



T&L@NAS Bulletin

No. 8 / November 2022



From the editors

Ina Louw – Office of the Dean: Faculty of Natural and Agricultural Sciences



I am absolutely delighted to present this issue of the T&L@NAS Bulletin with the theme of work readiness. The Bulletin has transcended the original NAS borders; in this issue, we share two stories from the EBIT and Health faculties, and one each from EMS, LAW, and the Library. The remaining sixteen stories came from NAS, with the departments of Consumer and Food Science (CFS) and Geography, Geoinformatics and Meteorology (GGM) each contributing four stories.

I chose the theme 'Preparing our students for the world of work' and you will read about a wide range of activities undertaken by the various departments. In GGM's contributions, you will read how students are supported on their journey to do job hunting, how virtual reality is used when groups are too large to go on field trips, how former students share tips about the world of employment via podcasts, and how students are taught about tendering to get them work-ready. From CFS you will learn about recycling secondhand clothes, taking hands with a small company, and dealing with sustainability in 'Sewing for success', how reflective learning is used to support students to learn, and how the department is modernising the culinary science curriculum.

The Health contributions are from Physiotherapy where muscles are made visible with drawings and where students in the Bachelor in Clinical Medical Practice get authentic workplace experience. The EBIT authors share how creativity is being used in the BIS multimedia degree to solve real-life problems in a rewarding way. We also learn how the connectivist approach is used to assist Information Science students on their journey. From the Faculty of Law, we have a story about their students' involvement in real legal work to make them ready for their future jobs. The EMS team has an interesting take on integrated assignments, virtual reality, and simulations of SARS's e-filing platform for tax students.

There is a contribution from the Statistics department about gamification, for which a snakes and ladder board featuring South African snakes was commissioned from Estelle Mayhew from the Department for Education Innovation. BGM lecturers shared their structured approach to giving students a glimpse into the hidden kingdom of fungi.

The Department of Agriculture Economics, Extension and Rural Development shares how exposure to real markets and industry assists their students in understanding where they would be working one day, and Animal Science shares their students' journey in the feedlot challenge. The contribution from chemistry is about systems thinking and the one from Geology is about students having to do a funding pitch for a mine that they have chosen, to real investors. The story from Plant Sciences is about a practical session where students learn to make compost from waste and ultimately using the improved soil for other modules in soil sciences. How is that for sustainability?

Finally, I share some resources from the Department of Library Services. We share the links of four items in a series about academic integrity and invite you to explore their website for other useful resources. We also add multiple links to make it easy to find your librarian.

I invite you to pour your favourite beverage, sit somewhere nice, and enjoy the reading. I hope to feature a story about your teaching practice in the next bulletin.

I want to thank Keith Mankgane from the Department for Education Innovation for his contribution to make this volume a pleasant reading experience. His layout and typesetting made it possible for me to share the wonderful T&L stories with you.

Teaching practices to inspire creativity

Annique Smith – Department of Information Science

#meaning, #risktaking, #real-world



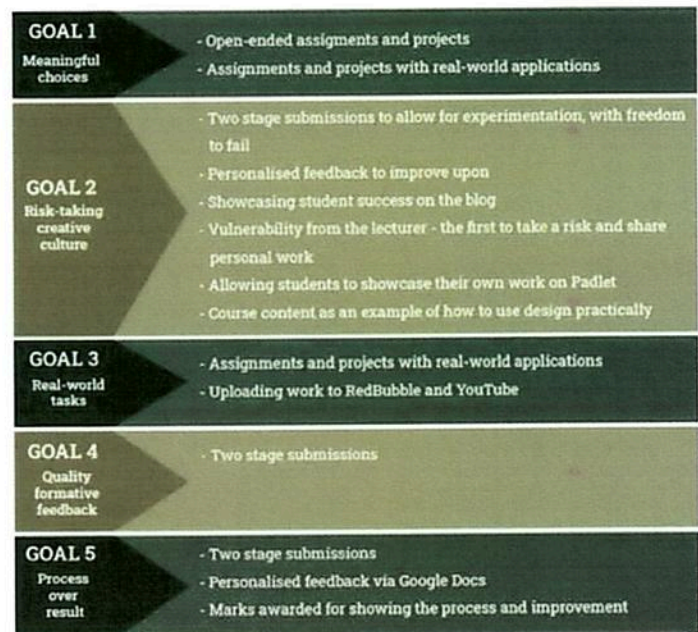
Bloom's revised taxonomy lists creating – the action of producing new and original work – as a top-level higher-order skill. However, academics are all too aware that facilitating creativity and creative thinking in students can be a challenge. With this challenge in mind, the Department of Information Science redesigned the IMY 120 module to stimulate greater creativity in students.

The module teaches specific software that is used to create new visual, audio, and multimedia content. It is taught at the start of the BIS Multimedia degree to allow students to use Adobe software packages for future projects. Students should not only know how to use a particular tool in Photoshop, but how that tool can be employed to create something new and interesting. In addition to learning four new software packages from the Adobe Creative Cloud range, the module encourages students to step out of their comfort zones to create new and beautiful content. This is a core skill for a BIS Multimedia student to master.

In 2020, the module was redesigned to foster a creative culture. The following goals guided the redesign process:

1. To provide students with meaningful choices that matter to them on a personal level, they will establish a connection with the content that adds deeper meaning to the tasks in the module.
2. To foster a creative culture in which it is safe to take risks, the risks taken are celebrated, failures are reframed as evidence of growth, and opportunities for recognition are optimised. By minimizing the negative side-effects of failure – such as losing marks – the specter of failure is removed.
3. To provide students with opportunities to engage in real-world problem-solving tasks, they will feel like their work matters and that it does not simply contribute to a passing mark. Real-world linkages strengthen the importance of the module.
4. To provide students with timely, quality, and personalised formative feedback, they should be able to adjust their course, learn from failure and take more risks. It also makes them feel like they matter as an individual within the module.
5. By emphasizing the process rather than the result, students develop a growth mindset, and the iterative nature of the creative process is emphasised.

The image shows how each of these goals was addressed through changes in the module.



The redesign of IMY 120 aimed to teach students to take creative risks. The students are given choices regarding assessments; combined with personalised feedback and the opportunity to try and fail without negative consequences, student success is celebrated. A safe, risk-taking environment is created in which the lecturer also shows vulnerability by sharing their work. The ideal outcome of this module is a student who is more confident of their abilities and understands that it takes many iterations to create something excellent. Students are taught to be resilient and to continue working on a problem to improve the result. The design of the module aims to teach students to become effective lifelong learners able to creatively address any problem that they encounter.



Looking back to learn: Using reflective learning to determine the development of employability skills during online teaching and learning

Bertha Jacobs – Department of Consumer and Food Sciences

#reflection #skills #employability

The pressure on higher education institutions to produce graduates who are employable and invariably have the know-how, technical abilities, and occupational skills required by local and global industries, is mounting. But how do universities know that students acquired the right skills and knowledge during their time at varsity?

During the COVID-19 pandemic, we used reflective learning to explore if our students developed the employability skills required by industry. Reflective learning, in essence, is 'analysing one's own life experiences' (Reilly, 2018, p. 129). This takes place through a circular process consisting of action (learning and practising) followed by reflection (making sense/ thinking about the how and why, and what was learned from it) and then building competencies which can be implemented during the next experience (Bruno & Dell'Aversana, 2018) (Figure 1). The overall aim of reflective learning is for students to become self-aware and gain insight into their personal learning, and ultimately to establish a practice of contemplating learning for the rest of their lives.

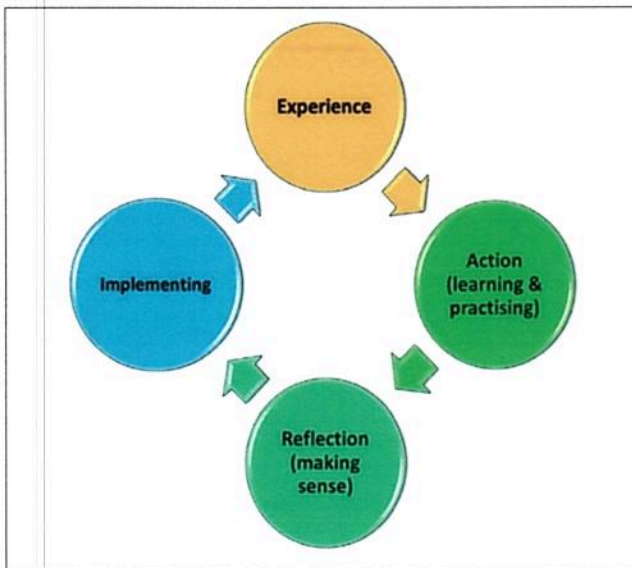


Figure 1: The reflective learning process

Students were asked to complete reflection questions about various aspects of their online teaching and learning experience such as what skills they have honed/developed through this experience and how valuable or applicable these skills would be for future employment. The word cloud (Figure 2) summarises the skills the students mentioned they developed. They referred to developing better inter- and intrapersonal skills (i.e., time management, teamwork,

organisational skills, self-discipline and communication) and thinking skills (i.e., problem-solving and self-learning) during their online teaching and learning experience. Additionally, their technology skills (their use of Microsoft office, online platforms, software programs, and online presentations) also improved during their online experiences. Students viewed these skills as essential for future employment, especially for functioning in technology-oriented workplaces and for working and communicating in virtual teams across borders.



Figure 2: Students' responses

Implementing reflective learning practice has various benefits for students and educators.

- Learning from experience hone higher-order thinking skills such as critical thinking, problem-solving and metacognition,
- Students learn how to make sense of their experiences,
- Students can transfer the practice of reflection to every aspect of their life and establish a lifelong reflection practice,
- Students understand what skills they obtain and how they fit in with their career path,
- Educators get a glimpse of how students make sense of their teaching and learning experiences,
- Educators can determine if the module's intended knowledge and skills were transferred and developed,
- Educators can use students' reflections as feedback on course delivery and to improve courses to ensure a better learning environment.

Reflective learning in our study proved to be very useful in preparing students for industry. It provided insight into the skills they developed and highlighted which aspects of online teaching and learning worked, and which did not.

References: Bruno, A. & Dell'Aversana, G. 2018. Reflective practicum in higher education: the influence of the learning environment on the quality of learning. *Assessment and Evaluation in Higher Education*. 43(3): 345-358. DOI: 10.1080/02602938.2017.1344823

Reilly, A.H., 2018. Using reflective practice to support management student learning: Three brief assignments. *Management Teaching Review*. 3(2): 129-147.

Authentic workplace-based learning in the BCMP curriculum

Dr Murray Louw, Dr Carien Steyn, Ms Zuki Tshabalala,
Dr Sanele Ngcobo, Mrs Lumbani Tshotetsi -

Department of Family Medicine

#authentic #practical #skills



The Bachelor in Clinical Medical Practice was initiated at UP in 2009. The aim of this degree is to train Clinical Associates (ClinAs) to provide healthcare services in underserved communities. Students are therefore not only selected from rural areas and poorly resourced schools but are also trained in rural health settings.

