to university. An

improvement in students' performance in this module is anticipated at the end of 2019, following participation by the entire first-year group.

Turning Teaching Philosophies into Learning Experiences

Dr Riana Steyn, a lecturer in the University's Department of Informatics, augments teaching and learning in her field through innovative projects and research studies that outline her teaching philosophies. She is the recipient of the Faculty of Engineering, Built Environment and Information Technology's Teaching and Learning Award for 2018.

Dr Steyn believes that students can realise their full potential if they have the relevant access to learning opportunities. They learn best when they are presented with challenges that relate to their experiences,' she says. For Dr Steyn, these philosophies underpin the business analysis and design modules

that she teaches. Students acquire creative problem-solving skills that they can use to design effective software solutions in order to analyse and address real-life business problems.

One of the challenges of the INF 171 and INF 271 modules is the lack of an appropriate textbook that focuses on all aspects of the modules. In 2015, Dr Steyn considered using the entire class as a talent pool to contribute to the development of a cost-effective textbook. She launched the project by giving the students an assignment based on use cases to see if one could develop student-created content that speaks to the average millennial student.



Peer participation evaluation provides a solution to the challenges of groupwork assessment

The first draft was published in July 2018, and students had to complete an assignment while using it as an additional resource. The purpose was to determine if the resource was useful. Dr Steyn is collaborating with an educational technology developer to create an interactive textbook that will be adapted annually to accommodate the

rapidly changing technological environment and the variety of students who annually enter the University.

The iPeer research project is another initiative that stems from Dr Steyn's teaching practice. In 2017, she investigated peer participation, and in 2018, she worked with the faculty's education consultant, Adriana Botha, to research peer participation evaluation (PPE) in the University's learning management system, Blackboard Learn.

The first PPE research paper was presented at the Symposium on Emerging Technologies for Education (SETE) in 2018 and featured the first lessons learnt using the iPeer tool, a peer review application where instructors can customise and receive students' evaluations of one another. The paper argued that technology-supported PPE provides the solution to the challenges of groupwork assessment. It should be used as both a summative and a formative assessment tool.

Multiple future research projects based on these findings will be concluded in 2019 and 2020.

Vertically Integrating Learning for Better Graduates

The ground-breaking Vertically Integrated Projects (VIP) programme of the Faculty of Engineering, Built Environment and Information Technology implemented outstanding teaching and learning methods to produce work-ready graduates in 2018.

Dr Nadia Viljoen, a lecturer in the Department of Industrial and Systems Engineering, coordinates the programme, a joint initiative with the top-ranking Georgia Institute of Technology. In this programme, students solve real problems for real clients. They practise professional skills and contribute to multi-disciplinary design projects in the School of Engineering.

The VIP programme extends the design experience beyond a single semester, with students from all disciplines and at different academic levels participating for up to three years. Team members may change, but the project remains the same. When students join a team, they spend much of the first semester getting up to speed. They make their most substantial contributions in subsequent semesters, both in terms of technical contributions and team leadership. Students have to ensure the project's continuity when team members change.

The long-term VIP programme creates an environment where faculty members supervise teams and new members are mentored by experienced students. Faculty engagement is crucial to the programme's success, and projects must align with the supervisors' research interests to be sustainable.

Supervisors and peers evaluate students' work, and the students have the opportunity to improve. They receive a participation certificate that may improve their employment prospects. By the end of 2018, six teams and one hybrid team had been established.

With the establishment of its VIP programme, the University has joined the VIP Consortium, which includes nearly 30 institutions worldwide. UP is currently the only partner institution in Africa. Together with the Georgia Institute of Technology, which is also a member of the Consortium, the University aims to grow the programme to include teams from various faculties, but it remains a challenge to attract supervisors. Dr Viljoen hopes that the University's teams will increasingly use this platform to collaborate on similar projects in 2019 and that postgraduate students will join over time.

Learning by doing is crucial for developing work-ready graduates. The VIP programme accomplishes this by teaching students to tackle real-world problems.

Immersive Research, Teaching and Learning – Stepping Up Multimedia Education for Future Challenges

Contrary to popular belief, the exciting world of virtual reality (VR) is no longer confined to arcades and computer laboratories. It has the potential to influence all aspects of life in contemporary societies across the globe. With VR quickly becoming part of the mainstream technologies available for both business and entertainment, industry players have become increasingly interested in leveraging this cutting-edge technology.

In answer to demands for relevant VR-based research, teaching and learning, the Department of Information Science has launched a state-of-the-art Virtual Reality and



Professor Johan Joubert with one of the first groups of students to participate in the Vertically Integrated Projects (VIP) programme of the Faculty of Engineering, Built Environment and Information Technology



The VRI Lab in the Department of Information Science is set to open new pathways for students and researchers in the field of multimedia studies to engage in immersive research in several virtual reality-related fields

Interaction (VRI) Laboratory. The VRI Lab is set to open new pathways for students and researchers in the field of multimedia studies to engage in immersive research in several VR-related fields, including user experience design and interaction design in VR.

The VRI Lab was established with the support of Absa, following the company's own experience of the game-changing power of VR tools to interact with people in an immersive way that leaves a lasting impact. The company's partnership with the faculty has made it possible for postgraduate students involved in multimedia studies to help move this technology from novelty to application and come up with workable VR approaches through immersive learning. South Africa is in the process of catching up to global developments in VR infrastructure, which makes this an exciting time for the incorporation of this technology into research, teaching and learning.

The VRI Lab gives postgraduate students in the department access to world-class commercial VR equipment. It incorporates fully equipped, self-contained VR pods for use by individuals or research groups. These pods facilitate an optimal working environment without interference. They contain cameras and controllers that detect motion. This allows students and researchers to get an immersive feel for the projects they are working on in order to deliver informed results. The VRI Lab also hosts a 3D scanner and a 3D printer for developing models during the course of VR research.

From a research perspective, the VRI Lab facilitates the practical implementation of theory, which allows students and researchers the freedom to push the boundaries of the current knowledge and uses of VR. In this way, they can develop exciting ways of using this technology to surpass current solutions to real-world problems. It also provides a platform for collaboration. Potential fields of interest include VR applications in mining and architecture.

Blackboard's Goals Tool Measures Programme Outcomes

While the University's Blackboard learning management system (LMS), clickUP, has become a way of life for students and staff, Ms Adriana Botha, education consultant for the Faculty of Engineering, Built Environment and Information Technology, is examining some of the innovative applications of the LMS that have not been used to their full potential.

An important consideration to achieve the University's strategic goal of enhancing access to education and successful student learning is the promotion of best-practice approaches in assessment and accreditation. This entails employing constructive course design and programme alignment to ensure that one's efforts reflect how teaching and assessment impact on programme outcomes.

The accreditation of academic programmes, both nationally and internationally, plays a crucial role in affirming the quality of an institution's programmes and its commitment to student success. At UP, programme evaluation and accreditation by professional bodies involve the formation of panels, self-evaluation reports, site visits and formal reporting. At present, each programme follows its own unique method of developing self-assessment reports for external evaluation.

In an endeavour to streamline this process, Ms Botha recommended the use of the Goals Tool in clickUP as part of the improvement plan of the School of Information Technology. This will serve as a pilot project and will assist the University to decide on the future implementation and roll-out of the tool to other faculties as part of an institutional assessment and accreditation solution.



Ms Adriana Botha, the faculty's education consultant (left), and Professor Carina de Villiers, Head of the Department of Informatics, make use of the Goals Tool in clickUP to evaluate programme outcomes

It will also form part of the School's assessment for accreditation with the Accreditation Board for Engineering and Technology for Informatics (ABET). The Department of Mining Engineering has also expressed the desire to make use of this tool for its accreditation with the Engineering Council of South Africa (ECSA).

In order to assist lecturers in the school to meet the assessment requirements, a three-day workshop was presented by Blackboard, the developers of the LMS.

One of the key outcomes of the workshop was the development of an effective goals structure for assessment reporting. It also enabled lecturers to reflect on their teaching, learning and assessment practices, and empowered them with knowledge and implementation strategies to improve on current practices based on quality-assured data derived from the LMS.

to ensure academic success. Following the identification of several high-risk modules in the School of Engineering, the University's Department for Education Innovation was approached for assistance.

Mr Dolf Jordaan, Deputy-Director: E-learning and Media Development, recommended the use of Blackboard Predict, an application aligned to

student's current mark, programme level, date of enrolment, number of students enrolled in the programme, whether the student is enrolled full-time or part-time and whether it is an undergraduate or postgraduate module. The resulting risk value is given as a percentage that indicates the probability that a particular student will pass or fail a certain module.

According to Mr Jordaan, a limitation



Blackboard Predict, an application in clickUP, can help identify students at risk, and therefore contribute to students' academic success

By using this tool, academics can develop a systematic process for compiling a programme-level accreditation review. They can also align programme learning outcomes with institutional learning outcomes to provide a holistic view of student performance.

Using a Data Model to Predict Student Risk

One of the challenges experienced across all faculties is the identification of students at risk so that they can be provided with the necessary support

Blackboard Learn, branded as clickUP at UP. This application generates predictions about student risk using historical data from the LMS. Its success depends on lecturers' effective use of clickUP as it is influenced by the accurate alignment of learning activities with student outcomes, as well as good programme design and facilitation.

To create the model, data are first organised and fed into a machine-learning algorithm. The model uses a variety of features to provide a risk value. These features include elements such as the

of this model is that, while it is very effective in predicting student risk, this comes at the expense of explaining why a particular student will fail a certain module. However, the value of the model does not lie in the predictions but rather in the interventions and support that can be provided to students to ensure their academic success.

This model was piloted in six high-risk modules at the University in 2018 – four of which were in the Faculty of Engineering, Built Environment and Information Technology. Reports were

developed after each test series and the results given to both the lecturers and the Deputy Dean: Teaching and Learning to determine which interventions or support mechanisms could be provided to the students. The pilot revealed a strong to very strong positive relationship between the prediction in Week 8 of the course and the students' final semester mark. The model will be extended to other faculties in 2019.

Positive feedback was received from the faculty student advisors, who indicated that access to the students' data gave them insight into academic risk factors. It also provided them with a tool to track the success of an intervention and its eventual result on student performance.

Faculty Student Support System Is Enhanced

The University has for many years recognised the role of student support in academic success. This starts with the first contact a student has with UP and ends with graduation. Although first-year students in need of social and emotional support are already identified through an academic readiness survey (STARS) during Orientation Week, many only realise that they require support when they receive the results of their first tests or examinations.

For this reason, each faculty has one or more faculty student advisor (FSA). In the Faculty of Engineering, Built Environment and Information Technology, student support is essential, as a number of modules have high student numbers and a low success rate.

The faculty's FSAs are located in dedicated facilities in the Loeloeraai Building at the Prospect / Festival Street entrance to the Hatfield Campus. They provide assistance with study skills, time management and other co-curricular issues, and help students to handle academic and emotional stress.

In order to provide students with the best possible service, any factors that

hinder them from receiving the necessary support should be eliminated. Challenges such as a perceived lack of privacy and confidentiality, and difficulties in making an appointment have been addressed in a pilot project launched in the faculty by the Department for Education Innovation. This entails making use of the Google Calendar appointment slot functionality.

This function has the advantage of relieving the administrative burden on staff members, while ensuring the confidentiality of students' information and being easily accessible. Students can make use of a quick response (QR) code to book an appointment with the FSA of their choice. There are easy-to-use instructions, and students can view all available time slots and select a time that is most convenient to them.

The benefit of this system for the student is that it is available 24 hours a day, seven days a week. A cancelled appointment slot is available immediately and students can easily contact an FSA if they need to postpone an appointment. Appointments can be made a week in advance, and students can check their appointment times and set reminders at desired intervals.

The system went live in August 2018 and received positive feedback from the FSAs who found that it improved their effectiveness. Following the pilot project, the FSAs in all the other faculties are also being trained in the use of this system. It will be rolled out across the University during the first week of the 2019 academic year.



By making use of the Google Calendar appointment slot functionality, it is much easier to make an appointment with one of the faculty student advisors to receive the necessary emotional and academic support



Faculty of Health Sciences

During 2018, both staff and students of the Faculty of Health Sciences at the University of Pretoria were recognised locally and internationally for excellence and prominence in leadership in health and the education of health professionals.

Professor Jannie Hugo Receives Lifetime Award

Professor Jannie Hugo, Head of the Department of Family Medicine in the School of Medicine, and long-time proponent of the importance of primary health care and community engagement, was honoured with the Lifetime Achievement Award from the South African Medical Association (SAMA) for outstanding, pioneering contributions to the primary healthcare system.

Registration
7 403

Success rate
94,2%

Graduation
1 489

Professor Hugo and his team have been the drivers of many innovations in healthcare and education for health practitioners, both locally and internationally. The department was recognised for the Longitudinal Clinical Attachments project for medical students and the Community-Oriented Primary Care (COPC) approach by being the recipients of the University Excellence In Teaching and Learning Laureate award in 2013 and went on to win the HELTASA national teaching award and the 'Projects that Work' award of the international organisation, the Network: Toward Unity for Health. Another of Professor Hugo's brain children, the Ward-Based Outreach Team programme, linking communities to local clinics through a

combination of community health workers and technology-driven data collection, has been acclaimed and emulated across the country. Never one to rest on his laurels, Professor Hugo is spearheading other projects including Street Medicine and the Community-Oriented Substance Project (COSUP) intervention to tackle some of the most pressing healthcare needs of the country. Professor Hugo's team uses a ground-breaking new approach to address the harmful use of substances and their impact on communities. COSUP engages with drug users, usually before they develop a serious drug dependency, by offering a range of interventions that are non-confrontational, collaborative and based on the best available scientific knowledge appropriate for the local context. The project started in August 2016 with eight sites across the City of Tshwane and six sites in Mamelodi and Soshanguve. Over 2 500 participants have been enrolled, with 450 receiving medication to help reduce the use of 'nyaope' (a popular drug). Project leader Dr Lorinda Kroukamp of the Department of Family Medicine explains that COSUP is built on existing services and structures in the community and is therefore cheaper and more responsive, and people can access it when and where they need help. Professor Hugo's most recent achievement is as the leader of the team that has been awarded the tender from the National Department of Health to roll out a pilot project for the implementation of National Health Insurance (NHI). The University is justifiably proud of Professor Hugo and his team, whose pioneering activities are directly aligned with the University's strategic goals for excellence in transformed, relevant education and contributions to a just and equitable society.



Professor Jannie Hugo

Dentistry Winners at UP and Internationally

Dr Karl-Heinz Merbold, a lecturer in the Department of Maxillofacial Surgery in the School of Dentistry, was the recipient of the 2018 Faculty of Health Sciences award for Excellence in Teaching and the Faculty nominee for the Teaching and Learning Laureate awards. Dr Merbold is a relative newcomer to education, having practised as a dentist for more than 20 years before realising his vocation in academia by joining the faculty in 2012. His award was recognition of a novel method of assessing students to promote and ensure clinical competence. Says Merbold: 'Our system puts the onus on the students to plan, strategise and reflect on their own performance in order to improve, because without improvement, independent practice will not be possible. The system elicits a behaviour change in students to take responsibility for their own learning. Following this they use their existing knowledge and experiences to improve their abilities for the future, obviously sometimes with a bit of help from clinical supervisors. So far very few students have failed to show progress. In cases where available data showed a lack of improvement, I could intervene timeously with self-regulation level feedback. I have witnessed how, by visually displaying to students that they have the ability to perform procedures independently, I can stimulate self-efficacy, belief and confidence. It is often hard for lecturers to realise what the true impact is of their teaching and learning in society. What I have realised is that by ensuring an increased level of competence and stimulating attitudes of self-regulated learning, we will go a long

way to ensuring patient safety and well-being. These are the traits we need in people serving the public at large. If every lecturer can embrace such a focus in terms of the one or two skills they teach, all our little bits will add up to unlimited heights that would increase social accountability. We will thus ensure that the healthcare system is fed with competent people who are willing to drive excellence and improvement'.

Dr Merbold and Professor Corné Postma of the Department of Dental Management Science, also a previous recipient of a teaching excellence award in the faculty, won an award from the AO Foundation for the best short communication in surgical education at the Association for Medical Education in Europe (AMEE) annual conference in Basel, Switzerland, in August 2018, for their presentation entitled 'Using task-level feedback with achievable objectives to improve clinical competence'. AMEE is the largest international annual medical education conference and is attended by experts from all over the world. This oral presentation, together with a related poster presentation, reported on Dr Merbold's master's degree project, which he passed with distinction. The project aims to develop students' exodontia (tooth extraction) competencies by measuring progressive independence using a programmatic assessment system. The data presented provide empirical evidence of how students' competence developed over time, as well as the positive impact of appropriate, regular task-level feedback in relation to achievable targets. The project is now gradually being expanded to other disciplines in dentistry and thus has the potential for significant impact on assessment and promotion of competence in other areas of dental practice.

