



Teaching Innovation for the 21st Century:

A collection
of UJ teaching
and learning
vignettes



UNIVERSITY
OF
JOHANNESBURG

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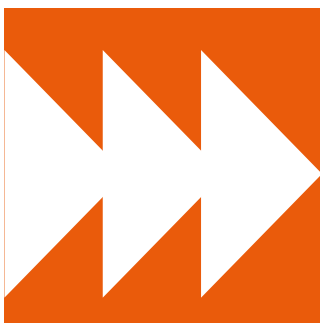
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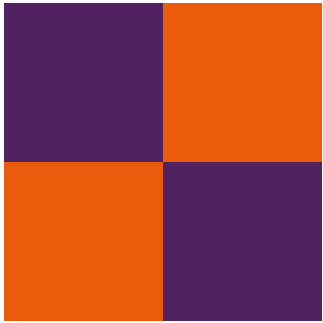
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ACRONYMS AND ABBREVIATIONS

4IR	Fourth Industrial Revolution
BC	before COVID-19
CAPQP	Centre for Academic Planning and Quality Promotion
CASD	Centre for Academic Staff Development
DAPQPASD	Division for Academic Planning, Quality Promotion and Academic Staff Development
DC	during COVID-19
FYE	first-year experience
HE	higher education
MOOC	Massive Open Online Courses
MRS	Medical Imaging and Radiation Sciences
PCK	pedagogical content knowledge
SLP	short learning programme
TPACK	technological pedagogical content knowledge
UDL	universal design for learning
UJ	University of Johannesburg
WIL	work-integrated learning

FOREWORD

The University of Johannesburg's (UJ) transition to remote teaching and learning early in the 2020 academic year was a shift of unprecedented nature and scale for all sectors of the University. This publication showcases features of teaching innovation and exemplar from our academics. I believe this will become a well-utilised resource in years to come, as we continue to contend with rapidly evolving technologies.

Innovative universities embrace change and continue despite unexpected disruptions. The UJ presents this publication, *Teaching Innovation for the 21st Century: A collection of UJ teaching and learning vignettes* which provides a tableau of academic experiments in teaching and learning over the period of the pandemic. Klaus Schwab wrote, 'We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before' (Schwab 2015). This has now come to be known as the Fourth Industrial Revolution (4IR). Education has to gather momentum to deliver on the needs of society in the face of this revolution. Critical to this is a renewed focus on our curricula, teaching and learning and assessment. Saying that we are living in 'unprecedented times' has become a cliché that barely captures the consequences of the COVID-19 pandemic, the resulting lockdown and the consequences for higher education (HE). Interestingly, however, it has also catalysed processes around the country



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to allow universities to respond to the needs of their students. UJ has responded with agility and compassion, mindful of the deep inequalities entrenched in our society. The University is ever conscious of our varying contexts and diverse student population. Against this backdrop, some remarkable feats of ingenuity and creativity in teaching took place. Lecturers improvised, adapted and innovated as they went along, as did students. As with blended learning, some of the most creative and innovative pedagogies and other responses to teaching demands and students needs predate the pandemic. The willingness and ability of the University's teaching team to rise to the occasion and reach out to students was deepened in the pandemic but did not originate there. The University's clear commitment to innovation and the 4IR, but also to social justice and redressing student inequality, became even clearer. What this publication demonstrates is that innovation in teaching and learning in the context of the caring University runs through the veins of the UJ team.

A range of papers, articles and faculty research has commented on the impact and outcomes of teaching and learning experiences during COVID-19. While some variability in outcomes was always inevitable, the overall view is one of an initiative that was successful in saving the academic year despite the myriad contextual challenges. In some respects, it did more than this. The Division for Academic Planning, Quality Promotion and Academic Staff Development's (DAPQASD) comprehensive report (2020)

concludes that UJ's transition to remote teaching and learning has been a success. Its sophistication and unexpected beneficial consequences far exceeds that of a digital mirroring of business-as-usual teaching.

Fortuitously, when the lockdown was declared, UJ was well advanced in implementing blended learning. This enabled us to take advantage, with speed, of the systems and processes already in place. Policy had for some time been encouraging and promoting blended learning – a crucially important gateway into online learning. Policy had also been encouraging reflective, research-led, innovative teaching. Such success can only be viewed as testimony to a cohesive, concerted effort on the part of the entire University. Academics and students responded courageously and creatively to explore all possible avenues and new directions to enhance teaching and learning. Notwithstanding the contextual challenges, academics rallied to provide experiences that were student focused and discipline directed. With all its diversity as a comprehensive institution, UJ benefited from a unity of purpose aimed at excellence in teaching. This saw active collaboration between academics, across departments and divisions. The principle and motto that underpinned UJ's endeavours was 'no student left behind', which became both a binding force and rallying cry.