The training is very practical and decentralised with 17 different clinical learning centres (CLC) in four provinces, across all levels of care. In the second and third years, students do clinical training for 28 hours per week. This is called a Longitudinal Integrated Clerkship (LIC). They log ten patients per week electronically on Qualtrics, the platform UP uses as eLogbook, and refer one patient per month to their supervisors via a medical referral and communication application (Vula).

To evaluate whether the LIC and eLogbook are effective, we analysed data from the submissions made by second and third-year students in 2021.

Throughout 2021, 44 second- and 40 third-year students referred 598 patients via Vula. The diagnostic categories of these patients reflected the quadruple burden of diseases we see in South Africa, with 26% having HIV/TB and 24% having diabetes mellitus and/or hypertension.

During the second semester of 2021, 93 students logged 16 435 patients on Qualtrics. The population seen was representative of age and gender; most patients were between 20 and 50 years old, and 52% of the total were female.

Students engaged with patients mostly in the emergency department (40%), then in wards (33%), outpatient departments (20%), theatre and maternity units (4%) and least of all in primary health care centres, clinics and COSUP (Community Oriented Substance Use Programme) (3%). Because patients often first present in primary health care settings outside hospitals before they are diagnosed, students are better able to hone their diagnostic skills in these settings. The BCMP programme, therefore, needs to consider ways to expose students to more patients outside hospitals.

Diagnostic categories for patients logged on Qualtrics were mostly representative of the quadruple burden of diseases in South Africa. The categories include trauma (14%), HIV, TB, pneumonia, and COVID-19 (13%), diabetes mellitus and hypertension (10%), pregnancy-related disorders (8%), and other conditions. In terms of age distribution, 13% of patients were less than 15 years old.

The questions emanating from this research are whether students' self-reported work can be verified and do the benefits of an eLogbook outweigh the disadvantages?

We can conclude that BCMP students see ambulatory and in-patients across the age spectrum in a variety of hospital contexts, but with minimal reported patient engagement outside of the hospital context. Students learn from patients with a variety of clinical presentations and diagnostic categories that reflect the quadruple burden of diseases in South Africa. Therefore, the authentic learning in the LIC model produces competent ClinAs.

Turning waste into compost

Chris de Jager - Department of Plant and Soil Sciences

#sustainability #recycle #teamwork



In 2022, students in second-year introductory Soil Science were exposed to composting. Given increasing pressure on our resources, composting is an important life skill everyone should learn to take greater responsibility for the waste we generate. There are many similarities between the decomposition of organic material in soil and its decomposition during composting. Compost is also a common soil amendment. Composting, therefore, articulates well with introductory Soil Science training.

The approach

The composting was run as a group project. The class was organised into groups of 10 - 12 students, with a group leader and at least one data manager. The task of the latter was to collect, format and store the data so that it would be accessible to all students in the group. Using a composting calculator, each group created a unique mixture of composting feedstocks consisting of 'greens' (vegetable and fruit waste, coffee grounds, and grass clippings) and 'browns' (bark). The decomposition was monitored weekly, following five simple-to-measure parameters which were supplemented with nutrient analyses and compost yield calculations at the end.

Towards the end of the semester, each group submitted a composting report and a composting flyer. Each report consisted of the various parameters written up as short separate chapters, each authored by two group members. In the process, students learned graduate attributes and research principles. The transferable skills in this project are teamwork, problem-solving, critical thinking, creativity, technology skills, interpersonal skills, leadership, and thinking about future sustainability.

Further advantages

The pool of composting data from GKD 250 will form part of an Honours project. Compost from the first semester was used in the third (GKD 320) and fourth year (GKD 420) Soil Science practicals in the second semester. The practical of GKD 420 was used to collect another pool of data for further use in Honours projects in 2023. In this project, maize was grown in pot trials with the overarching aim and design to isolate the influence of compost on micronutrient uptake by maize. The leftover compost will be blended into the stocks of soils kept for practicals. The aim is to decrease the rate at which new soils need to be collected for undergrad Soil Science training.



Figure 1: Example of the woven compost bags used by each group in GKD 250. The composting process was scaled down to be performed in the laboratory, yet still allows normal aerobic organic material decomposition. The woven plastic bags allow for good aeration and drainage.



Figure 2: The fast aerobic decomposition in the woven bags is characterised by rapid weight decrease. 1) Example of a bag loaded on 17 March 2022 with an "as-is" weight of 6 kg (bag and organic material). 2) On 14 April 2022, the compost bag and its material weighed 4.01 kg. 3) The compost of a grass clippings-rich mixture shows substantial humification after 2 months.



Figure 3: A wooden stick (high carbon to nitrogen material) is used as a 'compost barometer' (stick on the left). The students must collect a picture series of its gradual decomposition/ change over time.

Acknowledgment: I want to thank Nomathemba Ngcobo for her contribution to this process.



The learning was scaffolded by providing a report template and clear guidelines on chapter layout, data analyses, data representation, managing group dynamics, the internal group report review process, assessment weights of the different components of each chapter, and deadlines. Students were given similar guidance for the design of their flyers. Click on the flyers to see more detail.



Synergies between academic and workplace requirements

Christel Hansen - Department of Geography, Geoinformatics and Meteorology

#practical #industry #skills



Academics often struggle to prepare students for the work environment, while still addressing the academic requirements of a module. One way is to identify the transferable skills students would need in the workplace, and designing a task around them.

In the third-year module GIS 310, students must complete a summative group task to demonstrate the practical geospatial analyses skills they acquired throughout the semester by creating an [Open Educational Resource \(OER\)](#).

The practicals are designed to look like calls for tender, preparing the students for such processes they would encounter in industry. Several winning projects from preceding years are given to students as examples, and the best project of the previous year is adapted as a practical exercise.

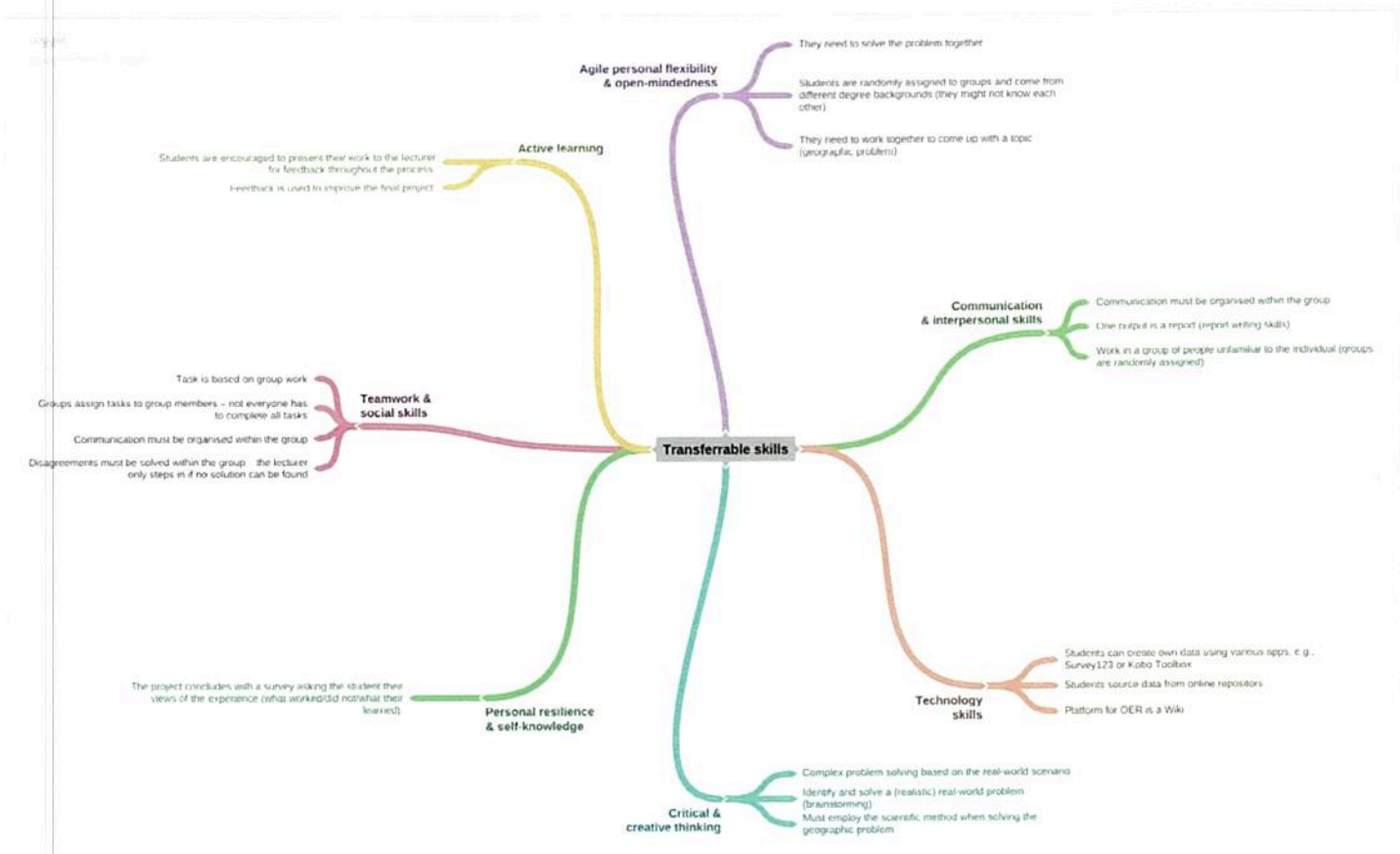
The aim of the task is to reduce the pressure students face in relation to traditional exams while introducing them to what

they will encounter in industry. This approach also introduces students to the tender process by expecting them to consider aspects such as:

- Identification and researching a suitable geographic topic
- Finding resources
- Creating the solution
- Presenting the solution
- Note that students do not have to provide a costing

Marks are awarded for 1) a report that simulates a tender document, 2) a project uploaded to a Wiki as an OER, and 3) a presentation in which the students simulate presenting the tender to the client. As a concluding action, students are asked to complete a survey to share their views of the project (reflection), which is used to improve the task for the next cohort of students.

The image below demonstrates the transferrable skills that students acquire through this approach (Mind map created using <https://coggle.it/>.)



Academic integrity

Elsabé Olivier – Department of Library Services

#nofakenews #training #integrity



A library is no longer a place where one only finds books or journals. The Department of Library Services also offers [free training sessions](#) for all registered University of Pretoria students and staff. Their information specialists also create resources such as these useful [tutorials or videos](#) to assist lecturers and researchers and they have recently launched a series titled Academic Integrity which will cover various topics of interest to researchers and lecturers.

Currently, the following three articles are available, but a new contribution is added weekly and will be available from the [library website](#):

1. [Plagiarism prevention at UP: the how, what, and why](#) (authored by Gerda Ehlers)
2. [Referencing tools: the how, what and why](#) (authored by Gerda Ehlers)
3. [Where to publish](#) (authored by Sunette Steynberg and Lesego Makhafola)
4. [Deep fakes](#) (authored by Isak van der Walt)

We encourage you to make use of this information and share it with your students. For your convenience, we add a link where you can easily identify your information specialist who can serve and assist you at UP: <https://www.library.up.ac.za/contact/infospecialists>

You are also encouraged to make use of the following general enquiry services:

- [Ask a Librarian](#)
- [Chat to a Librarian](#)
- Telephone: +27 (0)12 420 2235/5
- Whatsapp: +27 (0)66 509 1285
- Email: library.enquiries@up.ac.za

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Visible Anatomy

Elzette Korkie - Department of Physiotherapy

#application #collaboration #3-D



The anatomy modules in Physiotherapy are presented in the first year of study. Although the theory does not pose a challenge, students struggle to apply anatomical knowledge practically, which is crucial to evaluate and understand human movement. To address this challenge, different visual approaches are used in the second-year movement analysis class to reinforce students' prior anatomy knowledge.