Professor Corné Postma further contributed to advancing health professions education by leading a collaborative, multi-disciplinary, inter-university workshop on clinical teaching at the South African Association for Health Education's annual conference in Durban in June 2018 as part of the Sub-Saharan African Foundation for the Advancement of Medical Education and Research Regional Institute (SAFRI) 'Teach squad' activities. His co-presenters were Dr Argentina Ingratta (medical doctor) from the University of the Witwatersrand, Dr Ronel Maart (dentist) and Ms Danelle Hess (physiotherapist) from the University of the Western Cape. The workshop highlighted the importance of role modelling, patient-centredness and being supportive when teaching students in a clinical setting.



Dr Karl-Heinz Merbold with co-author Professor Corné Postma

Faculty Members Appointed to Leadership Roles of Professional Organisations

Dr Flavia Senkubuke, senior lecturer in the School of Health Systems and Public Health, epitomises the rising stars taking up leadership positions in health. Her already impressive list of achievements, accolades and leadership positions was further extended in 2018 when she was appointed as the Chair of the College of Medicine of South Africa, the body responsible for the examination of the postgraduate, specialist qualifications in the fields of medicine and dentistry. In this position, she is following in the footsteps of two other UP faculty members who held the position immediately before her – Professor Mike Sategke, HoD of Nuclear Medicine and Professor Gerhard Lindeque, HoD of Obstetrics and Gynaecology and Chair of the School of Medicine. Dr Senkubuke will undoubtedly bring to this role her energy and expertise and make an essential contribution to a vital area of education which needs to be responsive to international standards of excellence in the local environment, but also adapt and contribute to a rapidly changing and evolving, technologically challenging field. Dr Senkubuke was further recognised for leadership when she was nominated as a finalist in the Women of Stature awards, a platform for women from all walks of life committed to empowering all women to live their purpose and reach their full potential. At heart, Dr Senkubuke regards herself as a philanthropist who is passionate about mentoring young people.

Professor Fulumani (Mavis) Mulaudzi, Head of the Department of Nursing Science and Chair of the School of Healthcare Sciences, was elected as the Chair of the Forum for University Nursing Deans of South Africa (FUNDISA), based on her outstanding leadership in nursing. Professor Mulaudzi is also prominent in South Africa with her contribution to work on indigenous knowledge systems (IKS).



Dr Flavia Senkubuke



Professor Mavis Mulaudzi



Professor Steenkamp



Graca Machel delivering the Albertina Sisulu centenary memorial lecture in the Faculty

Professor Vanessa Steenkamp, Head of the Department of Pharmacology in the School of Medicine, was elected as a member of the Education and Management Division (EMD) executive committee of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC). The EMD's main role is to guide the IFCC members representing 93 countries and the healthcare community on relevant scientific, management and clinical issues related to clinical chemistry and laboratory medicine. This entails guiding laboratory professionals to function optimally in a changing environment to meet societal healthcare needs by providing solutions and guidelines to overcome current problems in education and management practices. Professor Steenkamp is also currently the president of the South African Society for Basic and Clinical Pharmacology (SASBCP), the first woman to hold this position. At the 2018 Conference of Biomedical and Natural Sciences and Therapeutics, she was proud to present awards for the best presentations to four members of the Department of Pharmacology at UP, including the Educator Award to Dr Werner Cordier.

At the 2018 biennial congress of the South African Spinal Cord Association (SACSA), two staff members of the Department of Physiotherapy were recognised for their contributions to their discipline: Ms Kholofelo Mashola was elected as Vice-President of the association and Head of the Department, Professor Joyce Mothabeng, received the Professor Hans Myburgh Award for the best presentation.



Graca Machel with the then Vice-Chancellor Professor Cheryl de la Rey

Celebrating the Centenary of Albertina Sisulu and Leadership for Health

The year 2018 saw the celebration of the centenaries of two inspirational South African leaders, Nelson Mandela and Albertina Sisulu, who was a nurse by profession and tireless in advocating health as a basic human right. Sisulu's memory is already entrenched at UP in the Albertina Sisulu Executive Leadership Programme in Health (ASLEPH), which was spearheaded by a previous dean of the faculty, Professor Eric Buch, and is offered as a collaboration with the University of Fort Hare and the TC Chan School of Public Health of Harvard University Business School. The ASLEPH initiative in the School of Health Systems and Public Health offers a postgraduate diploma using a hybrid model of teaching and learning, which is attended by senior members of provincial health departments and designed specifically to improve capacity in management of the health system nationally. ASLEPH and the faculty had the honour to pay tribute to its namesake, Albertina Sisulu, with a prestigious centenary memorial lecture delivered by former first lady Graca Machel and attended by members of the Sisulu family and numerous prominent guests.

UP Health Professions Educators Complete SAFRI Fellowship

The University of Pretoria has long been at the forefront of developing leadership in health professions education in many spheres including the fellowship programme of the non-profit organisation Sub-Saharan Africa FAIMER Regional Institute (SAFRI), the local affiliate of the Foundation for Advancement of International Medical Education and Research (FAIMER).

UP faculty members in the Department of Family Medicine, Dr Marietjie van Rooyen and Professor David Cameron (now retired), were founder members of SAFRI in 2008. Since then, 19 UP faculty members, representing all four schools, have completed the fellowship, and nine have been involved as teachers on the programme, including senior lecturer in the School of Health Systems and Public Health, Dr Liz Wolvaardt, who is currently one of the two programme directors of the fellowship.

At the 10th anniversary celebration of SAFRI in June 2018, no fewer than six faculty members from UP were recognised for completing the two-year fellowship programme. The number is particularly noteworthy as only 16 fellowships are awarded each year to applicants from across sub-Saharan Africa. The six presented their projects at the annual conference of the South African Association for Health Educationalists (SAAHE) in Durban. The meeting was also attended by an additional 13 UP faculty members and medical student Mr Michiel Koortzen, thus firmly reinforcing the place of UP health professions educators on the national map.

Undergraduate Students Making Waves at Home and Abroad

Undergraduate students of the faculty once again brought honour to the University with their commitment to advancing the ideals of the faculty in diverse disciplines.

In an ever-changing modern world, with growing technological advances in societies with multiple challenges, the need arises for higher education institutes (HEI) to ensure that their students are capable of critical appraisal, creative problem-solving and dynamic innovation. All of these skills are grown by exposure to research. The Tuks Undergraduate Research Forum (TURF) at the Faculty of Health Sciences was founded in 2013, but revived in 2015 to support and enhance the research experience of all undergraduate students who would like more research exposure as an extra-curricular activity. TURF is currently supported by the Research office, three academic staff members (from the schools of Health Systems and Public Health, Dentistry and Healthcare Sciences) and six medical students. From 2015 to September 2018, TURF maintained an active database of approximately 100 students (largely MBChB), with a third of students at different stages of the research process. Achievements of TURF participants in 2018 included publication of research of which Mr Lusanda Zongo (MBChB III) was a co-author; first prize poster presentation at the Rural Health Conference of the Rural Doctors by Mr Michiel Koortzen and Mr Lourens Biggs (MBChB IV); 'Soapbox' presentation winner at Faculty Research Day, Ms Kathleen Boshoff (MBChB II); and most notably, best poster presentation at the 27th International Conference of Psychiatry and Psychology in France by Ms Sasha Hurst (MBChB IV).



Stephan Brink

Medical students from the Tuks Student Surgical Society represented the faculty at the 2018 symposium of the International Association of Student Surgical Societies (IASSS) hosted by UCT and Stellenbosch University in Cape Town. During the symposium, two University of Pretoria students, Ms Jomarie Weyers and Mr Stephan Brink, were elected to the positions of Administrative Officer and Editor in Chief respectively. The Tuks Student Surgical Society also hosted their annual Scrub Run to raise funds for the Hospitals

of Pretoria Paediatric Fund, once again demonstrating the contribution UP students are making to advancing the excellence of their chosen discipline as commitment to community engagement projects.

Ms Anine de Wet and Ms Michelle da Rocha, two BRadHons (Nuclear Medicine) students in the Department of Radiography, were named the 2017/2018 nuclear medicine students of the year at the South African Society of Nuclear Medicine congress.

Physiotherapist Ms Michelle Bester completed her master's degree with a dissertation entitled 'Predisposing factors for injury: a study of South African elite young male footballers' and was one of 35 students accepted for the master's degree in health and physical activity at the Università degli Studi di Roma 'Foro Italico' in Rome, Italy, with a full scholarship from the Italian Foreign Ministry.

Yet another young UP student excelling in the field of sport and exercise science is Ms Mignon Black, a final-year BSportSci student who joined three other South African students and many others from around the world to attend the International Scholar Laureate Programme (ISLP) for Medicine and Science in Australia. They participated in lectures and discussions on healthcare systems in the US, South Africa and Australia, with a special focus on rural areas. Through the visit, Ms Black had the opportunity to develop as a young researcher, to network and to explain the role that exercise and sport science play in the fields of healthcare, medicine and science. She was also nominated as the recipient of the Vice-Chancellor and Principal's medal for the top student of all undergraduate programmes in the Faculty of Health Sciences in 2018. This is a particularly significant accolade for a winner in the faculty's newest undergraduate programme and emphasises the importance of the BSportSci degree as a pipeline for postgraduate studies in the faculty's newly established Sport, Exercise Medicine and Lifestyle Institute (SEMLI). At the official launch of the institute in October 2018, Director, Professor Martin Schweltnus, explained that SEMLI serves as an experimental platform for postgraduate students in sport and exercise medicine, biokinetics, sport science, sport and lifestyle psychology, nutrition, physiotherapy, orthopaedics and radiology. 'With the launch of SEMLI, UP as the leading sports tertiary institution in South Africa will strengthen its sport science capacity and affirm its position as the top sports science university on the continent,' said Vice-Chancellor and Principal, Professor Cheryl de la Rey, at the launch.

Painting Health Sciences Red

A record number of 43 PhD students in the Faculty of Health Sciences completed their degrees during 2018, 21 graduating at the autumn ceremonies and 22 in the spring.



Anine de Wet and Michelle da Rocha



Spring Graduation: The graduates, their supervisors, senior faculty officials and Vice-Chancellor and Principal, Professor Cheryl de la Rey (front and centre)

Faculty of Humanities



The Faculty of Humanities is one of the largest and most diverse faculties at the University and boasted a success rate of 85,5% in 2018. The faculty has continued its focus on curriculum transformation. Several vignettes below demonstrate progress in this process. The faculty is also proud of its steady move to embrace technology as part of its teaching practice. From digital lectures, to Kahoot quizzes, to clickUP and its peer-to-peer learning possibilities, to the Global Classroom that connects students across cultures and continents, the faculty is demonstrating what it means to be human in the digital age. Many stories of 2018 show what can be achieved at the intersection of curriculum transformation and technology. A focus on student success is another hallmark of 2018 for the faculty. The faculty's graduates are critical, creative, pioneering, and the bedrock of South African society.

Ongoing Curriculum Transformation

On 3 May 2018, a teaching and learning discussion was held on curriculum transformation. During this session, colleagues from three departments (Historical and Heritage Studies, Speech Language Pathology and Audiology, and Music) shared their efforts and achievements in respect of transforming their curricula and the way in which these changes were received by students and other stakeholders. The presenters were:

- Ms Phuti Sepuru (Music),
- Dr Ian McQueen (Historical and Heritage Studies) and
- Ms Renata Mosca and Ms Shabnam Abdoola (Speech-Language Pathology and Audiology).

The response and open discussion were led by Dr Nisa Paleker (Chair: Transformation Committee) and Dr Ndokuyakhe Ndlovu (Archaeology and Anthropology). Thirty-eight lecturers (as well as a number of students) were present.

A Lifetime of Service – 2018 Teaching and Learning Merit Award

Professor Alta Kritzinger, from the Department of Speech-Language Pathology and Audiology, has spent her career teaching early communication intervention, a relatively new but growing field. She received a teaching merit award for a lifetime of teaching at the Clinic for High-Risk Babies (CHRIB) and for introducing community-based practicals for Speech-Language Pathology and Audiology students in the 1990s at Hammanskraal, Atteridgeville and Kalafong hospitals. In the process, Professor Kritzinger founded CHRIB and has coordinated its clinical and teaching activities since its inception 28 years ago. The specialist clinic annually serves 55 to 70 young children with communication difficulties and their families, while also providing training to undergraduate nursing, medical and occupational therapy students. With a gradually transforming client base, CHRIB provides learning in diversity and sensitivity, and, together with staff, students are encouraged to develop early communication intervention practices relevant to South Africa.

To Professor Kritzinger, the lived experience of concrete learning at CHRIB, lecturer-guided opportunities for reflection

and abstract conceptualisation, and active experimentation with newly acquired knowledge, are the essence of sustainable early communication intervention learning. Her vision is to equip students to deliver the highest quality of earliest intervention services to all families with infants and young children with developmental difficulties in South Africa. Thank you, Professor Kritzinger, for your invaluable service!

Same Fears, Different Takes

By foregrounding humanity and empathy, Ms Ziyanda Majombozi's Anthropology (APL 310) course navigated contentious issues such as decolonisation and eurocentrism and encouraged students to list their hopes and concerns, prompting them to interrogate these prickly debates. The humbling exercise reminded students that they were all humans, had similar fears, and that they ultimately all wanted to be respected. Finally, each acknowledged that they were uncomfortable with these topics but that discussing them was essential. This approach of open discussion helped students appreciate one another for their different perspectives.

Contact Zones

While teaching the second-year German literature course, Mr Henk van der Westhuizen and Dr Susan Haskins introduced a documentary film to help students contextualise and analyse questions of belonging and cultural identity. The film, *Weisses Blut – Aus den Ruinen in die Sonne: Eine Apartheids Geschichte Doku*, documents the lives of two German children who were adopted as orphans by predominantly Afrikaner families in 1948. The didactical approach asked students to assess how the orphans coped with their need to belong and their unique cultural identity in apartheid South Africa – being both privileged white South Africans and the other in society, owing to their German background.

This approach helped students grasp the role that cultural, linguistic and historical contact zones play in learning a foreign language. Contact zones, generally defined as places where different fields of knowledge meet, helped these students appreciate South African-German history and provoked them to question their own cultural, political and socio-historical contexts – making for a meaningful and tangible learning process. The class helped students respond to their social context and learning environment while also provoking them with questions: What does it mean to belong? What shapes someone's feeling of belonging? What discourses of belonging are there in South Africa?

Body and Voice

In the School of the Arts, the Department of Drama continues to combine theory and praxis to produce artist-scholars who can produce for and teach in the creative and education sectors. These skills are essential in an era that challenges artists to position and represent themselves in body and voice. A perfect example of this dilemma is our students' production of *69 and still counting*, written by Standard Bank Young Artist for Dance 2017 and winner of the 2016 Sophie Mgcina Emerging Voices award, Thandazile Sonia Radebe. The play explicitly references two crucial South African historical events: the 21 March 1960 Sharpeville massacre and the August 1956 Women's March to the Union Buildings to protest pass laws. Ms Radebe and the drama students linked those events to the disposability of the black body, as issues of racism and socio-economic inequality remain salient in contemporary South Africa and elsewhere in the world.

Registration
5 717

Success rate
85,5%

Graduation
1 634

The first-year drama students explored these and similar themes in *This is South Africa*, directed by Mr Rian Terblanche, a production that additionally explored themes of toxic masculinity, rape and homophobia. The production was performed in isiZulu, isiXhosa, Sepedi, Setswana, English and Afrikaans, and asked students to collaborate on narratives centred on these and related themes. Students had to identify what they thought were symbolic images of South Africa and then link them to images suggested by other students. In doing so, students critically reflected on their coursework in order to define where they would position themselves in South Africa today.

Unlaagering Afrikaans

The Department of Afrikaans hosted a series of events that investigated the 'laagers' (protective but often exclusionary practices) that influence how Afrikaans literature is taught. The purpose was to see whether these laagers could be opened up, replaced or destroyed. In 2018, Dr Bibi Burger organised an academic conference and an informal public panel discussion to consider 'Reimagining the pedagogy of Afrikaans literature'. Conference attendees examined a variety of topics including the challenges that are faced by high school Afrikaans literature; the divides between different languages, academic language departments and the potential for collaboration; the tussle between the varieties of Afrikaans and between first and additional speakers and students; and the linguistic and literature divides within Afrikaans departments.

Afrikaans public intellectuals Andries Bezuidenhout (poet, musician, painter and academic), Alfred Schaffer (Dutch poet and lecturer), Louise Viljoen (academic and reviewer) and Bettina Wyngaard (crime writer and columnist) participated in the panel discussion held at the African Beer Emporium in the Pretoria CBD. Topics debated included which texts to include in the Afrikaans



Dr Nisa Paleker

curriculum and how to teach them in an accessible manner to a diverse body of students. These events launched a three-year project with Afrikaans lecturers at the University of the Free State and at North-West University.