As we continue to recalibrate the vagaries of the pandemic and the impact on teaching and learning, we must pause for in-depth reflection

on the impact and implications of our transition to remote teaching and learning. The passage of time since March 2020, with all its immediate demands, makes the present moment apt for such reflection. Research and reflection has thus far understandably focused mainly on the macro systemic effects and issues. The time is right to focus more on the micro level. At the end of the day, in the matter of teaching and learning, the true measure of success is at the individual level. Here, it is entirely a matter of individual academics, each with their own students. In a challenging new remote context, how did lecturers adapt and innovate in teaching their own unique disciplines to their students, each with their own individual orientations, cultures, values and languages? It is not enough merely to admit students to the University. Such an *instrumental* understanding of access is not the UJ philosophy. Rather, the sophistication of UJ's approach to teaching and its use of the enabling technological systems already in place means that students and staff are transformed in the creation of knowledge, as necessary preparation for 21st-century life, work and study.

A first step in this direction is this publication, *Teaching Innovation in the 21st Century: A collection of UJ teaching and learning vignettes*. This provides a critical space for identifying and sharing individual innovative practices that have been developed in grounded ways. The selection presented here reflects a slice of UJ's teaching and learning innovations. It represents the beginning of conversations about how we can consolidate

and extend what we have learnt and how we might expand this into a broad community of practice.

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INTRODUCTION

Background: The DAPQPASD

The provision of quality teaching and learning is one of the key pillars of UJ. The DAPQPASD – which comprises two centres: the CAPQP and the CASD – plays a pivotal role in supporting teaching and learning. The DAPQPASD contributes to quality teaching and learning through its work in academic planning and by providing opportunities for the intellectual, professional and personal development of academic staff. In addition, the integrated activities of the Division enables it to respond to the rapidly changing HE ecosystem in a holistic and coherent manner. The events of 2020 and the COVID-19 pandemic added a layer of urgency to the need for universities to respond to the challenges of teaching and learning in rapidly changing environments.

Measures to address these challenges of teaching and learning rely on the complementary roles of DAPQPASD and faculties.

Complementary DAPQPASD and faculty roles in improving teaching and learning

Respective DAPQPASD and faculty roles in teaching and learning are best understood with reference to the concept of pedagogical content knowledge (PCK). The logic of PCK is rooted in

the key reality that disciplines each have their own unique concepts. From this it follows that each discipline is most effectively taught through use of its own distinctive teaching approaches.

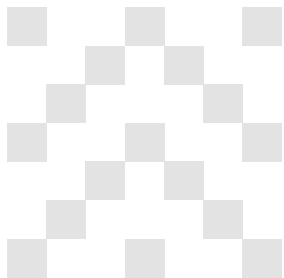
The originator of the evolving concept of PCK explains it as follows:

“ Within the category of pedagogical content knowledge I include, for the most regularly taught topics in one’s subject area, the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations – in a word, the ways of representing and formulating the subject that make it comprehensible to others (Shulman 1986, 9). ”

The disciplinary content aspect of PCK is obviously the domain and responsibility of disciplinary experts in faculties. It is the academics who translate their specialised disciplinary content knowledge into ‘teachable’ form for their students.

But PCK depends on more than teachers just translating disciplinary concepts into forms that can be taught. It must also be ‘comprehensible’ to students. Crucially, it must link academic discourse with students’ prior knowledge and understandings. This can be relatively unproblematic when students are from well-educated, ‘middle class’ homes in which the home language is the same as that of the university. Academic discourse is much less comprehensible

One important way for students to achieve epistemic success is to provide opportunities for them to be co-creators of knowledge, and to share the responsibility with the lecturers for their learning and teaching experience.



to students from different social class, cultural and language backgrounds. Being a HE teacher involves among others 'pedagogical and learning responsiveness to/of students' needs' (Moll 2004).