Some examples are shown below. Students must palpate the muscle (apply knowledge) and then use cotton wool to show the course of the muscle (from origin to insertion) (Figure 1).



Figure 1: Lower limb muscle identification

Alternatively, they have to draw the muscle on the skin (right side) indicating the muscle fibre alignment and orientation (this was used as an alternative to a written anatomy class test). The 'memorandum' was a picture of the muscle sent to the class group and they had to correct themselves on the left

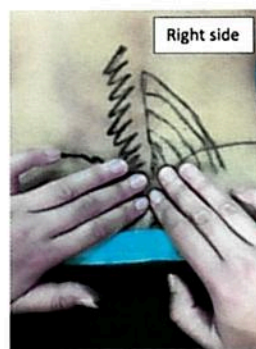


Figure 2: Muscle fibre orientation

side (Figure 2). Knowledge of muscle fibre orientation is of utmost importance when exercises are given, or muscle contraction or recruitment has to be facilitated.

Students' feedback on this approach included comments like 'real examples not only words on a blank page', 'helped in creating a fuller picture', 'detail with preparation', and 'given time to thoroughly discuss'.

The educational benefits of this approach are threefold. First, an abstract concept (muscles covered by skin) is simplified. Peer learning (the students worked in groups) created a collaborative learning environment.

The most important benefit, a two-dimensional (picture) anatomy is revised in a three-dimensional application.

The visibility of the muscle fibres and anatomical course of the muscles helps students to understand the relation of muscle groups to one another and guides them to palpate muscles, which improves their ability to explain exercises to patients.

Animal Science Feedlot Challenge: putting theory into practice

Este Van Marle-Köster – Department of Animal Science

#integration #farmtofork #experience



The Animal Science curriculum commences with two years of basic sciences during which modules such as chemistry, microbiology, biochemistry, and genetics provide the foundational knowledge for later modules in animal breeding and genetics, animal physiology, and animal nutrition. Animal Science is a professional degree, and the application of theory is therefore an essential condition to effectively work and function in the livestock industry.

The feedlot challenge project has been implemented for the first time in 2020, and during the curriculum revision of 2020 it was added as a practical project with specific learning outcomes.

The project consists of a theoretical component with formal lectures on feedlot feeding and management practices. These lectures are presented by industry experts, followed by a practical animal handling course. Students work in groups to prepare the pens and formulate and mix the rations before the cattle arrive. Cattle are identified and weighed on arrival and randomly assigned to the pens based on the statistical outlay for the project. During the 120-day feeding period, students need to feed and care for their animals twice a day (06:00 and 18:00). Feed is weighed daily to calculate feed intake per pen and cattle are weighed weekly. At the end of the trial, cattle are weighed and transported to the abattoir.

Due to the current outbreak of foot-and-mouth disease (FMD), students may not attend the final processing, but slaughter data is shared with the students. Assessment includes all management procedures performed as part of the practical group work, and a final written report (presented in poster format) reflects analysed data.

During this project, students have to integrate their knowledge and understanding of feed formulation and the physical properties of the rations; feed intake is calculated, and feed waste is monitored. Students visually inspect the cattle's overall well-being and where necessary provide enrichment for their enhanced welfare. Students gain experience in handling animals and learn the principles of good stockmanship.

The inclusion of final processing data and a braai competition completes the value chain from 'farm to fork'. The braai competition is done with input from Dr Hennie Fisher of the Department of Consumer and Food Sciences on preparing and cooking different cuts of meat on an open fire.

Due to the practical nature of the course, the learning outcomes are not restricted to the assessment of feeds and physiological/genetic parameters; students also learn to integrate knowledge and manage the day-to-day challenges of intensive feeding. They gain experience in trial layout and what is required for scientific research and statistical analyses of the data they collect. An important part of the project is learning to work in a group, be on time for the various activities and be able to adapt to challenges as they arise.

Students this year had the opportunity to write and submit a popular scientific article for the Stockfarmer, which has been published. Working on the article enhanced their writing skills, and its publication ensured that their project results were disseminated to the farming community. The UP feedlot project puts theory into practice and lays the foundation for well-rounded graduates able to learn, critically evaluate, respond and adapt to the challenges of their future profession.



The joys of job-hunting: Teaching (post-graduate) students the skills required to market themselves

Greg Breetzke – Geography, Geoinformatics and Meteorology

#self-knowledge #communication #marketability #creativity

One of the final assessments for GGY710 (Geographical and Environmental Principles) requires students to compile an evidence-based hardcopy file of their 'journey' as a Geography Honours student throughout the year. During the process of collating evidence for their portfolios, students should reflect on the Honours journey that they have just completed. One component of the portfolio requires the students to provide a short overview of the types of jobs/careers that they would like to pursue after their studies (i.e., making use of a list of skills and requirements provided in job advertisements

that they would like to apply for). Students are also required to search for job opportunities and/or internships that are advertised throughout the year, select 1-2 opportunities and write a short motivation letter to one of the listed companies/organisations detailing why they would be the ideal candidate for the position/s. Students may attach a shortened version of their CV to their portfolio but this is not mandatory. Below are some examples of advertisements and motivational letters written by previous Honours students in the 2020 Honours cohort.

Dept of Mineral Resources (DMR): Internships 2020 / 2021 - StudentRoom.co.za

821 Richmond Street
Wingate Park
Pretoria
0153

RE: ASSISTANT ENVIRONMENTAL CONSULTANT

To whom it may concern,

I hereby apply for the Assistant Environmental Consultant position that was listed through the jobwebsite.

I am [redacted] a postgraduate student at the University of Pretoria (UP), currently busy with my degree BSc Honours in Geography and Environmental Science. My passion for nature and the environment started when I was in primary school and I first heard the song, "We Kill the World" by Boney M, that says that, we as humans are destroying the world and we need to stop. I decided then that one day I will someone to stop humans from "killing" the world. I have chosen my career in Environmental Science because I want to advise clients how to manage environmental issues and reduce the company's overall carbon footprint. I am passionate about protecting, preserving, and restoring the environment and want to advise clients to eliminate future environmental damage so to save our beautiful planet for future generations.

I believe that the modules that I have passed give me a strong educational background (see UP Academic Record), as well as the research experience gained during my studies at UP. This will make me a valuable asset to your company, and I would appreciate your careful consideration of my credentials as presented in the copy of my attached CV. Reasons why I believe I might be a suitable candidate working for your company:

- I am hardworking, disciplined and committed to make a success of my studies. My academic performance has increased a lot and I have already passed three modules of my postgraduate year with distinctions. I have developed in one of the top students, recently being accepted into the Golden Key International Honour Society.
- I am well organized and detail oriented in my approach to completing assignments. I can plan, conduct fieldwork, capture and analyse data, present findings and write reports. An example of this ability is demonstrated with my Honours research project - Assessing the effect of a gravel road on ant abundance and richness on a farm in the Free State province. I went well beyond the requirements of the task, putting in a lot of extra effort a very challenging year with lock-down regulations. I have proven to have the perseverance, initiative and intellectual creativity necessary to complete any research project with success.
- Throughout my final year completing my BSc in Environmental Science, several assignments were group assignments for which I was selected as group leader. I was also responsible to present our final reports to the rest of the class. This shows my ability to delegate, coordinate and communicate.
- Through various assignments I did over the course of my studies, I have obtained skills in MSOffice, specifically Word, Excel and PowerPoint, I am also qualified in Geographic Information Systems (GIS 220, GIS 310 and GIS 310).
- I am currently one of the tutors at UP in Southern African Geomorphology, an opportunity I'm very proud of and take very serious. I am good in assisting junior students because of my passion for nature and the environment.

I am a full-time student; therefore, I do not have work experience, but I am eager to gain hands-on experience from knowledgeable and passionate professionals working for your company. I am able to quickly grasp what is needed, work independently with minimum supervision and take responsibility for the successful completion of each assignment. The possibility of joining your company as an assistant environmental consultant would make a significant advancement in my career.

If you need additional information or documents, feel free to contact me on [redacted] or [redacted].

Thank you for your consideration, and I look forward to personally discussing my application with you.

Sincerely,
[redacted]

Motivation letter to the Department of Mineral Resources and Energy

Department of Mineral Resources and Energy

22 September 2020
Trevenna Campus
70 Menzies Street, Sunnyside
Pretoria

RE: 2020/2021 Internships

I hereby submit my application for the proposed internship at the Department of Mineral Resources and Energy. I am in the process of completing my BSc Honours in Environmental Sciences and Geography and plan to graduate at the end of 2020. I am also enrolled in a Professional Project management course for admittance to the PMBok certification exam as I believe this will enhance my expertise in implementing projects in the workplace. I am very passionate about the work I do and believe that with hard work I can contribute to the Environmental and Environmental Management sector. I am ready to apply myself and the knowledge I have gained in university to further enhance my expertise and learn how to successfully complete and handle projects.

I am hoping that in the completion of my project management course I will be able to successfully handle projects as well as other people working with me on these projects as a team leader. I have excellent communication skills and always work well with other people during teamwork. I have always been driven and I do well as a team leader. I believe that I am the candidate which you are looking for and I trust my application will be successful as I believe on-the-job training will provide me with the required experience to implement my knowledge. I am willing to work hard and work from mentors in this department so I can contribute to towards this sector in future.

Yours faithfully

Motivation Letter

[redacted]
Plaas Elandsfontein
Mashashane, Limpopo

26 August 2020

StarFire
Goodwill Road, Pretoria, Gauteng
012 844 0799

Dear Sir or Madam,

I am writing this letter to accompany my curriculum vitae for the position of Human Resource Policy Analyst at StarFire.

This semester will be my last as a BSc. (Hons) Geography and Environmental Sciences student at the University of Pretoria. After four years of dedicated studies, I am ready to start my professional career and feel that I would be a great asset to your team. I am very interested in the work that StarFire does, and believe that my knowledge will greatly benefit your various research projects.

My passion for finding solutions to problems, as well as my desire to make the world a better place makes me a good candidate for this position. I also feel that I possess most of the qualities that you require for this job, and that my understanding of the human-environment relationship and interaction will greatly benefit my insight into the world of policies. Although I do not have a lot of professional experience yet, I am a fast learner and extremely dedicated to any task that is handed to me.

I am more than willing to provide you with any additional information that you might need. You can call me on [redacted] or email me at [redacted]. I look forward to hearing from you.