The Different Sameness of Teaching in Tokyo

Dr Nisa Paleker spent four months as a visiting academic at the African Studies Centre, Tokyo University of Foreign Studies (TUFS). She taught a series of 90-minute lectures to small groups of undergraduate and graduate students. The longer lecture period allowed undergraduate students in her African Spirituality class to reflect on issues and ask questions, and also allowed her to incorporate more visual material – at least a ten-minute video clip. In fact, the presentation and assessment flexibility allowed her to include more spontaneous and 'fun' class activities such as creating crossword puzzles on content knowledge. The Japanese students were fascinated with the subject as well as with the continent and its past and present. The positive response was also based on the affinity between Japanese and African spirituality, in particular the centrality of ancestors. In a very real sense, classes were mutual learning opportunities where Dr Paleker learned as much as the students about both cultures.

From Dr Paleker's perspective, Japanese students are not entirely different to their South African peers. Some are incredibly hard-working, more committed, knowledgeable and curious than others. The one marked difference between South African and Japanese students is the depth of textual engagement, with many Japanese students outstripping their South African counterparts. This is thanks to a culture of reading that is manifestly visible, especially in trains and in other public spaces. One of the tragic consequences of the South African past is the uneven spread of a reading culture which (as one factor among others) has academically hobbled many South African students. It also perpetuates historical epistemic inequalities in an era which, by all 'expert' accounts, will require humanities graduates with creative and cognitive skills that can only be developed by reading.

Teaching Children through and by Design

Contemporary design discourse and practice interrogate how designers respond to complex global challenges to try and grasp their varied conceptualisation and articulation. It is within this context that Dr Fatima Cassim and Ms Marguerite van der Merwe facilitate an annual design for development project. In 2018, the project was entitled 'Teaching children creative problem-solving and design thinking skills through design principles focused on teaching design as a strategic, problem-processing tool for citizens'. Students developed an edutainment toolkit for children (aged 8–12) and their parents and / or teachers. The toolkits had to be conceptualised and designed to engage children in a way that would instil a design thinking mind-set that they could use to solve problems.

Where possible, information design students were encouraged to test their ideas

with children (with the aid of a parent / guardian / teacher) and / or a child expert. The purpose of user-testing research was to ensure that the students' solutions were pitched at the right level, fun to engage with and appropriate in terms of the learning objectives they set out for their activities. From the students' feedback, Dr Cassim and Ms van der Merwe were able to make visible a democratic teaching approach through and by design. Hence, the democratic dialogues that ensued among students, professionals and the community participants who interacted during the project proved their teaching philosophy – experiential learning and communication beyond the classroom are catalysts for collaboration, co-creation and ultimately social innovation.



Students prototyping their edutainment toolkits with children, using digital and paper prototypes

Roland Henwood and Heather Thuynsma interacting with students in the Global Classroom

The Global Classroom: Four Universities, Four Continents, One Class

2018 Teaching and Learning Award, Faculty of Humanities

As political science lecturers, Mr Roland Henwood and Ms Heather Thuynsma teach students to examine the political context and the strategic choices of various political actors in order to understand different normative perspectives and the consequences of these actions. However, both lecturers realised that students tended to focus too narrowly on a 'known environment', a dominant South African informed view and argument. Indeed, students needed to better contextualise the problems faced both in South Africa and more broadly to understand how politics would be shaped in the future. For this reason, they taught STL754 using an active learning pedagogy that relied on discussion, practical political experience, and academic texts to introduce students to other fields that intersect with the political sciences, such as psychology, history, geography and philosophy. To broaden their views, the students enjoyed a semester abroad in four different countries without leaving Pretoria!

Using video and social media technology, the Global Classroom was the first of its kind to link students from four different universities and on different continents in real time. The students participated in weekly interactive seminar sessions (held in the Library Auditorium) with their peers at the University of Akron in the USA, Fundação Armando Alvares Penteado (FAAP) in Brazil, and Le Mans Université in France. The interactive format and teaching approach encouraged students to interrogate texts while appreciating their current circumstances and other (not always complimentary) opinions. Students were able to question each other, key scholars and practitioners from across the globe and uncover a new appreciation for other cultures, practical problems and their academic study.

Digital for Diversity

Conceptualising, designing and implementing a new honours course, BSocSciHons (Heritage, Museum and Preservation Studies), presented some unique opportunities and challenges. The most important was to tailor the course for students who were, in all likelihood, employed on a full-time basis in the sector. The course also called for innovative approaches to introduce students to key scholars (not always based at UP) in the fields of African Studies, Creative Studies, Museology and Sociology, among others.

Time, schedules and the sheer cost prevented the programme from bringing these scholars to Pretoria. To mitigate these factors, the convener, Dr Siona O'Connell, produced a series of ten digital lectures by approaching scholars to record a series of 35-minute lectures that the students could view via clickUP at their convenience. These digital lectures exposed students to vastly different perspectives and are now part of a growing cohesive digital archive of teaching material that other courses can use. The archive currently includes lectures by Professor Harry Garuba (UCT) on 'Representation of Africa', 'A view from Rhodes' by Professor Nick Shepherd (Aarhus University), 'Heritage and fashion' by Dr Erica de Greef (Zeitz Museum of Contemporary Art Africa), 'Establishing the District Six Museum' by Bonita Bennett (Director of the District Six Museum), and 'Letters of stone' by Professor Stephen Robbins (Stellenbosch University).

Tech-Talks!

Teaching and learning a long dead language like Biblical Hebrew can be a tedious process. Students have to master a completely new alphabet, learn to write and read from right to left, and come to grips with a completely new vocabulary. Once they start reading the Hebrew Bible in its original language, they make the unsettling discovery that texts, ostensibly well-known and well-loved, were written in a culture and time much different from

our technologically-advanced reality. In 2018 Professor Gert Prinsloo was able to involve in the course a millennial, Charlotte Sibanyoni, who found ways to use technology to revitalise a dead language. From digital lecturers to quizzes on Kahoot, Hebrew 1 students competed among themselves to master nitty-gritty grammatical concepts, vocabulary and basic translation techniques. From a teaching perspective, it saved time normally used to mark class tests and helped to keep a record of students' performance, observe students' participation in groups and identify students who needed individual attention. Students also created narrated PowerPoint presentations using Office Mix to prove their pronunciation prowess and made short YouTube videos where they read a Hebrew text and analysed words. The lecturers could monitor each student's progress, correct mistakes on an individual basis, and challenge students to be creative in their individual presentations. It transformed the learning process into a creative and fun process.

As the language skills improved, the lecturers used the cultural diversity in the class to help develop a deeper understanding of the Hebrew Bible and one another. Using the creation story in Genesis 1, the lecturers challenged students to compare their analysis and interpretation of the Hebrew text with translations available in their mother tongues. Ultimately, students realised how translations can influence different understandings of the same text in different cultural groups.



Dr Siona O'Connell

Being Human in the Digital Age: From Cybernaut to Astronaut

In 2018 Ms Karli Brittz and Professor Amanda du Preez revamped and refocused the Visual Culture Studies course into a module now entitled From Cybernaut to Astronaut.

They chose cybernaut and astronaut because each embodies a particular human and technology engagement: the cybernaut uses technology to travel in virtual spheres while the astronaut travels into outer space in a technologically-advanced vessel. The module uses images from social media, television, film and the arts to explore how digital technologies have infiltrated almost every aspect of human existence and how that affects what it means to be human in a digital age. The course was designed in such a way that its form (the course structure, layout, sequencing, assessment and delivery mode) and content (the critical questions, themes, assessment outcomes and medium) are complementary and interlinked.

Learning Communities: Philosophy and Political Sciences

In continuation of the success with learning communities in psychology in 2017, the faculty introduced learning communities for certain modules in the Departments of Philosophy and Political Sciences in 2018 to address the low pass rates. A learning community comprises a small group of students, usually facilitated by a tutor, mentor or advisor, focusing on a common area of study. Learning communities have been linked to benefits such as intellectual development but also more widely to the development of graduate attributes such as team work. 'Students engaged in a learning community are able to build both intellectual and social relationships with classmates and faculty through shared experiences and increased time together' (<http://www.radford.edu/content/high-impact/home/learning-communities.html>).

The Philosophy (FIL 120) learning community focused on helping students unpack and appreciate key philosophical concepts in addition to essential academic skills such as critical thinking, library research, time management and interpersonal communication. According to Dr Mpho Tshivhase and her tutors, the learning community model could offer students more personalised assistance and introduce key learning techniques they would otherwise not have had

the time to explore. The community reinforced themes raised in class and incorporated a range of material, produced from African and Western traditions, to help pace the students through the more unfamiliar and dense coursework. All assessments were written and each student's performance was tracked using weekly tracking forms. The programme's success shows in FIL 120's increased pass rate – from 62,6% in 2017 to 73,4% in 2018.

To increase the throughput of Political Sciences' PTO 101, Dr Sithembile Mbete and her team of tutors used the Group Discussion Board on clickUP to design a peer-to-peer learning programme. This programme focused on helping students understand and apply key concepts and theories in addition to bolstering their poor writing, reading and critical thinking skills. Groups of 20 students debated case studies related to the weekly theme taught in class, and a moderator kept the discussion on track and corrected any errors in conceptual / theoretical formulations. These communities vastly improved the students' ability to use examples and case studies to support their arguments in written assignments and tests, with the pass rate rising from 74,7% in 2017 to 85,9% in 2018.



Professor Gert Prinsloo and Ms Charlotte Sibanyoni teaching Hebrew 1 students

Learning communities also help participating students build a network of peers with whom they can discuss key concepts and generally strengthen their academic performance. Ms Sonja Mostert successfully operationalised this model for her psychology students in 2017 and received a Faculty Teaching and Learning Merit Award in 2018.

Our Students, Our Responsibility

The Unit for Academic Literacy (UAL) supports students who must overcome a disparate education system and general under-preparedness for university-level coursework. Through the Humanities Writing Centre (HWC), under the coordination of Dr Avasha Rambiritch, the UAL offers individualised writing programmes to equip undergraduate and postgraduate students with essential research and writing skills. This is because physically composing a written academic text is a personal exercise that generates specific concerns and problems that often can only be addressed through a one-on-one consultation.

The HWC, therefore, provides writing support that is free, bespoke, develops specific academic strengths and helps build the student's confidence. For departments, they have tailored and embedded their writing workshops into specific modules to support assignment writing tasks for larger groups. The HWC's goal is to provide effective, scaffolded support from an early stage so that we can cultivate academic success as the student progresses through to postgraduate study. This is no 'quick fix' solution but rather an extension of other support mechanisms offered by the UAL.

The writing centre has three schedules: undergraduate, postgraduate and walk-in. In 2016, they purchased an electronic booking system that allows them to generate statistics on the writing centre. The system shows that, in 2018, they saw close to 800 students – more than half of these undergraduate – and close to 300 postgraduate students. The remaining students were 'walk-ins' – students who did not book an appointment but visited if consultants had available slots. The HWC was established to support students with their writing, and it was hoped that students would develop a long-term relationship with the centre. Evidence from the booking system reflects repeat visits from a number of students, so this vision is being achieved.

In 2018, the HWC had five writing centre consultants, all postgraduate students, two of whom were consultants for the postgraduates seeking assistance. No increase of staff is envisaged in 2019. One of the challenges is that the HWC does not have enough consultants to support the large numbers of students needing assistance. They often have to turn away students as they are fully booked, with consultants seeing students even outside normal hours. The other challenge is that the venue they use is not conducive to one-on-one support. The centre currently uses an administrator's office that does not accommodate more than two consultations at a time.

Ultimately, the overall academic success of both undergraduate and postgraduate students is the responsibility of everyone involved in the faculty.



Dr Avasha Rambiritch



Faculty of Law

When in Rome ... Teach and Let them Learn about South African Pluralism

Dr Charles Maimela from the Department of Private Law visited the University of Milano-Bicocca Law School in Italy from 14 October to 14 November 2018. As a visiting professor, he had the opportunity to teach undergraduate and postgraduate students for three weeks on the role and importance of legal pluralism, where 'two or more legal systems coexist in the same social field', the dominant feature of most legal orders worldwide (Merry, 1988: 870). This platform gave Dr Maimela the opportunity to stress the importance of parallel legal systems in South Africa, bearing in mind that the society of South Africa is pluralistic and that it is important to acknowledge the existence of legal pluralism in order to cater for the different needs of people. The role and importance of the Constitution of South Africa was also central in his teaching, as was how the Constitution is structured with the purpose of providing redress and reconciliation against past injustices.

During his last week of teaching, Dr Maimela had the opportunity to teach LLD students the importance of research from a global perspective and outlined how collaboration between countries and institutions was key in the new dawn of the Fourth Industrial Revolution, characterised by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres, collectively referred to as cyber-physical systems. He emphasised how pluralistic research can solve complex global

problems like civil war and other human rights violations, as it places people in a better position of mutual understanding from where they can learn to tolerate and respect each other with the aim of building relations. Dr Maimela used examples in his lectures, such as culture and religion, and the reasons why war related to religion or culture takes place as people do not understand each other's background and beliefs. He used legal pluralism as a mechanism to close such gaps in order to address this social ill from a global perspective, as it provides insight into the legal systems or beliefs of other people.

During his lectures at the University of Milano-Bicocca, Dr Maimela aimed to promote legal pluralism from a South African perspective in a European country, in order to empower the Italian student body with a different perspective of law, specifically in view of the migrant and refugee crises that expose EU countries to new cultures. The ultimate aim was to ensure that the students' minds shift from a single perspective that is being taught, i.e. the common law, to incorporate an African perspective of law that is pluralistic in nature and empowering. Dr Maimela's visit was by invitation from the University of Milano-Bicocca, and he received funding from both the host university and the University of Pretoria with the aim of strengthening relations and building collaboration between the two institutions. As a visiting professor, Dr Maimela had to submit a paper for publication at the University of Milano-Bicocca. The paper, entitled 'The role and

Registration
2 542

Success rate
77,3%

Graduation
636



Dr Maimela

importance of African customary law in the 21st century', is expected to be formally published around April 2019.

Reference

Merry, R.L. (1988). *Law and Social Change*, 870. London: Sage Publishers.

Innovative Intellectual Property Law Teaching and Learning

The Centre for Intellectual Property Law was established in 2008 with the goal of providing and developing expertise in the fast-evolving field of intellectual property (IP) law. IP has always been a pertinent subject, but has become of particular importance with the start of the Fourth Industrial Revolution and the advent



Centre for IP Law

of sophisticated artificial intelligence, robotics and related technologies.

The centre celebrated its tenth year of existence by hosting the South African Association of Intellectual Property and Information Technology Law Teachers and Researchers (AIPLITL) Conference at the CSIR in July 2018. It was a resounding success and featured presentations on many diverse topics as well as open-microphone research discussions which allowed lecturers, practitioners and students to interact in a meaningful way. Students especially benefitted from these discussions as they provided young academics the opportunity to gain valuable insight into their current research from many of South Africa's finest legal minds

in the fields of IP and IT law.

For the first time in UP's history, the centre presented two elective modules for final-year LLB students. The first dealt with advanced principles of copyright and designs, and the second with the intricacies of trademarks and branding. Each of these served as an introduction to specialised concepts that are dealt with in the IP law LLM course, which is the centre's particular focus.

As one of a few LLM courses at UP to run two year-groups concurrently, the IP LLM (coursework) has been successful and has produced many Master of Law graduates in this field. The lecturers include leading academics and practitioners (from prestigious law firms such as Adams & Adams, the Centre's sponsor) and a retired judge of the Supreme Court of Appeal. This group not only serves to inspire leading minds, but also creates a spirit of collegiality while offering diverse viewpoints and opinions.

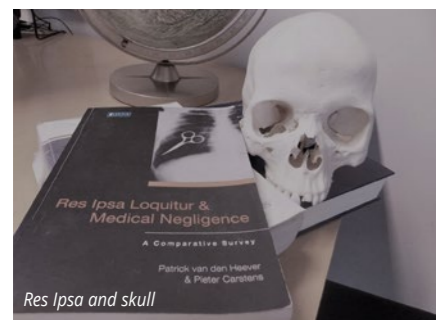
Teaching methodology in the centre focuses on the practical recognition and identification of the numerous different types of IP that exist in trade and industry and in the world around us, and on understanding how our statutory and common laws apply to and protect them. Of course, teaching

the principles and substance of the South African and international IP legal regimes is central to all IP courses, but it is in the visual and practical appreciation and examination of many different products and devices that are presented during the lectures that these often elusive legal principles come to life. The close connection and potential overlap between different forms of IP that may exist in a single product (such as a cellphone) are also demonstrated.