The great majority of students at UJ come from the poorest sections of our society, from what are known as fee-free schools located in communities where families can afford few of the necessities, let alone the luxuries, of HE. One of the key drivers at UJ is the transformation of curricula to provide meaningful learning and teaching experiences for its diverse student and staff population. UJ's commitment to improving the learning and teaching experience of all of its students is evident in many aspects of its work, from the provision of laptops and other electronic items, to feeding schemes and fee support. However, none of these initiatives will alone ensure the success of students in the HE environment. While access to university is important, students also require epistemic access to the knowledge, skills and attributes – the cultural capital – required to succeed in university.

No understanding of students' prior knowledge, understandings and needs can ever be sufficient for purposes of achieving a fully developed PCK. But collaborative efforts involving key stakeholders in a community of practice can make a significant difference. This is the domain in which the DAPQSPASD has a role in providing support that:

- introduces the work of innovative teachers to others,
- promotes the sharing of experiences and ideas about possibilities, and
- fosters trust and a culture of conversation and collaboration.

The Teaching Innovation for the 21st Century project and the *Teaching Innovation* publication

The Teaching Innovation for the 21st Century project is driven in part by the necessities listed above, and in part by the needs of the pandemic. Significantly, though, it is motivated by the desire to develop an intensive and rich scholarship of teaching and learning at the University and by the recognition of the value of quality university teaching for the overall academic project. This scholarship plays a significant role in the professionalisation of university teaching, which is high on the agenda of UJ and of the Division. This publication displays the achievements of individual lecturers who have responded to the call to submit contributions. The University Research Committee funds the Teaching Innovation Fund which provides limited teaching innovation grants to the Division to support teaching excellence in the development of teaching innovations, the implementation and evaluation of innovative curricula, teaching and assessment and to support the development of university initiatives which enhance programmes quality.

One important way for students to achieve epistemic success is to provide opportunities for them to be co-creators of knowledge, and to share the

responsibility with the lecturers for their learning and teaching experience. This is reflected in many of the papers in this publication. Teaching that is innovative and instils a passion for learning will produce graduates suited to their futures as citizens of the 21st-century world who will make a valuable contribution to society.

The selection of projects showcased in this publication is just a small sample of the dynamic ways in which UJ lecturers have risen to the challenge not only of leading in their research areas and disciplines, but also of leading the development of innovative and engaging teaching methods to make UJ the institution of first choice for so many students. Enhancing university teaching is not only about building the skills and techniques needed; it is also about recognising good practices, and sharing these among peers in line with the principles outlined above.

Contributions to the *Teaching Innovation* booklet

In a variation of tabula rasa, Abejide Ade-Ibijola encourages his students to establish 'Chapter Zero', thus giving them the space in which to develop the mental readiness needed before the discipline-specific learning begins.

Providing developmental opportunities for academics in HE is crucial. Arno Louw looks at how to support a large faculty for teaching online. In a reflexive essay, he considers the development of a purpose-fit programme of development for lecturers.

In her piece 'Mind mapping in Chemistry', a humorous take on her discipline, Charmaine Arderne shares insight on the use of MindMeister as a tool for online learning and takes us with her on the rollercoaster ride of the COVID-19-impacted 2020 academic year.

EP Marisca Deminey and Elana van der Wath look at how techniques for visualising the interior can be used in Interior Design to restore expressive agency. As Interior Design blurs the built environment and human perception boundaries, the authors look at how forging atmospheres into tangible, visual things form part of the design process.

Erica Pretorius and Charlotte van der Merwe make a case for adopting an authentic learning approach to improve student learning and model this using a module from a Postgraduate Diploma in HE. Authentic assessments develop skills for the real world of work, and the authors argue that authentic learning enhances both the quality and the relevance of the HE learning experience.

Estherna Pretorius uses her experience of teaching in the Life Sciences module to make online learning fun, and shares how she kept students engaged and motivated while ensuring independent learning during lockdown.

Habib Noorbhai explores the use of technological tools to provide effective remote teaching and learning to students in the Health Sciences. He demonstrates how current technological applications can be expanded to increase students' engagement and understandings.

In order to respond to change, teachers need to be innovative. Kat Yassim grows innovation in student teachers by enabling them to develop simple apps to facilitate learning. The disruption occasioned by the pandemic provided a perfect backdrop to this challenge. In this paper, she shares her experience of learning together with her students.

Another submission from the Natural Sciences is from Kulsum Kondiah, who makes fundamental biochemistry concepts fun with game-based learning. She uses Kahoot! (<https://kahoot.com/>), which is more than a kid's game, to great effect in HE.

The usual two-week rotation to prepare students to transition to a clinical environment required a great deal of creativity under COVID-19. Nicole Badriparsad rose to this challenge, getting students to simulate an X-ray tube from recyclable material.