Sincerely,
[redacted]

Integrated assignments and more

Hanneke du Preez¹, Tanya Hill¹ & Karel Fouche²

¹Department of Taxation & ²Department of Auditing

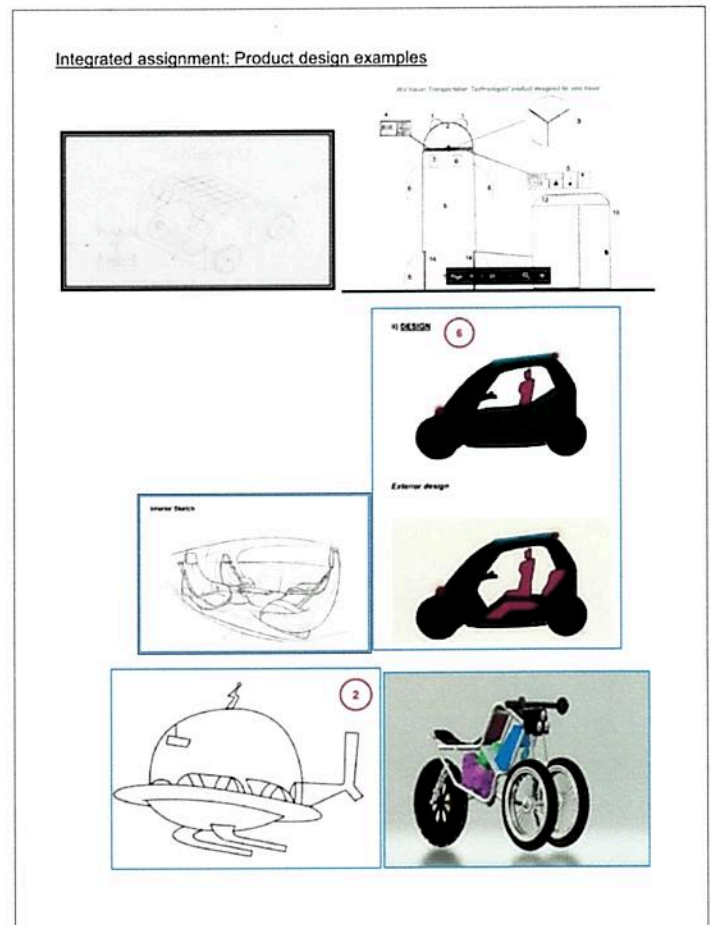


During the past number of years, we developed several teaching interventions in the Faculty of Economic and Management Sciences to support and enhance our lecturing. Through the teaching interventions, we aim to provide students with equal opportunities for exploring and learning new knowledge and skills. Three of the teaching interventions are an eFiling simulation, an integrated assignment, and virtual reality experiences. All three interventions were supported by SoTL grants.

We developed an online website that **simulates SARS's eFiling platform**. The simulated website was developed by using screenshots from [SARS's eFiling website](#), assisted by a website developer. The project is rolled out with our post-graduate Taxation students in the form of an individual taxpayer case study. Through this simulation, students are given the opportunity to practice various functions on the website which they will perform in the workplace.

The functions developed on the [simulated website](#) include the submission of a tax return, uploading documents after being selected for an audit by "SARS" and objecting to an additional assessment made by SARS. Feedback from the students regarding boosting their confidence by practically applying their skills in the workplace in the future was overwhelmingly positive. For more details regarding the project and research, you can refer to our [Flexible Futures presentation](#).

The **integrated assignment** introduced students to investors in the flexible transport business sector, to establish a new business venture for the development of smart transportation technology in a South African context. The assignment was rolled out in three phases over the academic year. Self-assigned groups were required to establish a business plan with a **product design** and present it to investors in writing together with a [verbal presentation on YouTube](#) in Phase 1. They further applied their knowledge by considering legislative requirements, business models, organisational structures, capital investments, and internal controls, such as automated business processes, in Phase 2. The processing of raw data and documentation into financial statements and developing graphical presentations for investors, using MS Excel, enhanced their digital skills in Phase 3. Feedback from students' reflections indicated that they enjoyed group work. Students' responses were generally positive towards the integrated assignment indicating that they may understand the importance of integration. For further information, refer to [a presentation](#) about the intervention.



Virtual reality (VR) is used to expose students to real-life scenarios that they need to know about and experience but cannot visit as a group due to student numbers and financial constraints. Students are immersed in experiences, for example, a [stainless-steel factory](#) or a [practice of a medical doctor](#). We also immerse them in interactions between clerks and managers for [interviews](#), [performance appraisals](#), [ethical dilemmas](#), etc. These situations will be impossible to visit in person due to privacy issues. By exposing them to different environments, we provide them with lived experiences that may become valuable to them once they enter the world of work. VR can thus simulate lived experiences for students to empower them with skills for the future. Students experience the exposure to VR as very positive and enjoy the class activities. Learning should be fun! We are currently working on a negotiation skills course using artificial intelligence.



Sewing for sustainability and success

Hanri Taljaard-Swart – Department of Consumer and Food Sciences

#communityengagement #entrepreneurship #productdevelopment #SDGs



always possible, students provided artists and embroiderers with pattern pieces that form part of their proposed collections together with suggested themes, which they could then interpret as they deemed fit. The pattern pieces were embroidered by the Mapula embroiderers and sent back to the students, who then incorporated the pieces into their collections.

By working closely with Mapula Embroideries, real-life issues such as sustainable cities and communities and economic growth are being addressed; this project thus creates the opportunity for Mapula Embroideries to ultimately create an entity that is sustainable and economically sound.

At the same time, students are given the opportunity to 'teach' and transfer their knowledge, in juxtaposition to the learning that predominantly forms part of student life. Many life lessons are learned in the process that cannot necessarily be learned in a classroom environment and ample experience is gained by collaborating with an external entity to deliver a shared outcome.

This module exposes students to real-life issues and scenarios that they will be facing when they enter the work environment, and the hope is that these students are equipped with a backpack full of skills and know-how to make a roaring success in the big adventure that awaits them after university.

The following are quotes from students who have completed the KLR 411 module in the past few years:

Product Development (KLR 411) is a core module in the B. Consumer Science Clothing Retail Management degree programme. This module was developed to impart entrepreneurial, business, and product development skills to students. The overall objective is to study clothing from a small business marketing and management perspective, and to be able to make economic and strategic decisions regarding the managing and marketing of a clothing business.

In addition, the module covers the development of new clothing products that meet the needs of the selected target market, as well as the critical aspect of sustainability. More specifically, students are required to incorporate the three dimensions of sustainability, namely the planet (environmental performance), people (social performance), and profit (economic performance) into their product development process and suggest business ideas that are grounded in the UN Sustainable Development Goals (SDGs). The main touchpoints of the SDGs are sustainable consumption and production (Goal 12), sustainable cities and communities (Goal 11), and decent work and economic growth (Goal 8), which tie in with the triple bottom line and align with the Mapula community engagement project, which also forms part of this module.

Students work alongside Mapula Embroideries, which is administered through the Mapula Embroidery Trust (a registered non-profit organisation), to develop and produce clothing collections that would expand Mapula's product range, reach more consumers, and increase their profitability. During the last two years, when traveling and site visits were not

“I definitely learned a bunch of new things about the industry that I am going into. One day, I would like to establish my own brand and this module gave me great insight”.

“What worked for me is how the module takes an applied approach rather than focusing solely on theory. This provides insight at how the theory learned is actually going to be utilized throughout our careers”.

“Sustainability is such a pressing issue these days and definitely needs to be addressed in formal education in order to allow for change. It is so important that we all adopt a more sustainable way of thinking. By including this in the curriculum we are able to develop an outlook that is more sustainability-based and apply this to our lives as well as to our work environments. Hopefully, this results in more sustainable companies and a much-needed change”.

“When we start out in our first jobs, the company may look to us for new innovative ideas to become more sustainable. We will be able to equip the company as we spent a lot of time researching the matter. I am very grateful that we get the opportunity to learn topics such as these. It has created a new passion in me”.



Modernising a Culinary Arts subject for the 21st-century hospitality world

Hennie Fisher & Gerrie du Rand, Department of Consumer and Food Sciences
Leon Roets & Antonia Makina, University of South Africa

#openmindedness #creative thinking #teamwork



We wanted to understand and apply currently enrolled (2022) students' perceptions of curriculum transformation to the VDS 414 Culinary Arts subject. We acknowledge that professional tertiary culinary training is primarily based on Western modern cooking principles and methodologies. Even in countries that were never colonised, such as Thailand and Ethiopia, school and post-school food preparation training are mostly rooted in a more commercialised way of preparing and consuming food.

The University of Pretoria's transformation drive, which references the principles of Ubuntu values ('I am because you are' or 'humanity towards others') and the catch-all phrase 'graduateness', were used to re-evaluate the curriculum as well as teaching and learning practices in the classroom. This research project investigated what is needed to re-imagine education and arrive at an improved curriculum that emphasizes upliftment, diversity, inclusivity, and belonging, and sustainability through community connections, to deliver graduates who are prepared for service in and to society.

The research team included curriculum experts and sociologists from the University of South Africa, who guided the research plan to ensure that student inputs on a transformed curriculum are heard and recorded to inform decision-making. Reflective ethnography was used as the principal methodology within a wider multi-staged situation analysis framework. In 2021 the researchers requested enrolled students to write a reflective essay to share their perceptions of curriculum transformation (baseline situational analysis).

These essays informed a structured questionnaire completed by 2022 enrolled students. Culinary Arts is a 4th-year BConSc and BSc Culinary Sciences core module, which aims to prepare students for any number of professions within the food value chain. Some students take up professional cookery as a career, but most use the extensive managerial and scientific training gained through other auxiliary subjects to find jobs in food development and innovation, food and beverage recipe testing, food laboratories, and many others.

Data was collected from the 2022 questionnaire as well as a focus-group discussion where students were offered the opportunity to confirm their views and clarify any uncertainties.

The following are examples of what students felt when asked about curriculum transformation of the subject:

"The world is moving towards more cultural trends. Students need to be able to keep up with those trends without disrespecting/misrepresenting the various cultures. To do this, students need to be educated about these cultures and be familiar with them".

"The various students that study culinary arts come from varying backgrounds with varying levels of exposure. There should be more experiences such as site visits which would allow students to be exposed to the various aspects of the hospitality industry".

Figure 1 shows that students felt very strongly that the culinary arts subject should be relevant and applicable, that they want to be employable after completion of the course, but also that the skills and knowledge they gained should be transferable and at the same time flexible to adapt into different parts of the food and tourism industries. Students felt the least strongly about the relevance of personal and social development within the subject.

ELEMENTS	RATING				
	1 NOT AT ALL	2 LOW	3 NEUTRAL	4 HIGH	5 VERY HIGH
Relevance (talking to needs of industry and society)	0	2	4	10	3
Applicable (practical to be done in real world)	0	0	2	7	10
Employability (knowledge, skills and attitudes to enhance employability)	0	1	2	7	9
Transferability (transferring knowledge to other context or situations)	0	0	2	8	9
Adaptiveness (flexible to change)	0	1	4	9	5
Personal and Social Development (inter-and intra-personal skills)	0	2	6	8	3

Figure 1: Student assessment of the relevance of the culinary arts course (N=19)

Students were requested to rate individual lessons in terms of difficulty level and the knowledge they felt they had gained, as presented in Figure 2. Interestingly, students felt that they gained more knowledge in focused lessons (e.g., the chocolate lesson) than in lessons that were designed to gradually build general knowledge with every lesson as the semester progressed (for example, from the first celebratory cake lesson to the final practical examination lesson).