It is believed that the learning experiences of under- and postgraduate students in these courses are enlightening and interesting as a result of the IP Centre's practical and applied approach to teaching.

Teaching and Learning of Medical Law under the Scope

Medical law (inclusive of medical jurisprudence and forensic medicine) was first taught as an elective in the LLB degree (fifth year as it was then) at the beginning of 1977. The course was a year course with the first semester devoted to forensic medicine (enthusiastically taught by Professor David Loubser, then Head of the Department of Forensic Medicine, Faculty of Health Sciences) and



the second semester devoted to medical jurisprudence (taught by Professor Ferdinand Van Oosten, then a member of the Department of Criminal Law, Faculty of Law). From its inception, the course was a popular option owing to its fascinating content as well as the obligatory (albeit scary) visit to the morgue by students. From the beginning, it was clear that this was truly an interdisciplinary course and by no means a 'soft option'. Consequently, the registered students were very committed, and the course quickly became an essential foundational course to specialise in criminal law, delict, contracts (in terms of the doctor-patient relationship), damages and evidence, to name but a few.

After the retirement of Professor Loubser, Professor Gert Saayman was appointed as the Head of Forensic Medicine, and after the untimely death of Professor Van Oosten, Professor Pieter Carstens became the lecturer for Medical Jurisprudence (at this stage a subject housed in the Department of Public Law, Faculty of Law). This collaboration between the Department of Forensic

Medicine and Public Law has now lasted for more than 41 years, and medical law has been diligently taught to law students (now as a first-semester elective only) and medical students (as part of their medical training). In addition, a Unit for Medicine and Law was established (as a joint venture between UP and UNISA, with the legendary Professor SAS Strauss as Director) and, for almost 12 years, a Certificate Short Course was offered by distance teaching to many healthcare practitioners and lawyers, nationally and internationally.

In 2012, the Unit for Medicine and Law was dissolved and, with the initiative by Professors Saayman and Carstens, a new Centre for Law and Medicine was established at the University of Pretoria (housed in the Department of Public Law, with Professor Carstens as Director). Under the auspices of the Centre for Law and Medicine, an MPhil (Medical Law and Ethics) degree was introduced in 2015, and 20 students (mainly healthcare practitioners) have already graduated. The centre's main focus is research, but it has also become involved with medical malpractice litigation and has in this regard acted as an *amicus curiae* (help to the court) in the Supreme Court of Appeal. The centre also liaises with the Department of Health, the Medical Protection Society (MPS), the Health Professions Council of South Africa (HPCSA), the SA Medico-legal Association in context of research, workshops and seminars etc. In 2018, the centre became an affiliate centre of the International Academy for Law and Mental Health Care.

Teaching and learning in Medical Law at UP (undergraduate and postgraduate) focus on the South African health system, the influence of the Constitution on access to healthcare and the NHI-system, the doctor-hospital-patient relationship, defences against medical interventions (e.g. informed consent), medical malpractice, privacy and confidentiality, human procreation law and stem cells, euthanasia and the moment of death, international instruments in medical law, as well as bioethics.



Professor Femida Cassim

The teaching and learning of medical law and bioethics are enhanced by visits to the mortuary to observe a post-mortem procedure and to a hospital for the mentally ill. It is believed that these visits not only expose the students to the practical application of medical law and forensics, but also serve to foster a deeper understanding of the 'human condition'. Many students continue (after graduation with the LLB) to register for the LLM in medical law and, so far, 30 LLM theses have been completed under the supervision of Professor Carstens. Under his supervision, 11 LLDs in medical law have also been completed.

Ultimately, medical law at UP is a very dynamic and topical field of specialisation with a high degree of national and international mobility, and it is clear that it will continue to grow and develop to make a significant impact on the legal and healthcare professions and the society at large.

A Question-based Teaching and Learning Approach to Company Law

Professor Femida Cassim has recently designed an innovative curriculum for the postgraduate company law LLM course. A central focus of the course is the need to examine South African corporate realities. The course emphasises that companies and businesses have a vital impact on society and on the way that people live their lives, from investors, shareholders and consumers, to employees and trade

unions, the local communities in which companies operate and the environment.

Companies play a vital role in social renewal and a good company law system undoubtedly lies at the very foundation of a prosperous economy. A burning issue in modern company law is corporate social responsibility and the role of the company in society. This forms a core study theme in the course, together with the debate about whether companies must adopt a pluralist approach that takes into account the interests of all stakeholders such as the environment, employees, consumers, and the local community, or whether companies should simply continue to follow the traditional English law approach of profit maximisation and the creation of wealth.

A second prominent study theme is the protection of minorities within the domain of company activity, in particular the protection of minorities from oppression, unfair prejudice, and from the abuse of powers by company directors and majority shareholders who plunder the company's resources for their own benefit. Minorities and small investors had very few rights or remedies under the previous South African company law system. In view of the host of recent corporate scandals and failures in South Africa, which have impacted heavily on many ordinary South Africans, including pensioners, widows, orphans and employees, it is clear that the effective protection of minorities is crucial in the current South African environment.

Professor Cassim's focus is on providing an advanced understanding of the foundational principles of company law and to include in the course a comprehensive treatment of modern developments in company law, both locally and internationally. Emphasis is placed on both the theoretical and the practical aspects of these topics, bearing in mind that many of the postgraduate corporate law students are legal practitioners. She teaches company law in its social and economic context, choosing special topics every year specifically for their relevance to practical issues in contemporary company law. For instance, recent events in South Africa have highlighted the failings of the audit profession, while corporate governance has similarly been at the forefront as a means of holding boards of directors accountable for their actions and behaviour, so as to prevent corporate scandals and corporate failures. Also integrated into the course are the unique rights that South African company law bestows on employees and trade unions, both in business rescue and in the enforcement of some mandatory company law principles. These rights are not generally to be found in the Western models of business rescue and enforcement.

An important goal of Professor Cassim's teaching is to encourage inquiry and to use a question-based approach to encourage the seeking of answers. In this way, knowledge is advanced and rote learning is discouraged. She strongly believes that students must be equipped with the ability to think, to analyse and to

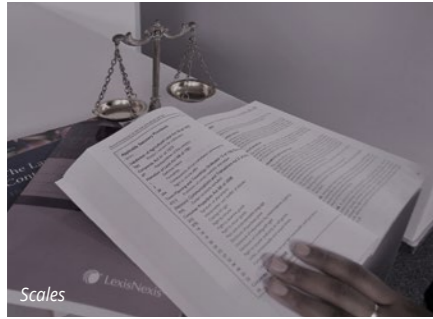
apply knowledge and research methods so that they are able to create solutions to new challenges independently. The main theme of her teaching is to develop an inquiry-led curriculum and to emphasise the value of rational and critical scholarship. She focuses not only on the current legal principles but also explores with her students the defects and shortcomings in the law and encourages students to make constructive proposals for reform of company law.

A further element of Professor Cassim's teaching philosophy is to teach in an energetic and enthusiastic manner and to aim to inspire students' interest in the subject. A positive atmosphere and mutual respect in the lecture room, coupled with an approachable manner, are important elements in creating a learning environment in which all students are encouraged to participate actively and contribute to the class, and to engage in constructive debate on the relevant legal principles under discussion. She is thus able to engage students actively throughout the lecture, prompt diverse opinions, encourage students to argue for or against (thereby promoting the development of thinking skills) and express interest in the students as partners in the learning process.

A final goal of Professor Cassim's teaching is to teach at a high standard, yet in an inclusive manner, to ensure that the entire class follows the lectures, rather than merely the more advanced students. She believes that it is essential to take account of the diversity of our student body and their differing levels of knowledge and critical reasoning abilities.



Commentary on the Companies Act



Hybrid Teaching and Learning in Specific Contracts 'Rocks'

The hybrid learning model of the University of Pretoria converges knowledge sources and communication modes to engage students actively and independently in their own learning, and this is also the primary approach to teaching specific contracts. Professor Jacolien Barnard, the course leader for Specific Contracts (KTH 220), together with her co-lecturers, Professor Reghard Brits and Dr Jani van Wyk, attempt to expose students to forms of hybrid learning (blended learning) during this course, including the use of clickUP as a platform to present narrated PowerPoint presentations to which the students can (repeatedly) listen in their own time.

The relevant policies, course information and approaches to teaching, learning and assessment are presented in this way to the students at the start of the semester, facilitating a better understanding of the approach to the module and why things are now being done in a novel way. It includes an explanation of the four UP curriculum transformation drivers (and how they are incorporated into the module), methods of assessment in terms of a hybrid learning approach and also, importantly, the implementation of the UN Sustainability Goals by UP in the module.

Students are provided with various assessment opportunities. Online and written semester tests assist students in practising various skills in terms of the required NQF level 6 guidelines by the CHE.

A 'flipped classroom' approach is followed with regard to tutorials. A problem or tutor question that relates to a particular study theme, where students are required to practise inquiry-based learning and follow a critical approach, is posted on clickUP.

Students must follow content and style guidelines (in the form of a legal opinion, for example) and submit their answers online prior to the lecture. A selection of answers is then discussed anonymously in class by the students themselves, and as a group they must decide on the best and most accurate answers. Respect and motivation are key. Students should have respect for themselves, their fellow students (who will inevitably become their colleagues after graduation) and also for their lecturers. Students are motivated by class and group discussions and providing examples that are relevant to their 'life worlds'.

Lecturers also found that a common denominator to student success is the use of music. The right song at the right time can assist students to remember a concept, legal principle or even case law. If students are not concentrating or are frustrated by all the tests and other modules, a great source of motivation (and humorous entertainment) is a karaoke number or even dance-off with Professor Barnard (she is usually at the losing end!). The 'slogan' for the 2018 group for KTH 220 was placed on the last slide of the welcoming narrated PowerPoint presentation: 'One step at a time, there's no need to rush. It's like learning to fly or falling in love. It's gonna happen and it's supposed to happen, that we find the reasons why. One step at a time' (Jordan Sparks – One step at a time – <https://genius.com/Jordin-sparks-one-step-at-a-time-lyrics>).

Making Law of Evidence Evident – Step-by-Step

Dr Willem Gravett of the Department of Procedural Law is responsible for teaching Evidence 300, focusing on the basic principles of the law of evidence and rules relating to the admissibility of specific categories of evidence and evidential aspects relating to the giving of evidence and the constitutional implications for the law of evidence. Law of evidence follows a logical sequence and commences with general principles, followed by trial procedures and rules. Consequently, the methods of evaluating evidence and considering the application of exclusionary rules in context follows.

Dr Gravett incorporates an enhanced hybrid teaching model. A significant number of contact sessions (lectures) are devoted to studying video clips from the Netflix true-crime saga documentary series *The Staircase*. This series follows a criminal trial from its inception to its eventual conclusion some 17 years later, showing a substantial amount of reasonable doubt that resonates with law students.

The challenge of teaching procedural law subjects (Civil Procedure, Criminal Procedure and Law of Evidence) to undergraduate students with virtually no exposure to the practice of law is analogous to the challenge faced by a driving instructor who tries to teach learner drivers to drive a car only from a textbook. Like driving, the substantive law of evidence only makes sense once one experiences it in a practical setting. Watching clips from an actual criminal trial gives students a feel for the 'law in real life'. This provides students with the opportunity to realise that the law is not simply theory in a textbook but involves people whose fates depend in no small measure on the skills of their lawyers. Most importantly, the video material brings abstract theoretical concepts of the law of evidence — relevance, real exhibits, similar fact evidence and opinion evidence to name a few — to life for the students, deepening their insight, comprehension and discernment.



Image source: Amazon.com



Mining safety

A Novel Approach to Sustainable Natural Resource Governance: Spotlight on 'Extractive Industries Law and Policy in Africa' Postgraduate Programmes

According to the World Bank, Africa is home to approximately 30% of the world's mineral reserves, 10% of the world's oil and 8% of the world's natural gas. Yet, while new and exciting resource discoveries promise to transform the socio-economic well-being of many countries on the continent, the realisation of such is often frustrated by ill-suited legal and fiscal frameworks, uncertain national policies, lack of capacity and corruption.

Advocate Leon Gerber, who heads the Extractive Industry Law in Africa suite of programmes hosted by the Department of Public Law, is confident that the future of Africa will markedly depend on its ability to manage its non-renewable natural resources in an effective, equitable and sustainable manner. However, until recently, African universities have had very little capacity in this field, rendering the continent largely dependent on external know-how for the training of its future leaders.

There was thus a patent need to develop advanced, interdisciplinary capacity on African soil – incorporating state-of-the-art international approaches to natural resource governance and regulation, while linking it to the unique circumstances and needs of the continent in terms of educational and research outcomes. Enabled by financial contributions from external donors, the Faculty of Law took the initiative to address this oversight by successfully introducing a specialised LLM in extractive industry law in Africa in 2016. Building on the success of the LLM programme, a second postgraduate degree programme, in the form of an MPhil in extractive industry policy, management and regulation, was introduced in 2018.

As these postgraduate programmes were a first for the continent, it was necessary to adopt a novel pedagogical approach in order to provide for innovative, topical and practical curricula that were suited to the particular challenges of sustainable natural resource development in Africa, and to distinguish them from the few international programmes available. As such, the programmes retain an emphasis on the legal aspects associated with contemporary oil, gas and mineral extraction, but focus on extractive industry governance from an interdisciplinary and pan-Africanist perspective.

The inherent multifaceted nature of extractive industries lends itself exceedingly well to a curriculum that foregoes a traditional black-letter, textbook-based approach. Rather, intra-institutional collaboration with other academic departments allows for induction lectures in earth sciences, economics and policy. In turn, this provides for a holistic narrative of natural resource value chains within which to integrate nuanced discussions related to law and policy. The learning experience is further enhanced through the selective use of modern technology and pedagogic aids, including role-playing, case study analysis and scenario building. Field trips and site visits form a further part of the teaching curriculum of both the LLM and MPhil degrees. This affords candidates exposure outside of the classroom and an opportunity to relate their

theoretical knowledge to its application in practice.

These elements contribute to the conformity of the two curricula with the University of Pretoria's four drivers of curriculum transformation. In addition, the linkages between the United Nations Sustainable Development Goals are mapped throughout the various units, highlighting both the positive and negative impacts of resource extraction on society. Accordingly, throughout the duration of the programmes, candidates are encouraged to expand their studies beyond merely operating within the boundaries of existing challenges, but rather to adopt a critical, solution-based approach in order to be able to contribute to local and global social transformation.

The programmes are further selection-based and limited to a maximum annual intake of 30 candidates. These candidates are selected from across the continent, with the principal selection criteria revolving around their potential to make a lasting contribution to the sustainable development of the extractive industries in Africa. The selection of candidates from various jurisdictions and stakeholder backgrounds (including government, industry, legal practice and civil society), further enriches the knowledge experience of candidates through peer-learning. As many of these candidates are promising career professionals, it is necessary to allow for a flexible learning approach that can successfully accommodate a full-time working environment. This is achieved through a hybrid teaching model that combines intensive, on-campus contact sessions and online learning modules over a period of one year.

The crown jewel of the programmes is undeniably their close collaboration with external partners. Since their inception, the programmes have received unparalleled teaching and technical support from a selection of the most internationally renowned natural resources practitioners, firms and companies in Africa. Participating law

firms include, among others, ENSAfrica, Norton Rose Fulbright, Webber Wentzel, Cliffe Dekker Hofmeyr, Fasken Martineau LLP, Werksmans, Falcon and Hume Inc, Bowmans, and Herbert Smith Freehills. International resource firms, including Randgold Resources, Barrick, Sasol Limited and Kumba Iron Ore, contribute to the teaching element, with Exxaro Resources Ltd and Royal Bafokeng Holdings facilitating site visits. A selection of support service firms and consultancies, including SRK Consulting, Control Risks, EthicsSA, KPMG and JVO Consulting, contribute to cutting-edge curriculum development in their respective fields.

The ultimate aim is to deliver graduates who have a comprehensive and holistic understanding of all relevant aspects of the extractive industries in Africa, equipping them with the knowledge and confidence to take on the toughest challenges with which they will be presented. Advocate Gerber states: 'The professional development of future government officials, legal practitioners, policy-makers and industry specialists, is a critical factor to the successful development of natural resource in Africa and, moreover, in a sustainable manner. The Extractives Industries Programme aims to foster exactly such capacity, by delivering qualified professionals who are contextually sensitised to the multifaceted challenges faced by contemporary extractive sectors on the continent'.