Alban Burke and Leila Abdool Gafoor explore how Helpme.com was used to provide student counselling during lockdown. COVID-19 forced so many to navigate their daily lives in the context of social distancing, placing greater reliance on digital communication. This submission focuses on how the health and mental health professionals adjusted their interventions to provide essential services to UJ students.

Suzaan Hughes uses simulation-based and gamification as pedagogy in online classes to provide students with an engaging and authentic learning experience. This approach assists students to acquire multidisciplinary and critical thinking

The usual two-week rotation to prepare students to transition to a clinical environment required a great deal of creativity under COVID-19.

skills. Students are given the opportunity to put learnt theory into practice, running an online business in a simulated environment.

Gilbert Motsaathebe takes his students from the classroom to the newsroom by providing a simulated newsroom and equipping students with critical TV journalism skills. With minimum resources, excellence is achieved through learning by doing, and students exit the module having developed the journalistic traits needed to become successful TV professionals.

Thea Tselepis considers how entrepreneurial leadership may be taught to final year students who are unable to visit real world businesses. Using coaching as a teaching method, Thea took students on an inward journey to help them reflect on life purpose and personal value-add to help them develop entrepreneurial leadership skills.

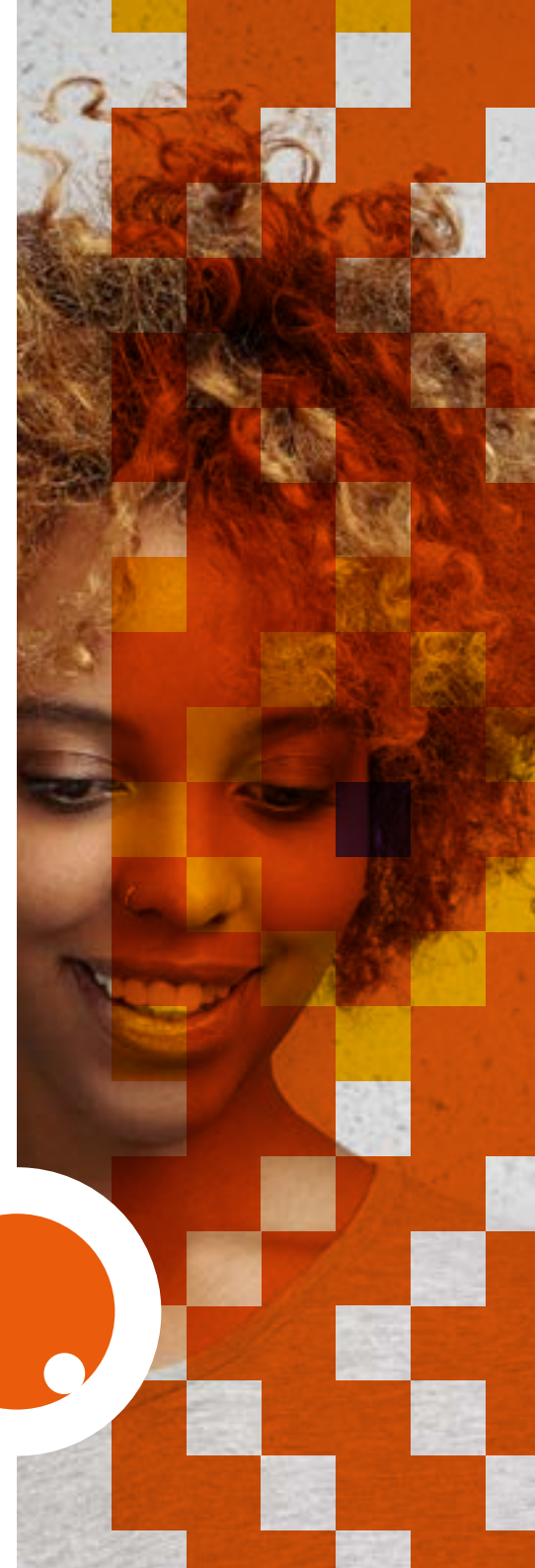
Tourism and Hospitality also faced significant challenges during COVID-19, and Tracy Daniels explains the use of alternative work-integrated learning (WIL) practices during the pandemic. As many of the advantages of industry exposure and support were lost, Tracy shows how the module was adjusted to retain value for students.