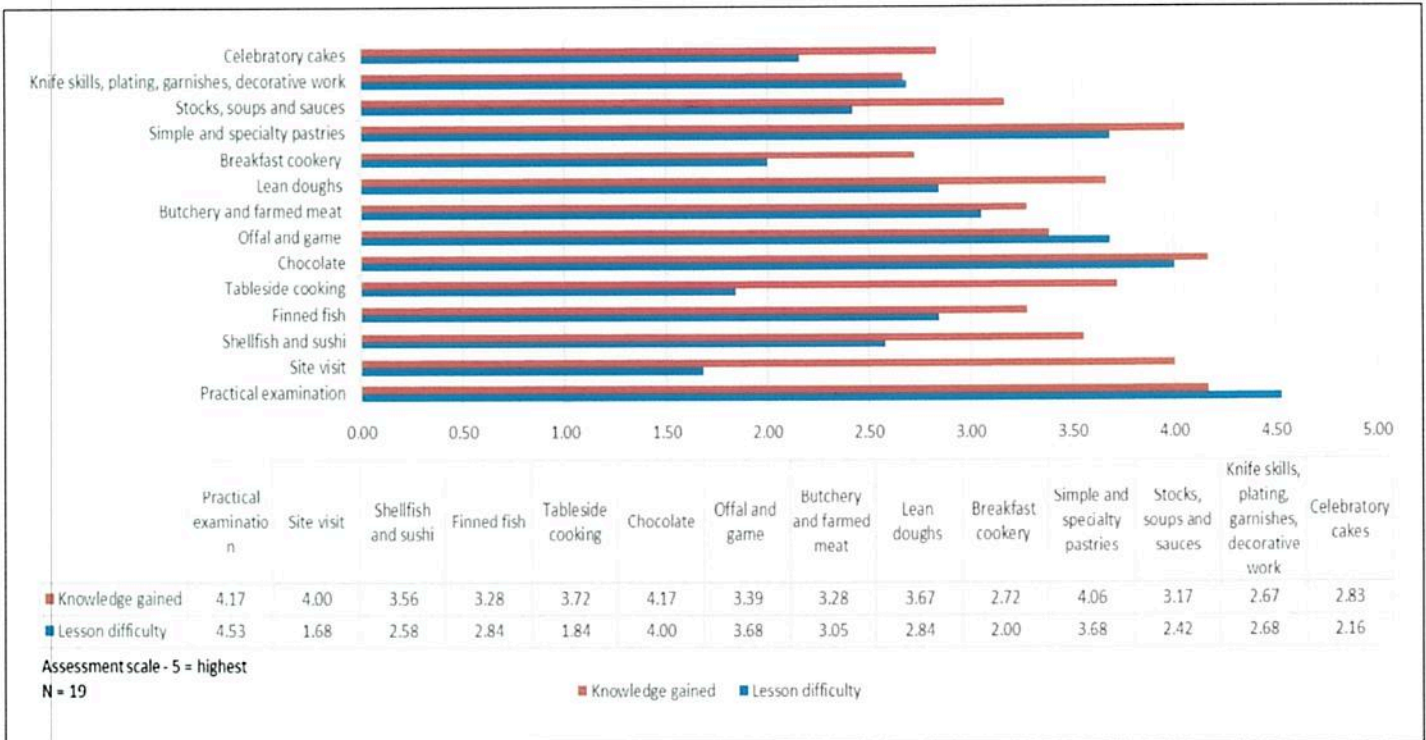


Figure 2: Student perceptions of lesson difficulty versus knowledge gained (N=19)

Immediate changes to the curriculum included increased interaction between students and industry role players by establishing links with high-end restaurants and the introduction of more diverse African traditional cuisine items in the cooking programme as well as their cultural meaning. Students were also encouraged to use their own initiative to change selected menu items to use more indigenous ingredients and to celebrate cultural food heritage by displaying some rituals and traditions which are used in preparing and serving food.

The baseline research was presented as a SWOT analysis at the 2022 Gastronomy Summit in Belfast, Northern Ireland, while the 2022 analysis was presented at the Flexible Futures 2022 Conference.

We are planning a full-circle research project which will incorporate a second phase involving food industry stakeholders to determine their needs and beliefs about the abilities graduates from our university should be equipped with.



Some of the amazing products they create.

The business challenge: exposing students to the principles of mineral economics

Lorenzo Milani - Department of Geology

#realworld #investors #communication



The Economic Geology course undertaken by Honours students in the Department of Geology involves a study of the mining industry and mineral economics. The module offers students the opportunity to interact with geologists who commonly evaluate mining projects for investors; these geologists generally have considerable experience in exploration and a strong background in finance.

The guest lecturers, Tim Raymond and Adriaan de Beer, train students on the principles of mineral economics in the South African mining industry. The module covers the contextual factors of mining, including the sustainable value chain from exploration to sale. Students also learn about the PESTEL (political, economic, social, technological, environmental, and legal) factors which drive the strategy in any business plan. Lastly, students are taught how ESG (environmental, social, governance) criteria must integrate with the investor's need to balance environment, equity, and economy. Part of the training is given at the Royal Bafokeng Platinum Mine in the North West province where students spend three days visiting the main facilities of the mine and even have an opportunity to go underground.

The final output of the project, which also represents the final exam, is named 'The Business Challenge'. Students work in teams to prepare a business plan dealing with geology. They must identify a case from a range of aspects such as mineral exploration, mining expansion, mergers and acquisitions, GIS and technology, geophysics, and consulting, among others. The project is meant to challenge their thinking and decision-making whilst using their geological knowledge, in addition to expanding their understanding of the contexts in which geologists operate in industry. The contribution of Dr Ina Louw, who coaches students on how to prepare an impactful



presentation, is also essential. This year, four groups presented proposals during the exam day to an evaluation panel which included their lecturers, external examiner, and a group of real investors.

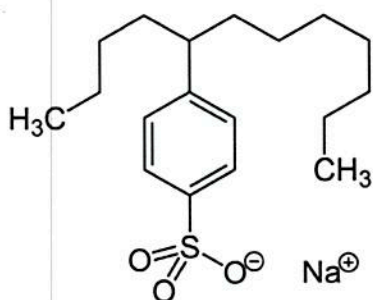
The evaluation panel considered the following main points in their assessment of the students' outputs: reasons for choosing a specific business, adoption of new technologies, cost control, diversification, expansion, competition, changes in mining techniques, and supply and demand. The panel felt that all the presentations were of a high standard.

Representing one of the flagships of the Geology Honours degree, this project has proven to be extremely beneficial to students. It is a unique chance to experience the reality of the world of mineral economics, providing students with opportunities to interact with people from industry and acquire new perspectives on their future careers as geologists. The project also imparts a range of transferable skills such as creative thinking, communication, teamwork, personal resilience, cyber skills, scientific processes, business thinking, leadership, and open-mindedness.

Chemistry – the molecular basis of sustainability

Lynne Pilcher, Micke Reynders - Department of Chemistry

#SDGs #future #systemstinking



The basic sciences are critical to meeting the challenges posed by some of the UN Sustainable Development Goals (SDGs) such as zero hunger, good health, clean water, and affordable and clean energy. To respond to these challenges, an understanding of chemical substances, their transformations, and their interactions within the earth's system is needed.

Similarly, the nine processes in the planetary boundaries have direct links to chemistry. Thus, chemistry underpins considerations of how present and future generations can live within the limits of our natural world. This is described as chemistry providing “the molecular basis of sustainability”. Hence, the UN General Assembly has proclaimed 2022 as the International Year of Basic Sciences for Sustainable Development.

Chemistry is not just a fundamental science; it is also very complex. In making chemistry accessible to students, chemistry education has taken a reductionist approach, considering topics of chemistry one by one. Unfortunately, students often experience learning chemistry in this way as isolated and fragmented disciplinary knowledge.

Systems thinking goes beyond fragmented knowledge to an engagement with complex systems as a whole. Systems thinking has been identified as a key competence needed to build transition strategies toward sustainability. Reorienting chemistry education with systems thinking would provide a framework for connecting chemistry knowledge at the molecular level with the needs of society and the sustainability of the earth, and would make the relevance of chemistry obvious, thereby advancing meaningful learning.

To address the shortage of know-how on integrating systems thinking in chemistry education, two MSc projects within the Centre for Science Education in the NAS faculty were dedicated to developing teaching interventions in first-year chemistry. Micke Reynders, supervised by Lynne Pilcher and Marietjie Potgieter, researched a surfactant in laundry detergents (see Figure 1). This project, serving BSc students, was implemented in CMY 127 online in 2021 and is being

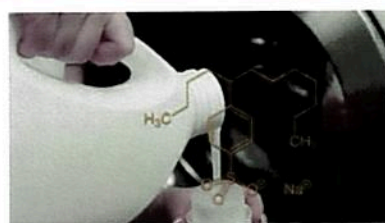


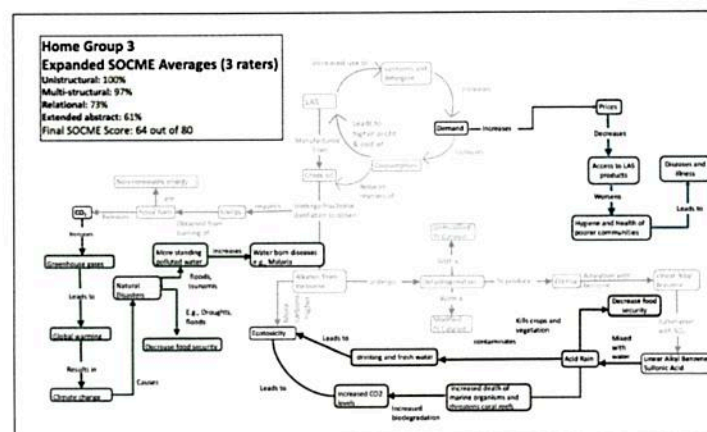
Figure 1: Laundry detergent

implemented face-to-face in 2022. Micke won the UP stage in the Visualize Your Thesis competition hosted by the University of Melbourne and will be one of two South Africans participating

in the international competition later this month. The Visualise Your Thesis is an international competition that challenges graduate researchers to present their research in a 60-second audio-visual explainer. The competition provides an opportunity for universities from across the world to showcase their graduate research and for the competitors to build essential information and digital literacy skills to effectively communicate complex research to a general audience. You can watch her video clip [here](#) and see her systems-oriented concept map [here](#).

The second project on the sustainable manufacture of aspirin developed by Cathrine Chimude, supervised by Lynne Pilcher and Dorine Dikobe, was designed for our service courses to first-year engineering students (CHM 171 and CHM 172) and will soon be implemented for a second time.

It is rewarding to see future scientists and engineers discover the relevance of chemistry to their range of careers, and that they can play a role in addressing sustainability.



Preparing IS programming students for future work: Scaffolded connectivism as a teaching and learning approach

Machdel Mathee - Department of Informatics, SIT, EBIT



#scaffolding #knowledgeorganization #cognitiveload

For several years now, the focus of the teaching approach for second-year Information Systems programming students has been on autonomy and self-management of learners, online communities (in the form of WhatsApp groups), and access to a diversity of available resources on the internet. This approach closely aligns with a recent pedagogy's principles, namely connectivism.