Tailor-made in Africa, for students who work in Africa, the programmes' ambition is nothing short of grooming the next generation of industry and government leaders, those who will be at the vanguard of unlocking the riches of the continent in a way that can change the future of Africa's countries and her people for the best. This new generation of policy-makers, officials and legislators will be thoughtful citizens who appreciate that transformation of the sector must be about human dignity and broad-based economic development, and not about the enrichment of those with narrow, vested interests. They will recognise that the impact of extractive projects ranges far beyond the signed contract, and will be equipped to address governance and implementation that are complex and potentially determinative to the success of such ventures.

New Master's Programme in Disability Rights in Africa Designed with Insight and Innovation



In 2018, the Centre for Human Rights, in collaboration with the Department of Public Law at the Faculty of Law, University of Pretoria, launched a new master's degree programme (LLM/MPhil) in disability rights in Africa, the first of its kind on the African continent. The master's programme focuses on the implementation of disability rights in Africa in line with the Convention on the Rights of Persons with Disabilities (CRPD) and the newly adopted Protocol to the African Charter on Human and Peoples' Rights on the Rights of Persons with Disabilities in Africa (African Protocol). The mission of the programme is '(e)ducating passionate defenders of the rights of persons with disabilities with a deep understanding of the rights of persons with disabilities and providing tools to work towards reasonable accommodation and against discrimination and stigma of persons with disabilities'. The curriculum for the programme was designed in collaboration with the Department for Education Innovation at the University of Pretoria and is an accessible and inclusive curriculum that can be used by learners with various types of disabilities, including visual impairments.

The first set of students for the 2019-2020 academic year were selected in 2018 and are already undertaking their first year of study. The students hail from six African countries: South Africa, Zimbabwe, Lesotho, Swaziland, Kenya and Ghana.

Of these ten students, three have disabilities: one is deaf and two are blind. The materials and resources for the programme were designed to accommodate those students. Technical changes to materials in the programme included the following:

- Word documents were formatted using the programme's style for Normal text, titles and two levels of headings. All images received the formatted figure numbers and captions. An automatic table of contents was generated. The library-generated web links for all articles were added to references in the reading lists. These documents



were then converted to pdf with Adobe Acrobat to preserve the navigation from the table of contents and hyperlinks. Such documents are easily read by the pdf reader or other screen readers, downloaded for offline viewing and printed to paper. Materials were tested on different screen readers before the most suitable formats were implemented.

- clickUP documents were carefully chunked to be easily navigated with a screen reader. In html, headings, figure captions and hyperlink descriptions were used. No text boxes, underlining, or scanned material were used. Folders with pdf documents gained preference over the Learning Module organisation as recommended by Blackboard.
- PowerPoint slideshows for presentation in the orientation week (week 0) were retrofitted into standard PowerPoint slide layouts, taking care to use the title and body, without any extra text boxes, as they cannot be read. Full descriptions for all images were provided in the text area, hidden behind the images themselves, or added in white fonts at the bottom of the body text. The Outline view (linear text) of presentations were then printed to pdf and linked in clickUP for screen readers.

In this venture, many resources and principles informed the design decisions, and these include:

- published guides from Blackboard, Turnitin and international organisations for education of students with disabilities were implemented;
- valuable guidelines obtained from Mr Juan Erwee from the Disability unit, who also tested designed materials; and
- continuous conversations and feedback from the students, and watching them during week-0 lectures, which informed further changes.

The students had their first contact session from 10 to 14 December 2018 when they attended an intensive and detailed orientation week known as week 0 at the Centre for Human Rights, University of Pretoria. The purpose of week 0 was to introduce the students to various aspects of the programme, in particular the online tools that they would use throughout the duration of the programme.

Offered over a period of two years, the programme uses a hybrid teaching approach comprising online interaction and residential contact weeks at the University of Pretoria.

This new master's programme is expected to produce African graduates equipped with the requisite knowledge and skills needed to implement and enforce the rights of persons with disabilities in Africa in accordance with the CRPD and the African Protocol through advocacy, litigation, scholarship, legislation and policy. The graduates are expected to use the knowledge and skills gained in this programme to ensure that all persons with disabilities in their respective countries enjoy their human rights and fundamental freedoms on an equal basis with others.

Faculty of Natural and Agricultural Sciences

Registration
7 028

Success rate
74,1%

Graduation
1 458

Developing Academics as Teachers

Despite the fact that teaching forms an integral part of the responsibilities of academics, very few have formal training in pedagogy or teaching practice. Tertiary education worldwide is facing rapid changes in teaching technologies and instructional approaches, which necessitates the professional development of academics, now perhaps more than ever before.

With this in mind, Professor Marietjie Potgieter, Deputy Dean: Teaching and Learning, and Dr Ina Louw, the education consultant for the faculty, launched a campaign for the development of academics as teachers. The campaign consisted of three initiatives: a series of brown bag lunch events for lecturers, called FLY@NAS; continuing professional development (CPD) sessions provided by Ina Louw; and the formalisation of CPD as an expectation in the performance management procedures of the faculty.

The themes of the FLY@NAS sessions during the first semester of 2018 focused on aspects of neuroscience – how people think and learn (the make-up of our cognitive architecture), what motivates students, and how students' beliefs about their mental capacity influence their approach to learning. Ms Jacomien Muller and Ms Ruth Liprini from the Department of Psychology presented

sessions on 'Cognitive psychology in the classroom' and 'Motivation', respectively, and Dr Louw presented a session on the 'Growth mindset' as a conclusion to this theme. The topics of the second semester centred on teaching practice. Professor Nithaya Chetty from the Department of Physics elaborated on how he motivates

students to engage with the very challenging topic of quantum mechanics, while Professor Michael Van der Laan and Dr Adrian Shrader shared their successes with innovative project work, which stimulated student engagement and learning, and results far exceeded their expectations. Professor Marietjie



Potgieter concluded the series with a presentation on 'Lessons learnt from online teaching and learning during the disruptions in 2016'.

CPD events were tailor-made based on the observations of the education consultant during class visits. She presented sessions on 'The art and science of presenting a lecture', 'The growth mindset and learning', and 'How learning works', based on a book with the same title (see reference below). In these sessions, Dr Louw shared the seven research-based principles on how learning works. Participants enjoyed the interaction and learned with and from one another.

Reference

Ambrose, SA, Bridges, MW, DiPietro, M, Lovett, MC and Norman, MK. (2010). *How learning works: Seven research-based principles for smart teaching*. San Francisco: Jossey-Bass.



Award-Winning Lecturers

One focus of the UP academic plan is on recognising and rewarding good teaching. It is a way of motivating not only the individuals honoured but also their colleagues. Involving lecturers in professional development of their peers through sharing their stories is one way, as demonstrated above; actual awards is another way.

Two of the departments in the faculty annually present teaching awards based on nominations by peers. The Department of Mathematics and Applied Mathematics presents two awards: Dr Mike Chapwanya was acknowledged for Excellence in Teaching and his nominator wrote how impressed she was during a visit to his class with his calm style of teaching. She said: 'Michael is an unassuming person who goes about his task without drawing the attention of many other staff members, and he teaches modules that are not necessarily in the spotlight. His use of the tablet PC was impressive'. The department also acknowledged Mr Gideon Brits, a mathematics lecturer in the extended programme on the Mamelodi Campus, for Adding Value to Teaching. His nominator referred to the consistently positive feedback he receives from students and said: 'He really cares – for the extended degree programme he really is the best'.

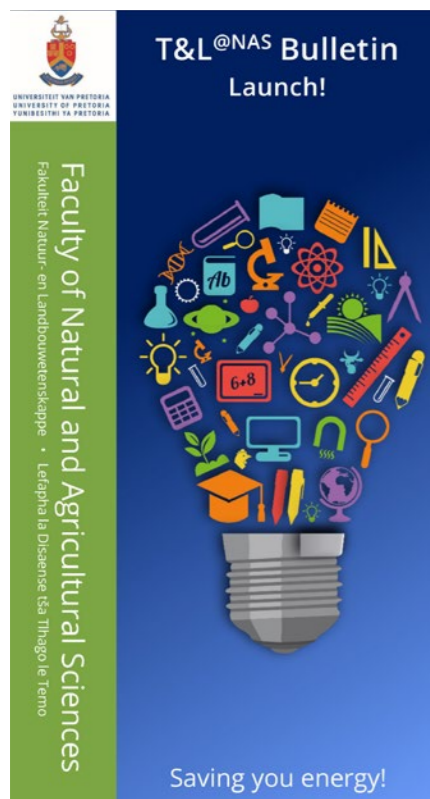
In the Department of Statistics, Dr Johan Ferreira won the Excellence in Teaching Award based on innovation in class as well as the online environment, the consistently high scores he receives from student feedback and the caring manner in which he facilitates learning in a difficult module.

Undergraduate students in the faculty also boldly express their views on teaching excellence. The Executive Committee of NATHouse, the undergraduate student house for the faculty, awarded two prizes in 2018, one for the best first-year lecturer and one for the best lecturer for senior courses. NATHouse conducts the nominations and motivates students to vote. The votes are then weighted to accommodate class size difference. Dr Harry Wiggins from Mathematics and Applied Mathematics won the first-year lecturer award. In his nomination, two students wrote: 'The first thing I learned about Dr Wiggins was his absolute passion for mathematics'; 'He has never been late for a single lecture and has always been very well prepared for every lecture'. Dr Jaco Visagie from Statistics won the senior lecturer award and some of the students said: 'He teaches with passion and patience'; 'His enthusiasm and patience always make me try to work harder and study more efficiently' and 'He is motivational, and he inspires a lot of students to strive for the best at all times'.

T&L@NAS Bulletin Launched

The faculty has a well-established newsletter, *SQUARED² UP*, which is published three times a year and deals mostly with research achievements. It became essential to have a bulletin that focused on teaching and learning, specifically to build capacity for innovative teaching practices. The first *T&L@NAS Bulletin* was launched on 1 August 2018 and subsequent issues will be published twice annually.

The *T&L@NAS Bulletin* is the brainchild of Dr Rory Biggs from the Department of



T&L@NAS Bulletin

Mathematics and Applied Mathematics and Dr Ina Louw, our education consultant. The *Bulletin* contains short stories on new 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 *Bulletin* was met with great excitement not only in the Faculty of Natural and Agricultural Sciences, but also in other faculties. The first issue has demonstrated its value in showcasing and celebrating the enthusiasm of lecturers who go the extra mile to improve their practice.

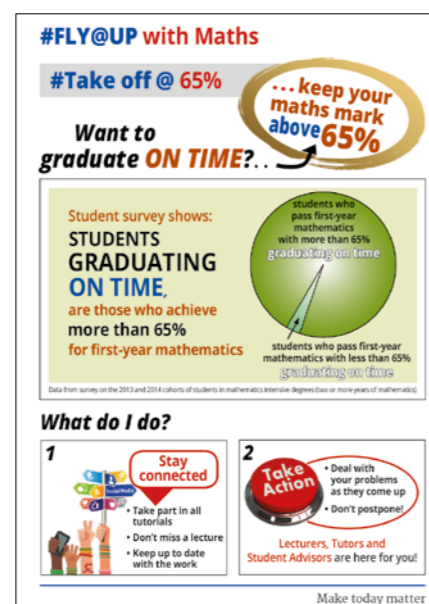
Guided Pathways to Mathematics Success

In terms of teaching and learning, poor student performance in mathematics presents the biggest challenge in the Faculty of Natural and Agricultural Sciences. This is a national phenomenon that stems from endemic problems in the secondary education sector. As part of a data-based approach to student success, the internal statistics consultation

service, Statomet, was tasked with building prediction models to aid with the classification of students as at high risk of failing, borderline or likely to pass in first and second year mathematics courses.

The statistical techniques CHAID analysis and multinomial logistic regression, were used for the modelling of a categorical dependent variable (e.g. students classified as either at high risk of failing, borderline, or likely to pass). Independent variables / predictors were selected to explore the influence of the first-year modules and, where applicable, the prerequisite second-year modules, as well as relevant demographic variables.

Performance in five second-year modules was modelled for the three years 2014 to 2016, using as predictors the marks of students in their prerequisite first-year modules during the period 2011 to 2015. For the second-semester modules WTW 221 and WTW 248, the marks of the first semester modules were added to the model. Additional predictors included in the analyses were the students' Grade 12 Mathematics mark, gender and whether their preferred language of instruction corresponded with their mother tongue.



Infograph Maths Pathways

support and consultation opportunities that are available.

Innovative Teaching – Short Video Tutorials

During the past year, lecturers in the Department of Mathematics and Applied Mathematics have experimented with many interventions to improve student performance. One set of interventions provides audio-visual material that can be accessed online by students in their own time and viewed repeatedly to ensure comprehension.

Dr Eder Kikianty reports as follows on the use of short video tutorials: 'I love watching video tutorials to learn something new. The ability to pause, rewind, stop and play a recorded video helps to replay important points. One cannot miss something, as long as one has the time to go back and replay. After having some success with recorded lectures during the disruptions in 2016, I felt challenged to make recorded lectures work better. The answer is clear: short, "bite-size" video tutorials'.

Statistical modelling indicated which first-year modules were the most relevant predictors for student performance in second-year modules. Most importantly, the analysis revealed that a mark of 65% for WTW 114 is required for students in mathematics-intensive degree programmes to have a high probability of graduating on time. Based on the results of predictive modelling, the Department of Mathematics and Applied Mathematics embarked on an extensive curriculum advising campaign to inform students on pathways to success. Two faculty student advisors were posted in the department to assist with this task. The department developed an infograph with the slogan #Take off @ 65% to drive the message home. Students who want to graduate on time are being advised to engage in all course activities, address problems as they arise and make good use of the



Dr Eder Kikianty and her students

She explains: 'These videos are intended to complement the (scheduled) lectures. The students are not obliged to watch these videos as part of the course, but they may gain something from them. My video tutorials cover proofs of theorems and challenging examples. Students can always replay a section that might not have been clear at first; consequently, they cannot miss an important part of an argument or proof. The length of a video is (typically) not more than 15 minutes'.

Dr Kikianty uses the Doceri app on iOS to record these videos (a paid version of the app is also available for Windows tablets). Doceri is a professional, interactive whiteboard tablet app with sophisticated tools for hand-drawn graphics and built-in remote desktop control. According to Dr Kikianty, 'this app was originally designed for teachers, and is used by creative individuals in a myriad of roles and professions, from education to entertainment. To record a video, it is a simple act of tapping the record button.

Enrichment Activities for the Top Achievers

Dr Kikianty also initiated the Undergraduate Seminar Series as an enrichment activity for undergraduate students. Adriaan de Clercq, a second-year BSc (Mathematics) student, presented four lectures in a reading seminar on the book *An introduction to the theory of numbers* by GH Hardy and EM Wright (Oxford University Press) in the second semester of 2018, and he is planning to continue in 2019.

In another enrichment initiative, six teams of students from UP competed in the South African Mathematical Modelling Contest (SAMMC) from 12 to 15 July 2018. This contest is a four-day competition where students work in small teams to solve one of three given mathematical modelling challenges, culminating in a short written report. The SAMMC was a mock competition to prepare students for the Consortium of Mathematics and Its Applications (COMAP) Mathematical / Interdisciplinary Contest in Modelling (MCM/ICM) in January 2019. The MCM/ICM is an annual international competition in which students participate from remote locations anywhere in the world.

Two teams from UP completed the SAMMC competition successfully:

Adriaan de Clercq, Janco Krause, and Tatiana Blecher (who won second place)

Boikhutso Ramanyane, Kevin Kamukapa and Kristen Smith

Both teams were thus eligible to participate in MCM/ICM 2019 from 25 to 29 January 2019.

One needs to use the built-in microphone to record one's voice and a stylus to write. In the video, the students are able to see my handwriting on the 'blackboard' and hear my voice narrating over it. A number of students have commented that the videos are helpful. They have also requested me to provide more videos'.

The self-regulated learning opportunity offered by these videos complements the structured work in face-to-face interventions such as lectures.

Learning Community for Mathematics Repeaters

During the second semester of 2018, Dr Mpho Mmadi, one of the student advisors in the faculty, initiated a learning community for senior students to assist specifically those who 'disappear' in the system. Interventions aimed at the improvement of student performance are typically focused on first-year students to the neglect of senior students who are reasonably close to completion, but became stuck because of repeated failures. Dr Mmadi identified a group of 15 senior students registered for BSc (Mathematics) facing similar challenges of having been in the system for too long, being academically exhausted and demotivated, having been readmitted several times after exclusion or dismissal, and facing final dismissal or drop-out owing to financial or social pressures. He invited them to form a learning community with the singular aim of completion of their studies, thereby avoiding the inevitable outcome of exit after five or six years without a qualification.