In working through traditionally dense and voluminous texts, law students need structure and context to help them learn. Michele van Eck looks at product-generated knowledge maps in online learning platforms as used in Private Law. Concept chains provide the 'conceptual spine' for students.

Welcome Kubeka considers the lessons learnt in offering academic support to students during the COVID-19 pandemic. Face-to-face interactions are key to South African universities, and the submission reflects on and shares some lessons from the COVID-19-induced need to provide academic support to students in the context of the digital divide.

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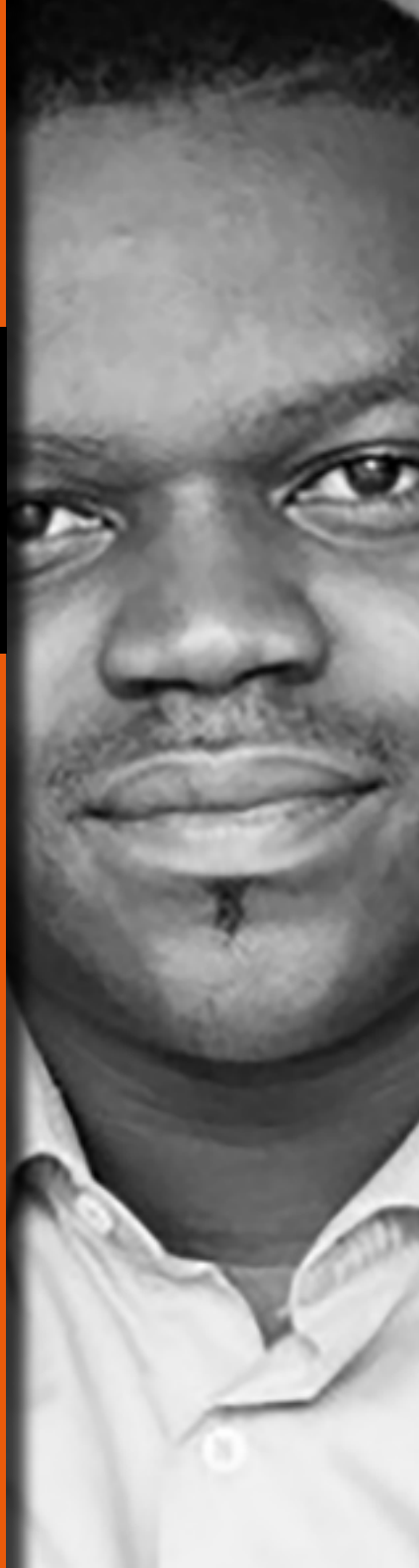
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WHO PREPARES OUR FIRST-YEAR STUDENTS FOR LEARNING?

Introducing 'Chapter Zero', a pre-module mental readiness lecture for students

Summary

For the past four years I have been preparing my students' minds before the learning begins. In these years, I have been fortunate to teach first-year students, and realised that they are the only ones without any strong opinion of what the university is, or should be; not previous grades/marks, and hence, no failures recorded in their names – they come in with clean slates. This status quickly changes when they start their academic careers on the 'wrong footing' due to mindsets such as: 'University is a place to be free', 'Being in varsity is, in itself, success', 'I now answer to no one', 'Lecturers are my waiters, and I am the customer', 'I only need to study when exams are close', 'When I graduate, I will get a job, regardless' and so forth. I have always considered these mindsets harmful to learning; hence my *pre-module, 45-minute lecture* on mental readiness. Aimed at my first-year students, it hopes to address these issues and get them ready for the challenges ahead. I named this lecture 'Chapter Zero' and first delivered it in February 2017. Since then, I have improved it significantly. Student testimonies have been greatly positive about 'Chapter Zero', with most of them saying it helped them to stay focused on their studies from the start. The rest of this document spells out the teaching philosophy that motivated this intervention, as well as its details and structure/content.

Background and problem addressed

The first-year experience at UJ (often referred to as FYE) is targeted to assist freshers in getting started at the university (FYE 2020). This programme covers the introduction of freshers to venues and different departments on campus, accompanied with a brief generic lecture on safety, time management and punctuality to lectures. This is run by the Academic Development Centre. While this lecture has been effective, the FYE activities does not include contents that addresses the mindset of freshers. Freshers are often found believing that varsity is an achievement, and it is a time to celebrate, drink, make merry and be free. While a level of social indulgence is often nonproblematic, many get carried away and only study when it is a week or a few days to assessments – at this time, it is too late. This article presents an intervention that serves as a 'wake-up' call for freshers that university is, in fact, the most important part of their lives. I developed a lecture called 'Chapter Zero' that is based on my teaching philosophy and is administered to the freshers in the first lecture, before module contents are delivered. 'Chapter Zero' gets the students fired up.