The central premise of connectivism is that knowledge resides in networks of human and non-human nodes and that learning takes place by drawing on and being part of the networks. This connectivist approach to teaching and learning also reflects how professional programmers learn and interact; for this reason, we believe it is an appropriate strategy to prepare IS programming students for their future careers.

However, this approach is experienced as overwhelming, especially for beginner programmers, as many of these students find it difficult to identify examples on the appropriate level. Connectivism, as pedagogy, does not give enough attention to the limitations of human working memory (which underlies cognitive load theory). In addition, connectivism says much about connecting to knowledge networks but little about constructing new knowledge. This limitation necessitates the supplementation of connectivism with proper scaffolding of challenging and new learning material. Scaffolding refers to the well-planned exposure of students to increasingly complex material until they have the skills to master the material on their own.

We assume that students can only choose from the vast sea of information and make meaningful connections if they have at least some existing mental schemas to inform the choices. So although students already

have access to recorded and live lectures and comprehensive and challenging homework assignments, this has proven insufficient within the current approach.

However, we believe their learning and programming self-confidence will improve by, for example, providing students with access to worked examples and a pathway of exercises compiled from existing resources. These examples can then be integrated into the course presentation adhering to the principle of scaffolding, demonstrating best practice and thereby limiting students' cognitive load.

Therefore, the intervention's objective is to establish scaffolding as a means of limiting students' cognitive load as they navigate the programming course material through meaningful micro-learning practices such as worked examples and short exercises. This approach will equip students with foundational knowledge and a road map to better navigate and choose from the vast number of internet resources available.

In the past, students did not receive links to worked examples. However, following the new approach and staying within the principles of connectivism, students are given a link to connect them to a valuable resource (ww3schools). Assuming students will not be able at this point to discern the valuable worked examples from the other, we also point that out.

These ideas have been put into practice from 2022, and initial results, based on students' feedback on the UP-administered course evaluation survey, point towards a more positive learning experience than in 2021. Please engage with me if you want to try a similar approach.



The use of VR technology as an alternative to real-world field trips: a study in the geomorphology

Micheal Loubser - Department of Geography, Geoinformatics and Meteorology

#fieldtrips #virtualreality #reallife

There is an important correlation between theory and practice in Earth Sciences like geomorphology, and a critical aspect of any Earth Science subject is making sure that students understand this link. For example, while a student may understand the theory of how a gully forms, actually standing in one and observing the effects of soil erosion firsthand deepens their grasp of the mechanics involved. Traditionally, this link was established via field trips, in which the theoretical information discussed in the lectures was demonstrated in real-world conditions.

However, in recent years, undergraduate field trips have become more difficult to arrange, due largely to a combination of increasing student numbers and the Covid-19 pandemic. To combat the loss of this educational aspect, online alternatives were sought and tested at both an undergraduate and a postgraduate level.

360° cameras are widely available and cheap to obtain (for example a GoPro MAX can be acquired for around R10 000), and the footage that they shoot can be viewed with almost any standard smartphone that contains an internal gyroscope. Additionally, the combination of a free cellphone app and a cheap virtual reality (VR) holder allows for the creation of a rudimentary VR setup that allows the user to view the footage simply by turning their head, which increases the immersion factor considerably (Figure 1). To explore the possibilities of this technology, two pilot studies were carried out in 2022 in the Department of Geography, Geoinformatics and Meteorology at the University of Pretoria. The first study was with an undergraduate module being taught entirely online, and the second study was for a postgraduate module taught face to face.



Figure 1. A cheap cell phone holder for VR functionality

At an undergraduate level, a series of 360° videos were filmed in both laboratory and field conditions that addressed specific concepts directly related to material that was taught in class and distributed to the students as auxiliary information via YouTube.

At a postgraduate level, a series of 360° still photographs were shot at Golden Gate National Park that was then discussed in class with students, using VR headsets, as preparation for a real-world trip to Golden Gate (Figure 2). This session also contained an exercise for marks.

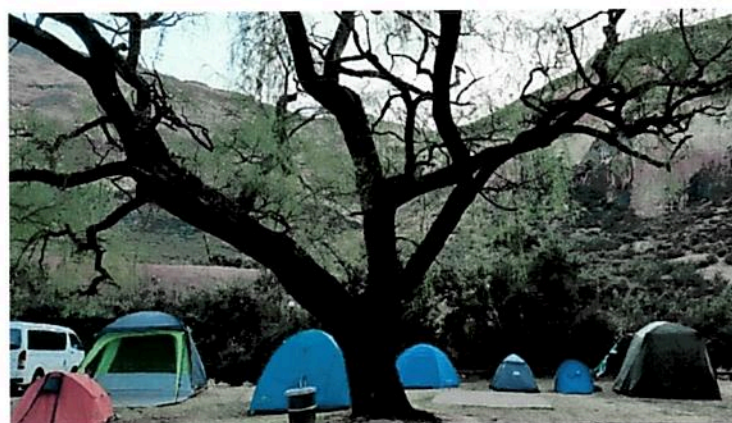


Figure 2. Postgraduate field campsite, Golden Gate National Park

The undergraduate study was unsuccessful, with the students not being receptive to the VR videos in a purely online environment and without a mark incentive. Mark incentives aside, the increased bandwidth requirements for 360° videos, coupled with the fact that the videos are less compelling without the VR headsets may have contributed to this.

The postgraduate study, on the other hand, was extremely successful. The students universally enjoyed the experience and stated that it was an excellent preparatory exercise for the real field trip, giving them insights into what they could expect. However, they did not feel that the VR experience could replace a field trip, but worked better in conjunction with one, although they acknowledged that VR would still be useful if a field trip were not possible at all. This information will be used to expand this exercise further in 2023.

Preparing work ready development agents for Africa: increasing capacity for intervention in agriculture and rural development in Africa

Moraka N Makhura - Department of Agricultural Economics, Extension & Rural Development



#exposuretoindustry #excursion #teamwork #groundedness

The University of Pretoria's Department of Agricultural Economics, Extension and Rural Development (AEERD) in collaboration with African Economic Research Consortium (AERC) have been hosting almost 100 Master's students in a shared facility for specialization and electives annually. The students come from participating universities in Southern and Eastern Africa under the Collaborative Master's in Applied and Agricultural Economics (CMAAE) Programme, in which Agriculture and Rural Development is one of the four foundation streams. This stream focuses on issues and pathways for development, and three planned annual activities form part of the programme to prepare students for the work environment.



Agent at the Fresh Produce Market demonstrating how trade takes place at the floor.



Mr Tshifhiwa Madima, one of the Executives at the Fresh Produce Market welcoming students and lecturers at the market.



Seated Front from right to left is Prof Hegler from Australia, Prof Lagaat from Kenya, Dr Ekere from Uganda and Dr Makhura from UP).

The first activity is an excursion. Following exposure to different theoretical perspectives, students undertake an excursion to mega institutions in South Africa that demonstrate and drive development. The purpose of the excursion is to assist students to reimagine their vision of development and expand their thinking and imagination from smallholder agriculture and underdevelopment to large-scale institutions.

The intention is to expose students to advanced development practices that they will be able to introduce in their workplace or space of influence (their own communities, countries, or the continent). In the past, students have visited Karan Beef, the biggest feedlot in the southern hemisphere, the Joburg Market, the biggest fresh produce market in Africa, and the Tshwane Market.

During excursions students are encouraged to test some of the concepts studied in class by engaging with the institution they are visiting in greater depth. The programme starts with a presentation by the institution being visited, followed by a walkabout through the different operations. For example, at Karan Beef students saw how animals are treated on arrival, how they are managed in the feedlot, and prepared for distribution. All these aspects are presented in the context of the supply and demand value chain.

The second activity involves developing a team-based project to evaluate the current position of several African developments. The following developments have been covered in previous years: Africa Agenda 2063 and development (2018); Connectedness and development (2019); Covid-19 and development (2020); Africa Free Trade Agreement and development (2021), and Malabo Declaration Biennial Reporting and development (2022).

The third activity requires students to adopt and profile their own villages and localities. This is meant to ground them in their places of origin and to understand development in context.

Preparing students to be work ready development agents requires a deliberate approach, such as introducing specific examples that stimulate their thinking about the environment and guiding them to link their theoretical learning to the field experiences they were exposed to.

[Video](#) from 2015 about Karan beef.

Second-hand clothes put to good use

Nadine Sonnenberg – Department of Consumer and Food Science

#charity #upcycling #trash



Clothing and textile waste is undoubtedly one of the global fashion industry's most concerning contributions to environmental deterioration and climate change. Widely recognised as one of the most polluting industries in the world, the clothing sector has over the past few years been severely criticised for its 'fast fashion' approach, enticing consumers to buy cheap, mass-produced apparel which they carelessly discard after a few washes to make way for the latest trends.

Apart from the environmental cost associated with clothing production, garments that are discarded in landfill have dire consequences involving toxic chemical leachates, greenhouse gas emissions, and the destruction of natural resources and habitats, threatening the health and well-being of communities. These practices significantly affect Africa in particular. While most consumers absolve their insatiable appetite for fashion by donating their unwanted garments to charities, they seldom consider the journey beyond the point of donation.

A recent documentary, entitled 'Dead white man's clothes' drew attention to the shocking after-effects of an estimated 15 million donated garments shipped from developed countries to Ghana on a weekly basis, resulting in mountains of unusable, lower-quality textile trash (Besser, 2021).

Against this backdrop, final-year B. Consumer Science Clothing Retail Management students in the Department of Consumer and Food Science participated in the Clothes to Good (CTG) community project from

March to June 2022 to gain first-hand experience in the complexities of handling clothing and textile waste.

CTG is a local textile recycling and disability empowerment organisation that has recycled hundreds of tons of post-consumer textile waste on an annual basis over the past decade. In collaboration with major fashion brands, CTG is committed to meaningful, sustainable positive social impact in enterprise development, inclusion (especially people with disabilities), and caring for the environment.

During weekly site visits, students sorted donated clothes and shoes into categories (based on the EU textile waste hierarchy) for the purposes of reselling, repairing, upcycling and downcycling. At the end of the semester, students delivered proposals for streamlining and extending the activities of CTG, which were well received by its founding members and other key staff members.

Students agreed that this project opened their eyes to the intricacies of dealing with textile waste and that it would inevitably inform their perspectives going forward into the work environment. All stakeholders in the fashion supply chain have a role to play in the pursuit of circularity, necessitating the new generation of fashion designers, manufacturers, and retailers to exercise greater caution in the choices they make.

Reference:

Besser, L., 2021. Dead white man's clothes: second-hand clothes creating toxic landfill in Ghana. <https://www.youtube.com/watch?v=tQgSqKp9bjM>. Accessed 20 November 2021. Clothes to Good (CTG), 2022. About us. <https://clothestogood.com/about-us>. Accessed 15 October 2022.



Giving students a glimpse into the hidden kingdom of fungi

Dr Velushka Swart and Prof Noëlani van den Berg – Department of Biochemistry, Genetics and Microbiology.