Dr Mpho Mmadi and graduates

Dr Mmadi formed a WhatsApp group to motivate and monitor persistence and demanded compulsory attendance of special tutorial sessions before important semester tests. He held group meetings twice a month and individual meetings as demanded by the socio-economic and psychological status of the students. He reports as follows: 'The WhatsApp group was a very useful tool for communication purposes and keeping in touch as a group. I was in charge of the activities and regulated what could be posted. I made it clear that group chat was strictly for academic purposes and nothing else. In addition, we ran what I call a "show me your study table" campaign in which students were required to post a picture of their study table and explain what it was that they were studying on a daily basis. This was done in order to keep motivation and morale of the group high. I monitored participation levels and called out students whose participation was not up to par and made them aware that their non-participation could affect the performance of the whole group. We have made great strides; I recently found out that two of our students would graduate this year. I was so happy I could cry!'

Workplace Readiness for the Hospitality Industry

The hospitality industry is a fast-paced, highly energetic and very often stressful environment. To meet the industry's needs for employees who would not only be able to cope well, but make a valuable contribution and help it grow and develop, the University of Pretoria's Department of Consumer and Food Sciences aims to teach and produce successful graduates in the BConSci (Hospitality Management) degree. This is done by combining a theoretical grounding and critical thinking with practical skills and application of knowledge.

Even though working in hospitality is challenging, it is also an engaging and rewarding field of work. Hours are very long, remuneration is often limited, and employees are often expected to perform in working conditions that are less than ideal. But camaraderie, sharing, travel opportunities and living out a passion are most often enough reason to endure. Workplace readiness in this context is therefore embedded in the programme.

The event management component, which forms part of the fourth-year Culinary Arts subject, exposes students to real-world work situations to hone their work readiness. Since the ability to work with others is a core graduate attribute, students are mostly required to perform such duties in groups where they learn to fulfil different roles such as managing and instructing fellow students, but also taking instruction from fellow students and working towards a unified goal. They often get the opportunity to do 'on-the-spot' problem solving in a real-world set-up, which is invaluable to prepare them for the world of work.

The department receives requests from industry for suitable graduates early every year. Graduating students therefore start applying for positions from the second term of their final year. The department endeavours to guide and advise them on important considerations such as working



Workplace Readiness

conditions, contractual loop-holes, salary and other benefit expectations and the negotiation process.

Data-informed Decision-making

Data-driven educational decision-making refers to the process whereby educators use data to inform their instructional design or to make difficult choices about the effective application of scarce resources. Traditionally, the focus of the majority of interventions is students at risk of failing their first academic year. However, there is a different group of students who often go unnoticed, the so-called 'murky middle' (MM), who drop out later in their studies. The term MM was coined by the Student Success Collaborative in the USA in a large-scale study of student performance. These students comprise approximately half the number of total drop-outs from higher education. They represent an ideal group to target for interventions, as small academic gains can have a big impact on their success; however, very little is known about the MM and the factors that influence their performance.

In her PhD study, Ms Angelique Kritzinger explored student academic behaviours and engagement in blended learning course, MLB 111, using the MM as a lens. The analysis of learning strategies showed that the MM lacked metacognitive self-regulation skills as well as effort regulation

when compared to successful students. Their participation in learning activities in MLB 111 declined during the course of the semester and their performance suffered too. The holistic analysis of student engagement in all learning opportunities in MLB 111 showed that online formative assessments and face-to-face tutorial classes contributed the most to student success, thereby validating the blended course design. Students' uptake of voluntary activities such as virtual classrooms and pre-reading was poor. The findings of this study will enable lecturers to improve their offering by removing extra load and optimising resources.

A chi-square automatic interaction detection (CHAID) analyses was performed in this study. If success in the examination is used as an outcome variable, the CHAID analyses show that participation and performance in the tutorial classes is the best predictor of success with students. This is followed by performance on the online quizzes. Four distinct groups can be distinguished:

- Students who scored more than 91% for the tutorials had a 97% chance of passing the examination.
- Students who scored between 86% and 91% had on average a 76% chance of passing the examination. These students increased their chances of passing the final examination to 92% by participation in the Connect online quizzes and achieving a mark of 87% or higher for them. However, for this same group, the likelihood of passing the examination dropped to 66% if they scored below 87% for the Connect quizzes.
- Students who obtained between 82% and 86% for the tutorials had a likelihood of 49% of passing the examination. However, they increased their likelihood of passing the examination to 65% if they scored above 81% for the Connect quizzes, and decreased their likelihood to 33% if they did not achieve 81% for the Connect quizzes.
- The likelihood of students passing the examination if they had below 82% for their tutorials was 23%. Their likelihood of passing increased to 37% if they also participated in the Connect quizzes and scored more than 81%, but dropped to 17% if they achieved less than 81% for the Connect quizzes.

Data analysis has the potential to enable holistic analyses of courses or degrees. Additionally, using a lens such as the MM could provide different role players within the institutions with evidence to allocate restricted resources in a manner that would have the biggest impact and make a difference in student success and throughput rates.

Faculty of Theology and Religion



Registration
598

Success rate
83,3%

Graduation
176

Curriculum transformation is an ongoing activity in higher education. It is necessitated by changes in knowledge, skills and approaches within the discipline; advances in learning science; national legislation (e.g. NQF Act 67 of 2008); educational context (e.g. #FeesMustFall and calls for decolonisation); advances in understanding student success; the scholarship of teaching and learning; and, nowadays, technology. For all these reasons, curriculum was a major focus in the faculty in 2018.

Involving All Stakeholders in Curriculum Transformation

In 2018 the faculty focused on restructuring its curricula focusing on the four drivers of responsiveness to social context, epistemological diversity, renewal of pedagogy and classroom practices, and an institutional culture of openness and critical reflection. Specific aspects of the curriculum that received attention were:

- optimising the first year of the BDiv programme;
- focus on inclusivity, social cohesion and experiential learning in class context;
- one language of tuition;
- opening up the possibility of a second career;
- transformation of the curriculum in terms of content and blended learning;
- the need to determine exit levels that differentiated between similar content offered in the three undergraduate programmes; and
- broader access for students from the Centre for Contextual Ministry into the DipTheol.

The process of restructuring the curricula during 2018 culminated in a full-day meeting of all staff, invited students and tutors, and invited partners of the faculty. During this meeting, a final proposal was drawn up and is now in the process of being implemented for 2021.

In preparation for this meeting, three half-day meetings (25 March 2018, 17 August 2018 and 24 August 2018) took place attended by heads of department and members of the Faculty Committee for Teaching and Learning. During these sessions, aspects such the impact that the amalgamation of departments would have on new, proposed curricula were discussed.

Apart from 12 September, full-day meetings also took place on 3 to 4 April 2018, 27 July 2018, and 7 August 2018. Discussions and planning during these meetings enabled the faculty to come up with new curricula on 12 September 2018.

In 2018 three lecturers were awarded for their contributions in already having transformed specific modules in their teaching. From the content of these modules, it has become evident that in many cases the restructuring of the faculty's curricula is already in progress.

All academics were personally involved in deliberations and therefore on the same page about what constitutes a transformed curriculum in the faculty including the best ways to teach it.

Data-based Decision-making: The Study Guide Project

Study guides are an important component of curriculum delivery. In 2017, the Teaching and Learning Committee proposed that the education consultant, Ms Carol Gossman, pilot study guide evaluation starting with first-year guides. In 2018, the project was extended to all the years within the three undergraduate programmes – DipTheo (ID 6887), BTheol (ID 12113) and BDiv (ID 15762).

A phased approach was taken. First, the purpose and outcomes of each module within the three undergraduate programmes (as stated within the study guides) were mapped to determine the alignment between the programme and the actual modules. A comprehensive document emerged. Second, the standardised checklist for the evaluation of study guides was used to evaluate each guide. The checklist was developed by the Education Consultancy unit in the Department for Education Innovation (EI).

The findings fell into comments on the organisational component and the study component. In terms of organisation, most study guides had:

- an introduction or word of welcome;
- administrative information and contact details (In some instances, information on use of clickUP and modes of communication were lacking. The former is particularly important for the hybrid approach, particularly as all undergraduate theology and religion modules have active online elements.);
- information on study material;
- rules, requirements and guidelines (In some cases, the rules pertaining to the specific module were not spelt out. A challenge in some study guides was a section approach instead of a module approach.);
- assessment structure and information; and
- a credit map with the distribution of notional hours among various learning activities. (From the distribution of credits within the module(s), it was evident that the interpretation of credits and levels needed to be addressed.)

In terms of the study component, strengths and weaknesses also emerged:

- Most study guides had a purpose and outcomes, but not always aligned to the module structure.
- In most instances, no levels were indicated.
- Some modules appeared to have too much content that needed to be covered given the credits (and thus time) available.
- In most instances, the outcomes and assessment were not aligned. Constructive alignment of outcomes, activities and assessment is a key concept shared with academics during training interventions by Education Innovation.

Although most of the criteria under the study component were addressed, it was suggested that the faculty have a few practical sessions on the following:

- Alignment between programme and modules within the programme, using the SAQA registration document as the basis;
- Developing an assessment plan (alignment between outcomes, teaching and assessment);
- Interpretation of credits and levels.

The way forward includes:

- adapting the curriculum for implementation in 2021 (The education consultant is available to assist with practical discussion sessions within disciplines (departments) to ensure fast and effective progress.); and
- assistance from the staff of EI with study guides (education consultant) and using clickUP more effectively to facilitate learning (instructional designer).

This research project aligned to the data-based decision-making agenda of the University.

Rehabilitating a Core First-year Module through Reflective Practice

How does one transform a module to focus on the right knowledge and skills, apply sound teaching and learning theory and improve student success? This story is about the fate of one module between 2016 and 2018 that improved the student success rate from 61,1% in 2015 to 78,5% in 2018. It involved curriculum transformation focusing on the constructive alignment of outcomes, activities and assessment; aligning content and activities to the NQF level; the appointment of a peer tutor for student support and development; clear communication of core issues such as the department's policy not to repeat examination questions; and a consistent approach by lecturers who remained constant over the years.

One department inherited a module, NTW 120/120/222, with a final student success average of 61,1% at the end of 2015. After several years of a very low overall pass rate for NTW 120/120/222, the Department of New Testament and Related Literature decided to task Drs Zoro Dube and Hanré Janse van Rensburg to lecture the module in 2016.



Dr Zoro Dube

When they reflected on the module, they realised that there were several reasons for its poor overall pass rate, three of which are discussed below.

Firstly, it was a module with very convoluted content. Students were expected to master four different topics during one semester – three of which could actually be whole-semester courses on their own. Not only that, but students were expected to study one of the four topics independently – one of the more difficult topics in New Testament and theology in general (difficult even for students in more advanced years). Although independent

study is a wonderful tool that should definitely be used for university-level students as we prepare them for the workplace or future study, the lecturers realised that it was not an ideal tool for use with students in their first year of study. As research over the years has shown ever more clearly, we cannot assume that all first-year students coming into the University have the same background in terms of educational and other means. Even for students who did have the best resources available, the jump from high school to university can be a jarring one. Because of this reality, lecturers in the faculty now try and design their first-year modules in such a way as to ease students from all backgrounds into how university works and what is expected of them. This approach does not imply that they try to make modules easier, just that they structure them into more of a guided process. It was clear to Drs Dube and Janse van Rensburg that such a demand – expecting first-year students to study a whole difficult section completely on their own and have that as their main mark in their examination – was unfair and did not provide all students with an equal opportunity to demonstrate their knowledge and skills.

Secondly, there was lack of alignment between outcomes, activities and assessment that was far from ideal for a student at first-year level. Students started the module off with a very important topic that serves as an introduction and basis to several other topics further in their studies. Yet students had only one class on this topic as their very first lecture of the semester, and were only assessed on it at the end of the semester, in their examination – a very long time in any student's life, especially for students in their first year. The two topics that followed were divided so that each took a quarter of the semester, but students were only assessed on these topics by way of one assignment. These topics did not feature again in their examinations, which left many students asking the question, 'If all of this work is only assessed in one assignment, what am I spending all this time on it for?' – one of students' favourite questions, in the experience of the lecturers. Then, of course, there was the fourth topic – a difficult one even when taught in class – for which the students only received a textbook, but which comprised most of their examination. As mentioned before, there was only one other topic being assessed, the first topic they discussed in the semester, which was also the smallest of all the topics.

Thirdly, during that year, the New Testament was also experiencing changes and shifts where its academic personnel were concerned, which meant that three different

lecturers were involved in the teaching of this one module – the module was divided between two different lecturers for the English class and one lecturer for the Afrikaans class. All of these lecturers had varying levels of skills in terms of the use of clickUP, and had their own preferences in terms of teaching and evaluation. The effect of this was a general sense of instability – especially for the English class, that had to try and master the content as well as having to adjust to different lecturers and their ways of teaching and communication.

It was clear that some work was needed. As often happens in situations such as these, adjusting the module to achieve its current success was a process that had different phases and took place over three years, starting in 2016. It was marked by successes and learning opportunities.

In 2016, it was decided that only two lecturers would teach the module – one the English and one the Afrikaans class. Both of these lecturers were now permanent academic staff, of whom competencies in terms of clickUP could thus be expected. It was also decided that the two lecturers would work as one in terms of the content taught and, especially, communication with students. But the content of the module remained the same as, in the planning for the year, no other space could be found in which to place the very important fourth topic. The assessment structure also remained the same, though the lecturers did attempt to make the assignments the students had to do a bit more practical / contextual. Of course, 2016 was a year of tensions and disruptions at the University, which meant lecturers were unable to teach students face-to-face for a whole quarter of the semester. It also meant that assessments had to be adjusted. The improvements that the lecturers did manage to effect led to an improved overall average of 63,85% for the year, a definite win considering the circumstances. But they knew that more still had to be done.

In 2017, the same two lecturers took on the module again. This meant that a continuity that had been missing before was now being established. As these lecturers had worked on the module together the previous year, the process flowed much more easily in terms of preparation, presentation and communication – issues that are so important to have exactly the same between classes, in order to ensure that every student has equal access and equal opportunity. Changes were

made to the content and assessment in the module. It was decided to move the fourth topic – the one normally done via independent study – to a module in the second year that had capacity, meaning that the topic could actually be taught in class. In order to further the faculty's philosophy of helping first-year students adjust to the demands that university makes, the way the module was assessed was also changed. All topics taught in the module would now formed part of the examination, thus bypassing the 'Why am I spending so much time on this?' question. On each of the two larger topics, the students had an assignment as well. Drs Dube and Janse van Rensburg attempted to make assignments even more practical by working in more of the African context as one of the aspects to which they had to pay attention. In order to help students to prepare for the examination at the end of the semester, they had small MCQ tests throughout the semester with which different sections of each topic were concluded. Although students could have their textbooks in front of them for these tests, they had to work through the content beforehand to know where to find the answers, and they had to look at the work again when completing the tests. This meant that they had already worked through the potential content of the examination at least three times (lectures included), thus helping them to be more prepared for the examination.

Unfortunately, there were two major problems in that year. Firstly, many students were not comfortable asking questions of lecturers, even with their open-door policy. It seemed that they were more comfortable asking their peers, which was not always a good thing, and which indirectly led to the biggest problem that year – students listened to unfounded rumours from older students, who said that the department repeats examinations. This misinformation led to students taking previous examination papers and preparing only those answers for the examination. Of course, none of these questions were in the examination, as the department is very strict about not repeating questions in examinations, and a large number of students failed. Secondly, and more unfortunately, was that even after intense communication from lecturers regarding the department's policy of never repeating examinations, students who had to do the supplementary paper prepared for those questions asked in the first examination paper only. The result was a shocking overall average of 57,6%.

One great result of this *annus horribilis* was that the module was given a tutor for 2018. In terms of lecturers, module content and forms of assessment, things remained as they were the year before. However, lecturers focused on communicating the departmental policy on examinations from the very beginning. Having an official tutor who attended the first-year classes and ensured that he knew exactly what was going on in both classes and what was expected of the first-year students, meant that they now had a peer to whom they could turn with topics about which they were not comfortable asking lecturers. An added bonus was that this was a peer who was communicating the correct information to them. Having a tutor also meant the students had another session each week in which they could go over the knowledge and skills taught in class. All of these things together – along with warnings from the first-year students of 2017 about how difficult the module was – meant that the students ended 2018 with an overall average of 78,5%, an improvement of which the lecturers were immensely proud.

The faculty intends improving matters even more in 2019 by having only one lecturer take responsibility for the module.

In this, the story of one module's rehabilitation, the lecturers hope to demonstrate that reflective teaching practitioners can apply their minds to analyse at-risk modules, correctly identify problems and then work on interventions that can turn those modules around – even though the process can take several years. Teachers never stop evaluating, growing and changing, which makes the seemingly impossible possible.

Blackboard Collaborate Ultra (BCU) with Millennials

Delivery is an integral part of the curriculum. At UP, the hybrid approach is advocated, meaning that face-to-face and technology-enhanced delivery methods are promoted. Blackboard Collaborate is an online, synchronous collaborative learning tool, the aim of which is to engage students more. One advantage is that the interaction can also be recorded and posted in the learning management system for students who did not attend the session to view it or for those who did to review it.