The next section builds up to 'Chapter Zero' from my teaching philosophy.

Towards 'Chapter Zero': Introduction and teaching philosophy

In this section, I present the teaching philosophy that gave birth to 'Chapter Zero'. My teaching philosophy can be summed up in the following six statements.

- 1 Students' mental readiness:** Learning is not possible when the mind is not prepared or ready.
- 2 Society's role in education:** If I understand a student's background, I can understand the student's drive or lack thereof.
- 3 Tabula rasa:** No one is dumb or smart; everything from the first principle can be taught or learnt. When teaching first-years, I believe in tabula rasa, a philosophy that holds that every newborn is a clean slate. The experience and perception thereafter defines the character and action of a person.
- 4 Beyond teaching:** To reach some students with special needs, I have to be more than a lecturer; I have to be their 'family'.
- 5 Instilling confidence:** I need to create an environment where a student (mostly the local students from townships and rural areas) can say: 'I do not understand', without fear or feeling inferior.
- 6 Military mindset:** Getting a good education is a 'grind', and a student has to want the knowledge and be ready to work very hard. My job is to show them why they should want it, and their role in creating innovative technological solutions for the world after my module – as this is the subject of the contents of my modules at UJ.

Strategies for establishing my teaching philosophy

1

Students' mental readiness

'Chapter Zero', my first lecture, always prepares the mind of my students. It has nothing to do with the content of the module, and everything to do with getting the student

mentally ready for what is ahead. Topics that I discuss in this chapter include:

- Module awards and previously broken module records: This stimulates the interest of students towards achieving the same, and possibly breaking previous records. This technique, in theory, is known as *gamification*.
- How to succeed: A compilation of my career experiences and insights about topics such as: how good character helps, prioritisation of tasks as a student, discipline, hunger and desire, respect, and health and wellness – how to seek help when in poor mental or physical shape. I also bring along the top students with distinctions from the previous year to the first lecture, so that the freshers can chat with them about their experience, and how exciting computer programming is.

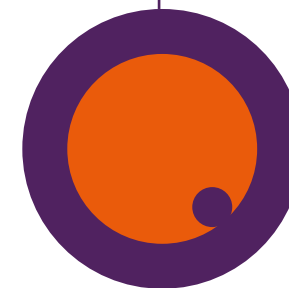
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Society's role in education

In an attempt to understand where my students come from, I have studied South African society for about seven years, and read research articles about its dynamics. The

majority of the students that end up in my classes are from poor backgrounds with absent fathers, which means male role models are absent from their lives. The literature has listed 'lack of discipline' and 'lack of direction' as two of the major drawbacks of this society (Madhavan, Townsend & Garey 2008; Padi, Nduna, Khunou & Kholopane 2014). The need for this father figure or mentor has been emphasised (Clowes, Ratele & Shefer 2013). This is a role that I have chosen to play as a lecturer. It also involves instilling discipline in first-year students – this happens as part of 'Chapter Zero' Discipline in this sense telling them when they are doing the wrong things. This sometimes come across as being strict – but it works for me. They are well drilled in my lectures and prepared to learn.

My first lecture is always to prepare the mind of my students with what I have designed, and I call: the 'Chapter Zero'.



As part of the Chapter Zero, I always mention to my students that they have a clean slate at the entry level – meaning they have not failed any modules yet.

3

Tabula rasa

As part of 'Chapter Zero', I always mention that you have a clean slate at the entry level – meaning you have not failed any modules yet. I also encourage my students that this can be the case till they graduate, depending on the effort they put in on daily basis. I show them some of my previous students from very poor backgrounds, who never operated computers before coming to UJ but became the best in the module in previous years. This also neutralises their thoughts about not being good enough to succeed.

4

Beyond teaching

To reach some students with special needs (for example, potentially depressed students), I have to be more than a lecturer; I have to be their 'family'. I have taken up this responsibility by encouraging them to talk to me if they are going through tough situations.

5

Instilling confidence

In my weekly laboratory sessions, I reach out to every student on their machines and give them that one-to-one experience. When I look at their screen and see that there is a problem with understanding, I engage with them to give them confidence. Mostly, they confess that they are struggling in such moments, and ask for help. I then encourage them to speak up in such situations. I also alert my tutors to look out for such students – the ones who keep quiet, even when they are struggling.