#foodsecurity #sustainability #pestcontrol

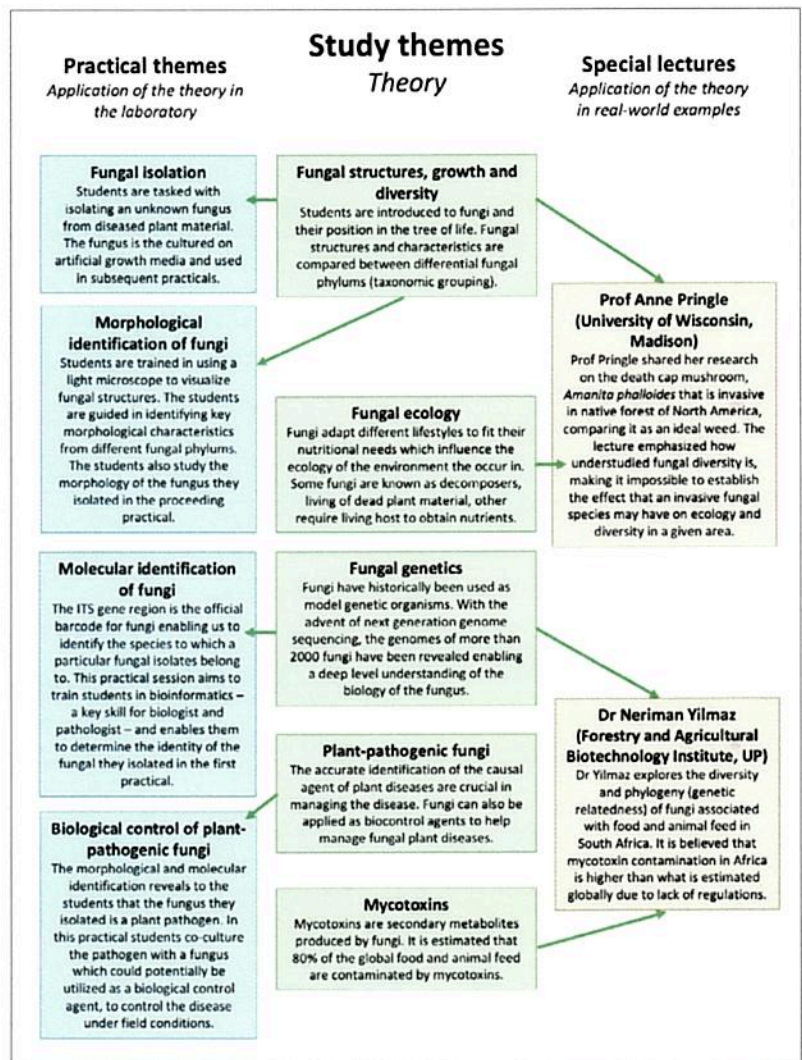
What rules all life on land? Not us humans, but rather a kingdom more closely related to animals than plants - the fungal kingdom. Some fungi are pathogens of humans, animals, insects, and plants. One fungus may cause severe economic impacts and threaten food security, while another fungus can be employed to control pests and pathogens. The question is how we distinguish friend from foe.

Understanding the diversity that exists in the fungal kingdom can provide us with the tools to change the world as we currently know it. In MBY 261: Mycology (the study of fungi), we expose students to the wonderful world of fungi.

Students' ability to engage with the module content is enhanced by providing synchronised lectures and practicals that enable the application of theory. We train students to employ fungal morphology and utilise genetic tools and bioinformatics to identify fungi, challenging them to work together in the laboratory and to communicate their research. We also aim to demonstrate to students that the skills and theories they are taught have real-world applications.

We have done this by inviting experts in the field to present guest lectures, demonstrating how an understanding of mycology can be applied to address issues such as invasive fungi which threaten diversity as well as mycotoxin contamination of crops that threaten food security. But fungi can also be used to address issues. For example, certain species of fungi suppress the growth of other micro-organisms and provide benefits to plants; these beneficial fungi can be employed as biological control agents in the management of plant fungal diseases, lightning, or dependence on a chemical application in farming.

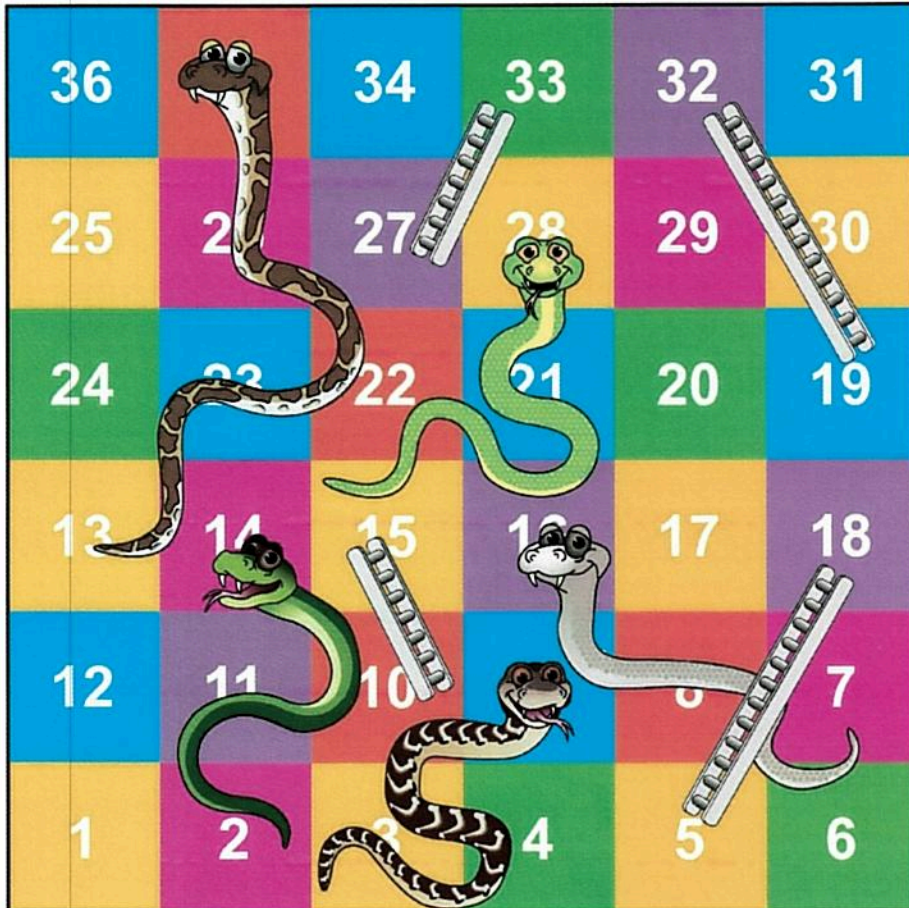
In essence, our aim is to entice students to venture into the fungal kingdom. We challenge them to ask critical questions and consider how fungi impact our daily lives, and how fungi can be exploited in our endeavours toward a more sustainable future.



Gamification in Statistical Education

Paul J. van Staden, René Stander & Salomi du Plessis

#programming #simulations #snakesandladders



The rolling of a fair die has traditionally been used as an introductory example in teaching the topic of probability in Statistics modules and textbooks. Although most students find this example mathematically and computationally straightforward to understand, it does not lend itself to student engagement or statistical intuition development.

The STC 122 lecturing team, therefore, created a gamification activity in STC 122 based on the classic board game Snakes & Ladders (S&L). Because all students are not familiar with this board game, we referred them to online videos explaining the rules of the game.

We also simplified some of the rules. For instance, we used a 6x6 board layout from 1 to 36 with fewer snakes and ladders compared to the typical 10x10 board layout from 1 to 100. Of course, since we are South African, the five snakes on our board are local: black mamba, boomslang, green mamba, puff adder, and python. Estelle Mayhew from Creative Studios at the Department for Education Innovation

A new module at the University of Pretoria, Statistics 122 (STC 122), was born online in July 2020 during the COVID-19 pandemic. The Department of Statistics presents this module to first-year students majoring in various degrees, including Accounting Science, Informatics, Computer Science, Investment Management, Economics and Statistics & Data Science. Students enrolled in STC 122 are from diverse socio-economic backgrounds with varying levels of exposure to technology, including computer coding and algorithmic thinking.

In line with industry expectations, the curriculum in STC 122 is based on the modern approach to statistical education in which inferential thinking is learned through randomization and simulation techniques. STC 122 introduces students to foundational statistical concepts. Furthermore, STC 122 also includes inferential and computational tools that build upon the foundational concepts. All inferential analyses in STC 122 are done using R software, thus requiring students to learn this programming language.

designed a stunning Snakes & Ladders game board for us.

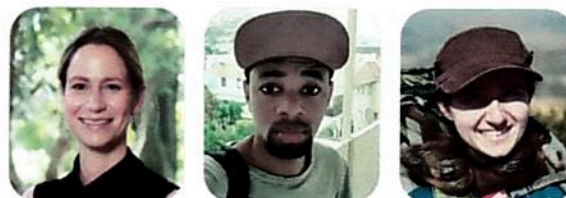
The main research problem to be investigated by the students was to study the number of rolls of a die needed to reach 36 and complete the S&L game. Since this variable does not have a well-known statistical distribution, students needed to simulate the game in R to obtain this distribution.

Apart from the above-mentioned research problem, the activity allows for numerous further research questions to be posed to the students. For example, how will altering the placement of snakes and ladders affect the variability of the distribution? Which one of the five snakes on the S&L board is the most dangerous? All these questions need to be answered through simulation.

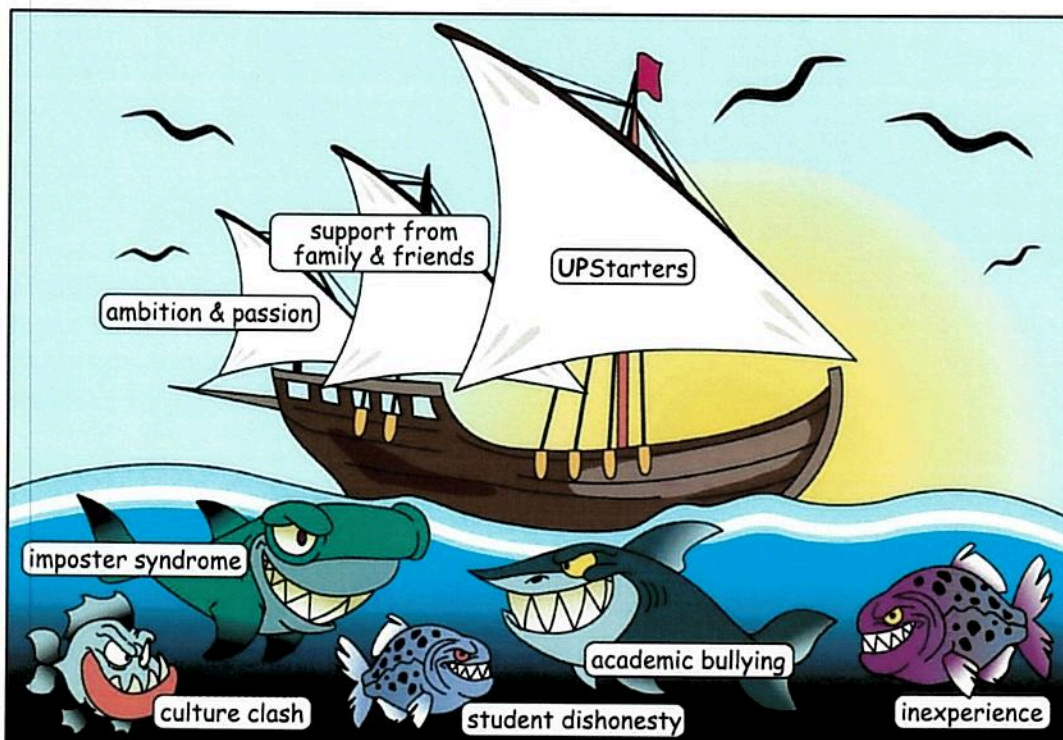
Gamification activities such as this simulation study are not only fun for both lecturers and students, but encourage students to develop their statistical intuition and inferential thinking through game-play.