During the past two years, Professor Sias Meyer attempted to use BCU on at least two occasions per semester. There were positive and negative aspects. One major positive aspect was that certain students engaged more in BCU than they would in a normal class. This was especially true of the first-year group, which was a group of about 95 in 2018. The Afrikaans class comprised fewer than 20 students and the English class comprised about 70. In the English class, there was always a small group of about a dozen students who participated freely. They used BCU in the penultimate week of the semester, and by that time the lecturer knew the names of those participating in the live classes. Professor Meyer comments: 'It was strange to see that a handful of students who never participated in class now found the courage to type their questions in BCU and contribute to the debate'.

He is unable to explain this phenomenon. In BCU, students are not anonymous. If they login through clickUP, their names and initials are there for everybody to see. If they follow the guest link, which he usually also provides, they must create their own names. Still, the ones who started to participate last year displayed their names in clickUP. Professor Meyer postulates that for many students it is more daunting to stand up in a live class and attempt a question in a second or third language while everybody is listening to them. In BCU, you can type your question, proofread it, and then press 'send', which is not much different from sending a WhatsApp message. Second-language users might not be able to formulate questions quickly enough in a class environment, but in BCU they have time to think and articulate their thoughts. It might also be that BCU helps a certain group of students who are simply too self-conscious to participate in class to contribute in a medium with which they are more at home, namely a small screen.

The negatives of BCU usually entail things such as bad Internet connections and students who struggle to find their way in clickUP. The latter challenge can be mitigated with more practice, but the former is unfortunately the reality in which we live. BCU is also not really as 'live' as normal class, since communication is via the medium of a computer or smart device. Yet, for some students, this latter aspect might actually be what they appreciate most.

Professor Meyer plans to use BCU twice per module in the first semester in 2019. He is interested to see whether his experience of 2018 was just a once-off experience or not.

Faculty of Veterinary Science

Registration
1 595

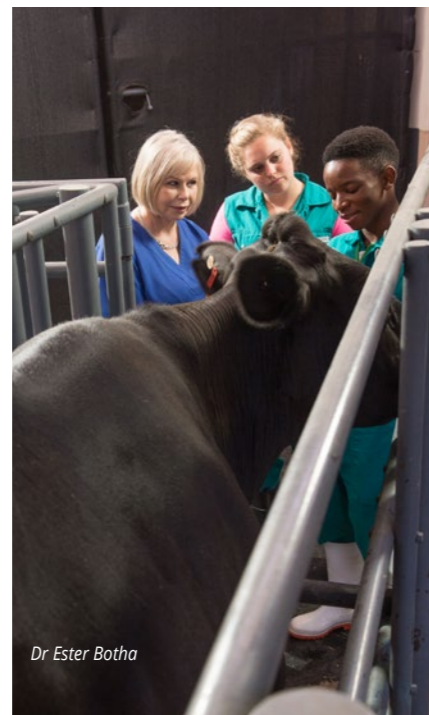
Success rate
97,9%

Graduation
324

A Celebration of 40 Years of Veterinary Nursing Education

During 2018, the Faculty of Veterinary Science and the Veterinary Nurses Association of South Africa celebrated 40 years of veterinary education and 40 years of the profession in the country. The faculty, being the only one of its kind in South Africa and the only faculty in Africa that provides veterinary nursing education, started with the diploma course in veterinary nursing in 1977, with the first class graduating in 1978. The last intake of students into the diploma course happened in 2018, because the course is to be replaced by a three-year degree programme in 2019. From 1978 until 2018, a total of 1 077 veterinary nurses graduated from the University of Pretoria.

South Africa was one of the first countries in the world to start an official training programme for veterinary nurses, with a history dating back to 1946 when Professor Christian Hofmeyr, later Dean of the Faculty of Veterinary Science, started to employ medical sisters in his private veterinary practice to assist with the care of patients. In 1958, Professor Hofmeyr became the head of what was then the Department of Surgery at the faculty and successfully motivated in 1962 for the employment of medical sisters in the Onderstepoort Veterinary Academic Hospital, where today 28 veterinary sisters are employed.



Dr Ester Botha

Following this, it was soon realised that more specific training was required for veterinary nurses, and plans were made to draft a veterinary nursing curriculum for the University of Pretoria. Parallel to these developments, regulations for registration of veterinary nurses under the Veterinary Act were gazetted in 1973. The first 30 students were admitted in 1977, and for the following 16 years approximately 20 all-female veterinary nurses graduated every year. In 1995, the intake of students was increased to 36, and male students were allowed to be considered for selection for the first time. The intake of students was again increased to 48 in 2008 and, in 2018, the last year of intake into the two-year diploma course, 59 students were admitted, while a record number of 51 students graduated with a diploma in veterinary nursing.

Dr Ester Botha, a veterinary sister who qualified with the very first class in 1978, and who is now employed in an academic position at the Faculty of Veterinary Science, became the first veterinary sister to qualify with a PhD degree in South Africa in 2017.

Dr Botha also received an education innovation award from the University of Pretoria in 2012 for her excellent work in educating the new generation of veterinary nurses. The need for access to postgraduate programmes was the major motivation behind the change from a two-year diploma to a three-year degree programme, a process that took more than a decade to result in implementation in 2019.

Selection into the veterinary nursing programme of the University of Pretoria is competitive owing to the limited number of spaces available and the popularity of the programme. Veterinary nurses are highly sought after, with mostly veterinary hospitals and clinics employing them, although the demand is increasing among government departments and industry.



The Mix Matters Workshop

In line with the University of Pretoria's hybrid teaching model, the Deputy Dean: Teaching and Learning in the Faculty of Veterinary Science, Professor Dietmar Holm, requested the education consultant and instructional designer from the Department for Education Innovation to present a workshop to empower academics to implement the hybrid model in their own teaching.

A campaign to make the students aware of this model and how it would impact their learning was run through posters on all campuses indicating that 'The learning mix matters'. This campaign was the inspiration for the name of a workshop to inform lecturers from the Faculty of Veterinary Science that 'The teaching mix matters' and therefore 'The Mix Matters Workshop: Set up your hybrid teaching' was born.

This four-day workshop was designed to support academic staff from the Faculty of Veterinary Science with the following:

- Alignment of the content to the outcomes of the module
- Technology and a hybrid / blended learning approach
- Open education resources (OER)
- Valid, reliable and fair assessment and constructive alignment;
- Different teaching and learning methodologies, including inquiry-based learning

The workshop sessions aimed at providing staff with a deep understanding of the complexities involved in the revision and quality assurance of their courses. It provided them with some of the necessary skills to plan and design new courseware. At the end of the workshop, participants left with a detailed course and assessment plan, while some materials were also developed with a view to using them in their teaching practice and, if applicable, making them available as OER.

The workshop was initially presented in 2016 and 2017. Based on the feedback from attendees, a condensed four-day workshop was presented at Onderstepoort in October 2018. The workshop was attended by 14 academic staff members in 2018, and a total of 59 academics have attended the workshop since 2016. The workshop was facilitated by Dr El-Marie Mostert and Dr Marius Pienaar.



In a practise-what-you-preach approach, the workshop design focused strictly on the hybrid model, using face-to-face sessions combined with online activities in clickUP, the learning management system (LMS) of the University of Pretoria. The purpose of this approach was to provide the lecturers with the opportunity to experience the benefits of a hybrid training course as a recipient. Experiencing the hybrid model themselves in the way the workshop was presented also made them aware of the challenges they may experience in their own hybrid teaching endeavours. They were also made aware of the support provided by the Department for Education Innovation in the planning and development of their hybrid teaching and learning resources and activities.

Participants provided very positive feedback after the workshop.

World Leader in Veterinary Education

Dr Annett Annandale was born in Neindorf, Germany. She obtained her MedVet from the University of Leipzig and later her DrMetVet from the VetSuisse Faculty of the University of Zurich in Switzerland. She moved to South Africa in 2004 and entered a residency in theriogenology (animal reproduction) in the Onderstepoort Veterinary Academic Hospital to become a Diplomate of the American College of Theriogenologists (ACT) in 2007, and obtained her MSc from the UP Faculty of Veterinary Science in 2010. While maintaining her clinical skills in her specialist discipline, Dr Annandale took the position of manager of the then brand new Skills Laboratory at the same faculty in November 2014, from where she very quickly established herself as an educational expert in clinical skills training and particularly in model development and validation.

Dr Annandale was instrumental in establishing a unique business relationship between Anatomoulds and the University of Pretoria, combined with a community engagement project employing and empowering people from less privileged communities around Pretoria.



Dr Annett Annandale with some models in the Skills Laboratory



Students conducting procedures in the Skills Laboratory with models

Her research in this theme includes a focus on maintaining physical wellness of veterinarians who perform many rectal palpations, and training students in ways to protect themselves against injuries for a long and productive professional career.

Dr Annandale has presented numerous papers and posters at international veterinary education meetings such as VetEd and InVest, and very successfully organised the InVest congress in South Africa in 2017 in collaboration with her colleague, Dr Elrien Scheepers. Dr Annandale still serves on the InVest organising committee.

Her vision for skills laboratory training within veterinary education is to enhance the combination of model training with technology while providing an engaging environment for students to foster hands-on and cognitive skills simultaneously, and her work clearly echoes this vision.

She has obtained many research and development grants for the Skills Laboratory and her project 'Development, validation and implementation of in-house manufactured veterinary models for innovative teaching of clinical skills' was awarded the Bronze Winner for the category Regional Award: Africa at the renowned international Wharton QS Stars Reimagine Education Awards (Philadelphia, USA) in 2015.



Student conducting procedures on model of dog in the Skills Laboratory

This relationship allowed her creativity to excel and she has developed numerous novel concepts in veterinary simulator training in collaboration with Anatomoulds.

In combination with model development, Dr Annandale employs new technologies in the Skills Laboratory by developing apps for students to engage in their own clinical skills development, QR code links to videos for all procedures that can be practised in the laboratory and other new research ideas using technology to enhance student learning.

Under her leadership, the Skills Laboratory at the University of Pretoria has grown tremendously over the past few years, with the number of models and procedures that can be practised doubling in three years, and it has secured very significant uptake of skills training and assessment in the veterinary and veterinary nursing curricula. The Skills Laboratory now hosts 60 models, many of which have been developed by the on-site team, on which 150 procedures can be practised by students. Highlights include an ovariohysterectomy model that is used in combination with a mobile app and that has been validated to improve surgical outcomes in students, and a bull on which many different procedures can be practised from placing a stomach tube and taking a blood sample to performing a preputial scraping and palpating the reproductive organs.

Her current research focuses on training of trans-rectal palpation skills, and she has already discovered and published important findings with the potential of completely renewing and significantly improving training of this important skill for veterinarians.

Mamelodi Campus Foundation Programmes

Registration

868
(NAS: 607 students
and
EMS: 261 students)

Success rate

NAS: 85,5%
and
EMS: 93%

The year 2018 marked a decade of extended curriculum programme offering on Mamelodi Campus. It was a year filled with activities to support staff and student teaching and learning. Activities included a student seminar series, conference attendance, a series of teaching and learning days, and finally a highly successful #ChooseUP Day to attract students to the Mamelodi Campus programmes as their first choice rather than a default option when they do not meet the admission requirements for BCom or BSc programmes.

Student Performance and Numbers

In the UP Strategic Plan 2025, the maximum number of students to be served in the extended programme on Mamelodi Campus was estimated to rise from 650 in 2016 to 1 200 in 2025, barring major infrastructural changes, an increase of approximately 5% per annum. However, from 2017 to 2018, there was a marked increase of 24% in student numbers, from 698 to 868. In response to this challenge, the campus academic team worked hard to maintain the target of an 85% pass rate in each module. Overall, the average pass rate in 2017 was the same in 2018 (88%). However, the pass rate in some modules dropped below the 85% target level. The pass rate for the pre-calculus course, WTW 133, which is consistently challenging for students,



especially BCom students, remained at about 70%, and a few other courses came in at around the 80% pass rate. In response to the challenge faced by BCom students, the WTW 133 module will be replaced with a new module called Basic Business Mathematics (BAM 133), which was proposed and conceptualised in 2018

for implementation in 2020 together with the Faculty of Economic and Management Sciences. This will be a highly intensive module consisting of three one-hour lectures, one two-hour tutorial and a one-hour practical laboratory session per week presented to student in small groups.

Two other courses were cause for concern – the compulsory and strategically important language and study skills course LST 133, whose success rate dropped from 90,4% to 84,1%, and the calculus course WTW 143, which dropped by 14% to 58,7%. Both these courses were sensitive to the increased student numbers that resulted in larger groups (sometimes larger than 55 students), and possibly less personal feedback to students. The increased group size was particularly challenging for the language and study skills course that depends on feedback on students' writing for its success. A second constraint was space limitation in laboratories for practical work. To overcome these limitations, work was begun on the reconfiguration of facilities to be completed in the second semester of 2019.

On the teaching and learning side, staff teaching the language and mathematics courses have responded to the challenges of ensuring that they progressively adopt hybrid teaching and learning.

In the language and study skills modules, the team combined three separate essay assignments into an accumulative research essay, which gradually incorporated new skills as students responded to feedback on submitted work. The team also responded to changes made by content lecturers by changing the structure of collaborative group assignments. Another innovation was to change their online learning platform and move more content online to conform to UP's policy of hybrid learning approaches. Finally, they made adjustments by discarding outdated topics such as classification and increasing the emphasis on more useful skills such as summarising and paraphrasing.

The mathematics team terminated an outdated drill and practice software package in the first-semester course and will replace it with the online homework system Webassign in 2019. In the second-semester course, they followed a decision made by the mainstream programme to abandon the WileyPlus online homework

platform as it was too expensive for the students.

Awards and Successes

The year 2018 saw the highest pass rate in three years recorded in the non-numerical mathematics module for BCom students (82,8%). All module coordinators of the Foundation Programmes attest that their teams worked well together and did more than was expected of them. As a result, two lecturers, Ms Christine Kraamwinkel (Statistics) and Mr Britz (Mathematics) were nominated for the best first-year lecturer award in the Faculty of Natural and Agricultural Sciences. In 2019 it is planned to make a best first-year lecturer award on the Mamelodi Campus.

In 2018, the Chancellor's Award for Best Economic and Management Sciences student went to Ms Masilo, a student who began on Mamelodi Campus in 2014 and graduated with a BComHons (Supply Chain Management Stream) in minimum time in 2018. In an interview, Ms Mashilo said, 'I first applied for BCom (Communication Management) and was turned down. I refuse to give up on my dream. Hard work and consistency are a recipe for success'. She attributes her success to her lecturers and tutors.

The top achievers in various modules were also acknowledged at a special ceremony at the beginning of the second semester. There is evidence that students acknowledge that these awards motivate them to do better in the second semester.

Teaching and Learning Days

Mamelodi core teaching staff come together twice a year with teaching staff from the faculties of Natural and Agricultural Sciences, Economic and Management Sciences and Engineering, Built Environment and Information Technology's augmented programme (ENGAGE) to participate in teaching and learning days. In 2018, both teaching and learning days were hosted on the Mamelodi Campus in August and November.

The August teaching and learning day focused on two contributions. The first was by Ms Ida Meyer and Mr Mabuza from Advising Services on 'Practically understanding strengths of personality in academics and overcoming procrastination', which are key aspects of student success. One challenge mentioned by a participant was 'creating an environment that is tailored to accommodate every student and not just the average one'. The second input was by Dr Sanet Haupt and Ms Adriana Botha from Education Innovation (EI) on power strategies for lecturers that enable them to assist students to change behaviour for success through influencing their mindset. One of the participants noted: 'Power tactics [involve] interesting ways to collaborate with the class, as well as identifying improvement areas that need attention'.

The November teaching and learning day was facilitated by a visiting scholar from the USA, Ms Caroline Lehman. Ms Lehman has 40 years' experience teaching science in high schools and five years' college experience running and facilitating a pre-service graduate education programme for science and mathematics teachers in the US. With the title 'Teaching with your mouth closed: Facilitating student collaborative learning', Ms Lehman introduced a teaching and learning approach called Process Oriented Guided Inquiry Learning (POGIL) to attending staff. POGIL is a student-centred, inquiry-based teaching method with a group-learning instructional strategy and philosophy developed through research on how students learn best. The strategies developed by the POGIL project enable instructors to use guided discovery techniques more effectively and engage students in constructing their own knowledge. The staff teaching in the extended curriculum programmes on the Mamelodi Campus and the ENGAGE staff were joined by staff from the Faculty of Education, an official from the Gauteng Department of Basic Education and Dr Haupt of the Department for Education Innovation. The workshop

entailed staff working collaboratively to engage actively with the POGIL materials and experiencing the activities from a student's perspective. The staff left the workshop motivated to implement POGIL in their classes in 2019.