6

Military mindset

I often use the analogy of the military for my first-year students. They all agree with me that soldiers succeed (or have the chance of succeeding) because of drills, like being at the right place at the right time. As easy as this sounds, I believe (from my personal experience) that it is a necessary condition for success, although not sufficient at times. When students leave classwork and studying to until just before the test or examination dates (especially in modules such as mine – computer programming – that require many hours of practice), the result is always disastrous. So, I tell them to pretend that they are in the military: they should wake up at a set time each day, study daily like military training, and stay in mental/knowledge shape. I have 'woven' this into the fabric of their routines with drills like weekly laboratories that are graded throughout the semester. It is safe to say my students are 'soldiers' – mentally and routine wise. I believe each one of my students will graduate and go back to

their communities with a combination of computer programming skills, a regimental mindset and good character. This makes me proud.

Some notable proprietary quotes from 'Chapter Zero':

- To do everything in the world, there is no time, but to do the most important things in the world, there is too much time!
- Yes, you are young, but you don't have to be stupid. These are different things! Stupidity is ageless!
- 'Bleeding' is everything. No pain, no gain.
- Hard work is the only thing that is real.
- If you are smart, or dumb, how can you know if you don't even try?
- Nothing is given, it has to be earned.

A sketch of the contents of 'Chapter Zero' is presented next.

'Chapter Zero': A sketch

Here I present a content and structural sketch of 'Chapter Zero'. This lecture contains sections on: character (politeness, decency, benefits from being decent and so forth); Tabula rasa (reminding students that their slates are clean and they have not failed the module – yet); race analogy (life is a marathon, but university is a three- or four-year race) and the time traveller analogy; the priority game; discipline, respect, hunger and desire, mental health, wellness, exercising/fitness, music, asking for help, incorrect societal constructs, owning nothing except time, and Intelligence re-defined.

Conclusion

This article has presented an intervention that informs first-year students of the severity of issues around getting a qualification at the university – and the implications of not getting it right. In the last four years, students who attended the 'Chapter Zero' lecture seem more organised, coordinated and purposeful than their counterparts, who took longer to settle into the module.

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Arno Louw

Dr Arno Louw is a Senior Specialist: Instructional Design (e-learning specialist, academic technologies and pedagogies). He also manages the Centre for Academic Technologies Lab at UJ. He believes that challenging times for teaching, learning and assessment (such as COVID-19) gives him the opportunity to practise his field of interest. He believes that if one works with what one has, one will always find a solution.



LARGE FACULTY SUPPORT FOR TEACHING ONLINE

This is a reflexive essay about supporting UJ teaching and training staff to develop their e-learning skills for remote teaching during 2020. The purpose of online support is to continue the core business of UJ, namely, to keep lecturers abreast of ways to use digital, hybrid lecturing approaches when off campus. Moreover, the learning design used as the example in this paper also serves as an example for remote teaching and learning. Many institutions of HE claim online support as standard practice. However, a menagerie of references were made available online without careful consideration of the learning design principles underpinning lecturers' personal learning experience. Subsequently, most existing teaching, learning and assessment online areas had been tweaked to a collapsed library of inter-institutional literature to be consumed ad nauseam. Therefore, the design of such a teaching and learning support site is reconsidered. Is such a site purpose-fit against observable behaviour from lecturers who need timeous guidance when remote learning comes to play? Moreover, how would a large faculty be supported?

The modern context of teaching and learning

The Centre for Academic Technologies has been preparing academic staff for the last few years following the fast pace of a global revolution in teaching, learning and assessment. COVID-19 has pushed education to evolve at an even faster pace than could be imaginable. This escalation is complemented by a digital revolution and online learning practices becoming inextricable from a digitally perceptive generation of lecturers and students. Contributing to this inclination are: socio-economic adaptability, the outflows of #FeesMustFall (Desai 2019), familiarity with social media, happenings in the Twittersphere, availability of Massive Open Online Courses (MOOCs), the use of learning management systems (such as Blackboard), instant knowledge-application gratification from Google and YouTube, immediate feedback from computer processes to the user, intuitive user interfaces in apps and so forth. How we adapt to technology encompasses the current techno culture and our economic use of data (Shaw 2008). Both lecturers and students are nowadays required to be online learners. A competitive knowledge economy also brought about large schools with many faculty members who are accountable for large classes to be taught.