UPStarters - Onboarding and staying afloat

Ansie Smit – Department of Geology,
Brian Nkala – Department of Geography,
Geoinformatics and Meteorology, Renate
Thiede – Department of Statistics



#survival #peersupport #overwhelming



I had the help of my department, co-lecturers in the subject, and our trusty Education Consultant with loads of encouragement and helpful tips.

Then COVID happened. As an introvert I was intrigued to be working from home, at first. However, everyone's life suddenly turned frantic, focusing on a smooth(ish) transition to online teaching for students and ourselves. We could still do our CPD training online, get peer feedback from online lecturers,

and connect for quick zoom calls or WhatsApp messages. Yet, the human connection was not the same. We were all so rushed, nobody had the time to have a cup of tea and discuss other academic topics unrelated to online lecturing.

Fortunately, in August 2020, UP launched an initiative for new academics and eager learners named UPStarters. Finally, once a month, young academics and those who are young at heart could connect in a meaningful manner. Just for an hour, we had a safe space to share ideas, successes, and concerns.

We talked shop, sharing lecturing and examination techniques, seeing how people in different departments address similar problems, but we also talked about topics like imposter syndrome, cultural intelligence, and academic bullying. These sessions provided me with the opportunity to meet fellow academics, learn new techniques and technology, have incredible peer support, and quickly decompress during office hours. Knowing the level of support that is available is priceless. For me, this monthly zoom call has become a fixture on my calendar not to be missed.

Ansie's story

From onboarding to almost overboard – my journey

I've been associated with the university since 2009, but mostly in a research capacity. I only ventured into teaching and learning in 2020, when I attended the UP Academic Induction Programme or "academic onboarding". For a few days I was convinced that I had wandered into the wrong room, this was not what I signed up for. It can be a jarring experience for anyone to have a crash course in terminologies like Bloom's taxonomy and teaching philosophies, intermixed with the weird and wonderful world of clickUP and study guides, but I held my chin up and put my head down and prepared my first lectures. I was ready.

I thought I was ready until I walked into the Large Chemistry Hall bursting out of its seams with first-year students. I knew the theory, and I knew my slides would help convey the information. What I did not know was how to coordinate and run a class of that size without it ending up in utter chaos. I did not know how exhausted I, an introvert, would be after each lecture. I did not know of the imposter syndrome monkey that would make itself comfortable on my shoulder. Luckily,

Renate's experiences

It has always been my dream to be an academic at UP. As a learner on field trips and open days, and later as an undergraduate, I fell in love with the beauty of UP's campuses, the atmosphere of excitement, and the feeling that the sky's the limit. Being accepted into a Ph.D. programme and appointed as a part-time lecturer was a dream come true – but dreams are hard work too. No one told me how intimidating it would be to get started.

As a young academic, it's easy to feel overwhelmed by the wide variety of responsibilities and to feel overshadowed by experienced researchers and lecturers. UPStarters has helped me realise that I'm not alone in this phase of my career and that many others have similar struggles, and it provides the tools to overcome them.

UPStarters gives me the opportunity to talk about impostor syndrome. There is an expectation for academics to have a wealth of knowledge straight off the bat. How many times have you told someone you are doing or have completed a Ph.D., to be met with wide eyes and expressions of shock and awe? There is immense pressure to perform, and it's easy to feel as if you are not as good as people think you are, despite what you have already achieved.

While preparing a presentation with another member of UPStarters, we discovered that impostor syndrome is a common problem among high achievers. Nearly all the attendees identified with the fear of not being good enough to make a success of their career – despite having stellar track records. It was highly encouraging to share experiences with other emerging academics and discuss strategies to cope with our insecurities in a healthy way, while pushing ourselves to be the best we can be.

UPStarters has also enabled me to consider a variety of difficult topics, including how to handle academic bullying and dishonesty from students. We have discussed nuanced issues such as differences in personality and culture, and how to be sensitive to our differences while utilising diversity as our greatest strength. By providing a safe space to discuss complex topics and consider different perspectives, UPStarters has taught me that there are always multiple sides to every argument and that these can always be synthesised into a greater whole.

Fundamentally, UPStarters has enriched my academic career by connecting me with others who are passionate about teaching and learning, and who share my UP dream.

Brian's reflections - Staying afloat in choppy waters

Learning with agility requires three aspects – gathering information, seeking feedback, and reflecting – which, indirectly, implies a willingness to be wrong. Being wrong, on the other hand, is strange, weird, and painful. Since we are conditioned that mistakes are taboo, I tend to naturally gravitate toward a defensive attitude when things don't go as planned, and sometimes don't bother looking for evidence to back up my position.

It is useful to be reminded of the quote "Unless you're Chuck Norris" in accepting that you're unlikely to complete a task flawlessly the first time. As young emerging scholars excited about new challenges and at ease with risk, we are bound to make mistakes. UPStarters have been there to support us by exposing us to various concepts and tools that serve as a guide and a comforting pillow. It reminds us that failure teaches us to perform better when facing a similar situation next time. Instead of smoothing over the rough edges of our current uncertainties and challenges, UPStarters has created an environment for agile learners to shine.

Mistakes are viewed as opportunities for growth and advancement in our career choices, and calculated risk-taking is encouraged. Most importantly, it teaches us that defensiveness can stunt growth in our careers.

The pandemic has brought significant changes to how we conduct our daily activities. Technology is increasingly used globally to solve complex challenges and facilitate communication. In teaching and learning, technology has driven adoption of the hybrid learning model not only during the pandemic but also during protest action on campuses, when larger classes were seamlessly moved online for day-to-day activities to continue with minimal disruptions.

The combination of technology and UPStarters has provided emerging scholars in teaching and learning with the tools they need to grow and contribute to the academic project.

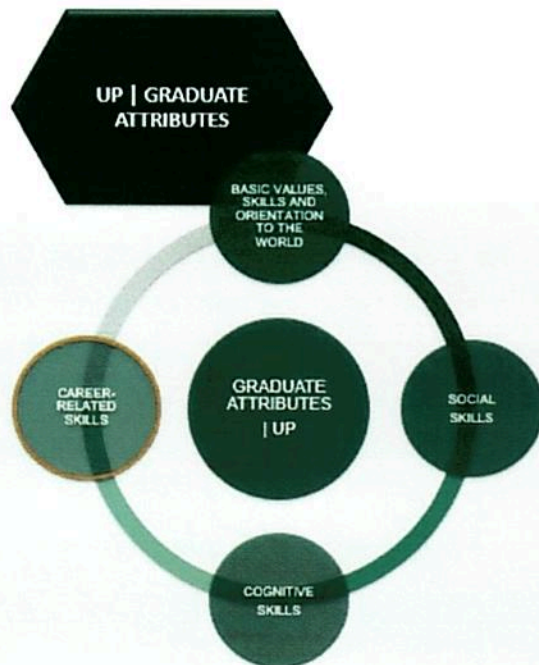
Skills And Competencies For The Legal Profession

Samantha Getsos & Tiya Balakisten – Department of Procedural Law.

#creatingpracticeopportunities #fitforpurpose #graduateattributes



22 | FLEXIBLE FUTURES CONFERENCE



- Sound knowledge of their field of specialization
- Able to use work related technology effectively and can efficiently adjust to and use new technologies
- Can work productively under pressure
- Promote and adhere high standards of professional conduct



NOT LISTED | COMPETENCY TO DO THE JOB?

S.A. Getsos & T. Balakisten | 2022 Flexible Future Conference PowerPoint Presentation

The UP LLB curriculum covers extensive theoretical knowledge in various fields of the law profession. During the 2022 Faculty Forum, Law House debated the skills and competencies required to enter the legal profession. The engagement identified that postgraduate studies can no longer be the only distinguishing factor to applying for articles of clerkship; there is an increasing need for undergraduate students to gain some practical experience.¹

The Dean advocates for ‘...contextual legal education [that] equips [students] with the necessary skills and competencies to enter the legal profession...’ which echoes the call from Law House for increased undergraduate practical experience¹. This call for practical work aligns with the graduate attributes adopted by the University of Pretoria, as shown in the figure below, save for the competency to do the job.

Universities need to engage purposefully with the LLB curriculum to determine its contribution to the board examination results. Since practical legal training can no longer be limited to articles of clerkship, it has been proposed that Practical Law (PRR) 400 should be adopted as a capstone module in the LLB curriculum.

The University of Pretoria Law Clinic (“UPLC”) forms part of the Faculty of Law and engages in Clinical Legal Education

(“CLE”) for final-year LLB students. Practical Law is an elective module for final year LLB students in CLE, presented by qualified, practicing attorneys at the UPLC. The UPLC gives students the opportunity to apply legal theory by providing legal-aid services to the indigent, thereby increasing access to justice. Students are trained in the practice, for practice. See <https://www.up.ac.za/up-law-clinic-home-page/article/52631/practical-law-prr-400-module->

Students’ daily tasks include consultations with clients, taking instructions, drafting correspondence, pleadings and notices, and mediating amicable solutions. These tasks are performed in groups of 6-10 students under direct supervision. Cases are consolidated weekly at the UPLC or via Blackboard Collaborate. The students’ practical exposure to a diversity of clients and contexts is enriching and exciting and ensures their ability to do the job, #fitforpractice.

Incorporating a core module focused on practical legal training in the LLB curriculum will not only prepare students for the law profession, but also allow them to acquire the graduate attributes – basic values, social skills, cognitive skills, and career-related skills and competencies – that UP students should attain. Practical Law (PRR) 400 is a necessary intervention to meet this objective.

¹ Student Communication from Dean’s Office dated 22 September 2022.

Geoscience podcasts

Azile Mdleleni, Cameron Green, and Victoria Rautenbach

#realworld #insideinfos



It may not be rocket science,
but its geoscience

At the start of 2020, we had plans to visit various former students at their place of work, so that current 3rd year geoinformatics students could learn from their experiences and see what a workplace would look like. Then COVID-19 reached South Africa and the President implemented a level 5 lockdown. During this time, I and two of my teaching assistants decided to do what everyone else was doing, start a podcast.

Our aim with GeoPod was to speak with recent graduates working in the industry and to ask them to share information about their job hunting process and about their respective work.

We selected individuals that work in a range of fields within geoinformatics working as researchers, developers and analysts. The podcasts are hosted by Azile Mdleleni, Cameron Green, and Victoria Rautenbach, and are available on most podcasting platforms (<https://anchor.fm/geopod>).