- 'It was interesting to experience what our students experience in the tutorial sessions. This [workshop] will give me more insight and tools for when I am planning my future classes / tutorial sessions.'
- 'I realised that constructivism approaches to teaching and learning do not necessarily involve leaving students to their own devices, but do in fact provide guidance while building understanding gradually.'

Wednesday Seminar Series for Students

The Wednesday seminar series was established to assist undecided students to make career decisions. In 2018, five lunch-hour seminars were held by senior staff in interesting fields.

In May 2018, Professor Dumont, a visiting professor in applied mathematics, presented a guest lecture. His research interests are mathematical epidemiology, mathematical ecology, numerical analysis, plant-insect interactions, and vector-borne diseases. Several significant points became clear to the students: the study of mathematics can harness analytical skills, which can open an array of possibilities. It was also clear that the collaborative nature of applied mathematics research provides the opportunity for lifelong learning, since mathematicians can apply their knowledge in many specialised fields.

In August, Dr Barbara Heinze and two of her final-year undergraduate students introduced audiology and speech-language pathology. Attendees gained an understanding of the work opportunities offered by these two different professional degrees and the undergraduate programmes, which

include both theoretical and practical components as well as an overview of application requirements and selection procedures.

Three talks were held in September and October, two for BSc-stream and one for BCom students.

Transferring students in general are overwhelmed by the size and speed of activities on their new campuses. To assist with this transfer, Mr Danny Ramollo, Head of Student Advisory Services in the Faculty of Economic and Management Sciences, in 2018 provided BCom students with 'Pointers on how to be successful at Hatfield in 2019'.

Professor Chris Theron, Head of the Department of Physics, gave an overview of the field of physics to BSc physics students. He shared his passion for the subject and explained how judicious module choices can provide access to a range of subject combinations to enhance students' employment opportunities.

Finally, Professor Namrita Lall, NRF/DST Chair in Plant Health Products from Indigenous Knowledge Systems, spoke about merging the sciences, tradition and innovations. One focus of her research is

on evaluating the potential of unexplored South African plants and the development of products, which can be applied topically. Professor Lall expressed hope that her research project may, among other things, lead to beneficiation of local endemic plant material, infrastructure and upliftment in the community.

#ChooseUP Day

#ChooseUP Day, held on 4 August 2018, was a very important initiative for the Mamelodi Campus to dispel preconceptions of potential applicants concerning both the location and nature of programmes. The purpose of #ChooseUP Day was to increase the number of students who accept the extended programme option as a first choice for its benefits and not just as a 'default option'.

Successful alumni from Mamelodi Campus who have finished in minimum time are key in this initiative and readily volunteer to support this event. Their contribution to changing perceptions was executed through the initiation of a number of projects under the guidance of senior faculty student advisor, Ms Ida Meyer, supported by Ms Joanie van Dyk



Professor Nthabiseng Ogude, Dean, Mamelodi Campus, and Professor Cheryl de la Rey, Vice Chancellor and Principal

from the Dean's office and faculty student advisor, Mr Mabuza.

On #ChooseUP Day, applicants in their final year of schooling began their UP visit on Hatfield Campus. With electrifying excitement, fun and responsibility, two stands (one for each of the two faculties offering programmes at the Mamelodi Campus) were available. Five R10 000 bursaries handed out by UP were also advertised. All alumni and staff wore special alumni marketing caps to attract prospective students to visit the Mamelodi Campus on the bus later. On the bus, alumni were able to have individual conversations with families and answer questions they had about the courses, their fears and the campus environment. These conversations were very productive and elicited very positive feedback from the parents. The Mamelodi visit took place from 13:00 to 15:00, allowing parents and prospective students to attend a Dean's information session and a tour of the campus. For this tour, physics, biology and chemistry lecturers set up quick ten-minute experiments that sparked interest in the field of study.

The number of visitors to the campus far exceeded the expectations. More than 300 people visited, compared to just over 100 in early 2018. The Dean handed out two of five bursaries in the first session through a lucky draw. During the second session, the prospective students were surprised by a visit from the Vice-Chancellor and Principal, Professor Cheryl de la Rey, who then drew the last three bursaries to prospective students for the 2019 academic year.

A special edition of the Mamelodi newsletter, Dipolelo, designed and created by alumni, included positive

stories of successful past students and their experience of entering university through the Mamelodi Campus. Thirty alumni volunteered to interact with prospective students and parents individually to market the programmes. The feedback from the parents and prospective students was overwhelmingly positive. They found the day positively informative with pleasantly interactive stands. They felt welcome to ask about anything – even their fears. They particularly enjoyed the laboratory interactions, discussions with alumni, and most of all, the caring atmosphere on the campus.

Conferences and Publication

Professor Nthabiseng Ogude, Ms Ida Meyer, Ms Mthethwa and two former extended programme students, Mr Waleng and Ms Mello, attended a two-day conference organised by the Foundation Special Interest Group of Higher Education Learning and Teaching Association of Southern Africa (HELTASA) held at the University of Venda, Thohoyandou.

The goal of the colloquium was to ensure academic access and success for at-risk students who come from disadvantaged educational backgrounds, and it was designed to explore ideas to cater for such students and to look into the future for the extended curriculum programmes. UP's Mamelodi team, led by the students, presented a paper entitled 'Underdog becomes top-dog: Alumni perspectives of ECPs as a better choice for throughput in the SA context'. The presentation emphasised the importance of the student voice in understanding teaching and learning strategies which take place

beyond the classrooms, highlighting the application of a strong peer mentoring structure on the Mamelodi Campus that continues when they transition to other campuses.

One of the highlights of the year was the acceptance of a paper 'Can extended curriculum programmes be improved through engagement with students using Appreciative Inquiry?' in the *South African Journal of Higher Education*, which brought together novice and expert researchers – Ogude, NA, Meyer, IJ, Mwambakana, J and Mthethwa, NE – and suggests a student-led approach to the improvement of the programmes.



Professor Ogude and students at HELTASA colloquium

Dr Fouche, module coordinator of LST and Ms Hechter, module coordinator of mathematics (ENGAGE), attended the Southern African Association for Research in Mathematics Science and Technology Education research school in Cape Town in June. The aim of this research school was twofold: assistance with doctoral studies and assistance for early-career researchers.

Ms Immelman, LST lecturer, attended this year's HELTASA conference that was held at Nelson Mandela University (NMU) in Port Elizabeth in November. The theme of the conference was 'Dancing on the teaching and learning waves of change in Africa'. She presented a paper entitled 'It joins the dots': students' experiences of concept mapping in an extended programme course'. The key finding from her paper was that most students found concept mapping a useful aid for acquiring concept literacy. Her talk was well-received and elicited useful discussions.



Gordon Institute of Business Science (GIBS)

In May 2018, the annual UK *Financial Times* Executive Education rankings, a global benchmark for providers of executive education, once again ranked GIBS as the top South African and African business school. This is the 15th year running that GIBS has been ranked among the top business schools worldwide. In October 2018, the GIBS MBA was ranked among the top 100 globally in the prestigious *Financial Times* Executive MBA Rankings. GIBS is the only business school in Africa to appear in this ranking. UP's business school contributes significantly to high-level management and leadership skills for individuals and industries in South Africa. GIBS offers generic and tailored short learning programmes as well as formal programmes up to doctoral level.

Academic Programmes

The academic programme team manages five groups for the Postgraduate Diploma in General Management, two groups for the Postgraduate Diploma in Business Administration (one full-time, one part-time), five groups for the Master of Business Administration, the MPhil in International Business and the MPhil in Corporate Strategy. In 2018, the applications for the programmes were very good with a high number of acceptances and a diverse mix of students. For the Postgraduate Diploma in General Management, part-time and modular, there was 38,4% female representation,

Registration
630

Completion rate
PGDip and master's
85%

GIBS
Top African
business school
Financial Times
GIBS executive MBA
Top 100
internationally
Financial Times



#ChooseUP celebrations at Mamelodi Campus



Class of 2018 (taking a selfie) and active, micro-skilled game-players

with the MBA achieving 42% female representation. GIBS has also been aware of the need to improve the diversity of the class demographics across the PGDip and MBA programmes and is proud to have achieved 69% average participation for race groups other than white and international students. There were excellent completion rates across all postgraduate diplomas and master's degrees, with an average completion rate of 85% across a student body of 630.

The doctoral programme manages three groups: post-proposal students (29), proposal development students (24) and students attending a type of bridging course, the PGDip (Business Studies) (36). The cohort has a balance of national and international students. During both the proposal and post-proposal phases, students have to present their work-in-progress to a faculty member and fellow students three times during the course of the year. Plenary sessions on research skills as well as individualised tutoring are offered. The proposal is sent to a research quality committee (RQC) for approval. The committee comprises research-active staff: five professors and three senior lecturers (all of whom hold doctorates). It serves as an additional resource for supervisors and students alike. Once accepted, the proposal is presented to the doctoral community. For post-proposal doctoral candidates, the thesis is submitted to the RQC for scrutiny before being sent out for examination. Paper writing workshops are offered to GIBS staff, research associates and doctoral students during the course of each year. Students are encouraged to present at national and international conferences. A sense of community is fostered through attendance at bi-monthly campus weeks as well as various team-building activities.

Game-based Learning Prepares Graduates for the World of Work

GIBS' full-time Postgraduate Diploma in Business Administration is designed for recent graduates and primes students for the world of work – to become professional, responsible, innovative and self-managing leaders. The programme includes an internship period to accelerate student access to and progress in the workplace.



The GIBS coin

Game-based learning, delivered via clickUP, assists students in building a portfolio of evidence to close the skills gap graduates face when entering the workforce. Students work through 40 tasks to build a range of micro-skills needed in the workplace, such as how to run a meeting or how to pitch an idea.

Called *Differentiate*, the game allows students to compete with their peers and rewards skill mastery with badges for level completion and 'GIBS Coins' for task achievement. Through the application of typical gaming elements (rules of play, point scoring and competing with others) to what may otherwise appear tedious tasks, students actively engage and independently progress through the designed activities. Learning is promoted and competencies are recognised.



GIBS Coins are redeemable on campus and can buy anything from a cup of coffee to lunch with the Dean or dinner with a business executive from the GIBS network. GIBS hoodies, mugs and meal vouchers are all up for grabs, and bonus prizes reward the 'movers and shakers' on the game's leader board.

Played via smart phone (or PC or Mac), *Differentiate* creates significant engagement with our digitally native, Gen-Z graduates. Game design focuses on building student-elected skills. Leader boards and GIBS Coins instil competitive agency and provide real-time feedback transparently.

The inter-operability of *Differentiate* allows GIBS to re-purpose the game-based learning into different markets and revenue lines. One example is a customised programme designed for young professionals on internships at a corporate client in the financial services and ICT sectors.

Enterprises University of Pretoria

Improving Student Success at and beyond their University Studies

Continued support was provided during 2018 for the Ready for Work programme and initiatives around work readiness by UP's Career Services – in collaboration with Enterprises University of Pretoria – to equip students and recent graduates with the requisite skills and attributes to help them integrate into the world of work more easily. This not only includes skills and knowledge that enhance their professional and personal profiles, but it also assists them in making a meaningful contribution to the workforce, their communities and the economy, while striving for further success in their chosen careers.



During the year, a total of 2 018 students enrolled in this online learning programme, while other ventures around these initiatives were also explored with industry and business partners through the submission of proposals and simulations of its potential in both the higher education and corporate graduate programme environments by means of a customised offering. Students also received free access to an online module in entrepreneurship that they could complete to brush up their business skills and kick-start the possibility of their own businesses as a means of self-employment. A total of 364 students enrolled in the entrepreneurship POD during the year.



Ready for Work programme

The Ready for Work programme itself was also extended to include a new package on personal development that focuses on positive life skills and the development of a realistic and healthy self-esteem, adding 12 additional modules to the programme that now includes areas of:

- emotional intelligence,
- stress management,
- higher cognitive processing,
- assertiveness and
- solutions architecture.

Upscaling the Use of E-Technologies in Teaching and Learning

With a focus on extending and supporting UP's hybrid teaching and learning approach, Enterprises UP scheduled 40 online short courses during 2018 – with a total of 1 131 enrolments – and also now boasts a total of 45 blended (online and contact) courses for professional skills development.

During the year, 1 957 delegates attended these courses. Twelve new, unique blended courses were added to the hybrid portfolio, a few of which include:

- Computer-Integrated Education
- Re-skilling of Selected FET Teachers in Engineering Graphics and Design
- Seed Science
- Environmental Impact Assessment and Authorisation
- Leadership Development Programme
- Architectural and Engineering Approaches to Infection Control
- Diamond Exploration and their Primary and Secondary Sources
- Infrastructure Delivery Management Programme: Planning and Budgeting

A free online course, 'Workplace Skills Plan – Tips and Tools', was also launched in 2018 targeted at corporate and government clients to provide basic insights regarding workplace skills planning within their respective organisations, ultimately working towards activating a suitable workplace skills plan in consultation with Enterprises UP.

Solutions-Driven Approach (Business / Industry / Community)

Enterprises UP presents a multifaceted value proposition that is aligned with organisational objectives, personal growth and skills development goals with a combination of training and research offerings that support work readiness development, workplace skills plan activation, community engagement, and enterprise and supplier development. During 2018, continuous engagement within the public, private and higher education sectors not only ensured that the necessary capacity was developed and that designated employees were equipped with professional skills, but also that these solutions were shaped and applicable to real-world challenges that business and industry currently face.

UP's commitment to lifelong learning is also reflected in its approach to

continuously engaging with alumni by promoting professional development beyond just a degree: maximising career-growth opportunities, keeping up with the latest developments – including continued professional development (CPD) – and taking knowledge to the next level by the training and research offerings that were presented through Enterprises UP during the year.

As a means of contributing to the overall growth of the global market and anticipating future shifts in the way business will be done in the wake of the Fourth Industrial Revolution (Industry 4.0 or 4IR), Enterprises UP continued to provide specialised training programmes and short courses for skills development as well as research and advisory services for critical business insights during 2018, informed by the latest scientific evidence and best practices. To remain on top of these global changes, Enterprises UP not only ensures that businesses and industry increase productivity and service excellence, but that they also continuously engage in ground-breaking knowledge transfer in the rapidly changing world of work and business.

Unique and relevant short courses in this regard that were presented during 2018 include:

- Cloud Computing Auditing (CCA) Training Course
- Data Storage for Decision Support
- Financial Sciences Research Methods
- Re-skilling of Selected FET Teachers in Engineering Graphics and Design: FET
- Computer Integrated Education
- Spatial Statistics
- Designing Programmes for Open, Distance and eLearning
- Smart Metering Audits and Installation Practices

Leadership Development Programme for School Principals

Aimed at equipping school principals with tools and techniques to optimise on their strengths as community leaders, the annual Leadership Development Programme for School Principals presented by Enterprises University of Pretoria provides these principals with a catalytic approach to school leadership – not only transforming them into drivers of technology and entrepreneurship, but also enabling them to ignite change in their schools, classrooms and communities.

Since its inception in 2013, the programme has successfully trained 64 principals and saw its fifth iteration during 2018. The programme is funded through corporate sponsorships in the form of either a one-on-one or a corporate-to-principal basis where organisations can invest in the sustainable development of a selected school principal as community leader. Sponsors therefore invest on a personal level and get involved in areas of improvement and/or communities where they want to see change for the better.



Ready for Work programme



Ready for Work programme



Conclusion

The University of Pretoria has a well-deserved reputation for highly qualified staff as well as good teaching and student success in undergraduate and postgraduate qualifications. It caters for formal qualifications and short learning programmes. Its footprint stretches from the Hatfield, Prinshof, Onderstepoort, Groenkloof and Mamelodi campuses in Tshwane to the Gordon Institute of Business Science in Johannesburg.

This publication covers only a sample of the extensive and creative work being done by academics and support staff to promote and support student learning. The impact is clear in the latest statistics from a graduate destination survey that show that 93% of students are employed in their fields or registered for higher degrees within six months of graduating from their undergraduate programmes.

The overall success rate of students increased in 2018 and, through the efforts of the Executive, all academic and support staff, and of the students themselves, the University will continue to be a leading African higher education institution.



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Editor

Prof Wendy Kilfoil
Department for Education Innovation
University of Pretoria

Design of publication

Rita Dave
Graphic Designer
Department for Education Innovation
University of Pretoria

Photographs

Mariki Uitenweerde
EYEscape.co.za

Project manager

Almero du Pisani
Head
Creative Studios & Communication Technology
Department for Education Innovation
University of Pretoria

Language editing

Nathan Lowe
Language Unit
University of Pretoria