Moving online with mass classes

Blackboard may seem daunting. However, when a simple procedure for conveying information to students is pursued, the immense potential of this learning management system is realised. Blackboard came to the rescue of lecturers who found that face-to-face teaching methods could not simply be transferred into online learning but needed to be reconsidered. One way learning was reconsidered or reimaged was by providing 'bursts' of information on a pseudo website designed in Google. The link is available to large College of Business and Economics lecturers at UJ. The general welcoming page is shown in Figure 1.



Figure 1. Homepage for large faculty support

The elements in Figure 1 are linked to various Cloud resources. The supportive guidance about remote teaching was developed by using the first stage of design thinking.

Design thinking as a support process

Design thinking as a process takes on five stages. Dam and Siang (2020) provide a working definition and a model to describe the process:

“Design Thinking is a design methodology that provides a solution-based approach to solving problems. It's extremely useful in tackling complex problems that are ill-defined or unknown, by understanding the human needs involved, by re-framing the problem in human-centric ways, by creating many ideas in brainstorming sessions, and by adopting a hands-on approach in prototyping and testing.”

The authors (Dam & Siang 2020) further explain that: ‘Understanding these five stages of Design Thinking will empower anyone to apply Design Thinking methods in order to solve complex problems that occur around us – in our companies, in our countries, and even the scale of our planet.’ The five stages of the lecturer-support process to purposefully implement online teaching during COVID-19 will now be briefly described.

Empathise, define & ideate

The first stage (empathise) is to be mindful to understand: the problem, how people react and what is needed to address the need(s). Lecturers do not want to read critically through lots of text-based pages when an immediate solution is needed – it is like reading the instructions of fire safety when a building is on fire. The same can be said for students. Not all users who need immediate online-learning support are critical readers, but they are critical ‘searchers’. Therefore, the ‘how-to’ is instantly addressed by providing ‘immediate’ ideas (Ackerman 2020). Figure 2 provides the activity ideas requested by

Design Thinking: A 5 Stage Process

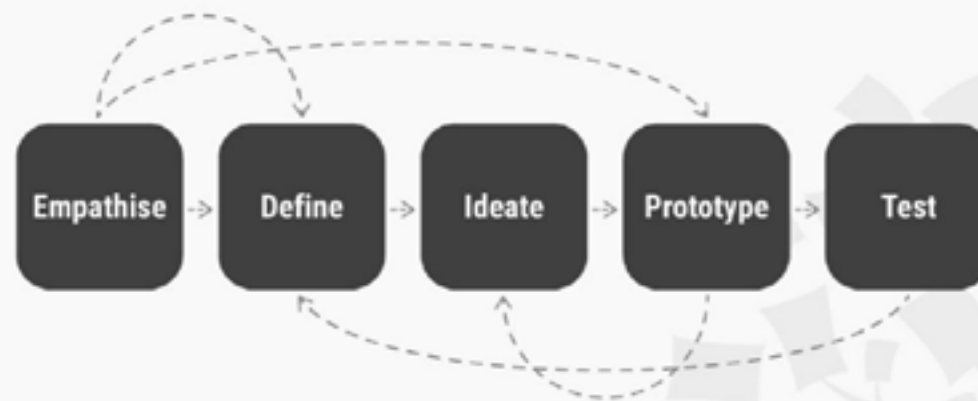


Diagram 1. Design thinking as a five-stage process (Dam & Siang 2020)

lecturers via e-mail and TeamViewer posts during the first week of lockdown. All links can be clicked or tapped, and adapted for mobile devices.

The second stage (define) assumes all considerations from the empathise stage have been taken into account. The interrelatedness of these two stages is shown in the Diagram 1.

The ideate stage of the process is characterised by how the first two stages manifest as a phenomenon or physical object. In this case, Figure 1 comprises the first three stages to support lecturers in this regard.

Iterating ideas, prototyping and testing

The final stages of the design thinking process (ideation, prototyping and testing), became an iterated, *et vade* intervention as the empathetic definition of the pseudo-website evolved. Figure 3 gives an overview of the site during Level 1 of Lockdown.

Summary

This reflexive essay has been about supporting a large faculty (the College of Business and Economics) at UJ to purposefully develop e-learning skills for remote teaching during 2020. To keep lecturers abreast of ways to use digital, hybrid lecturing approaches remotely, a teaching and learning support site is proposed. A purpose-fit website prototype is proffered. The design thinking process was presented in five stages against observable behaviour from lecturers to support remote online teaching.

Figure 2(a). e-Learning activities

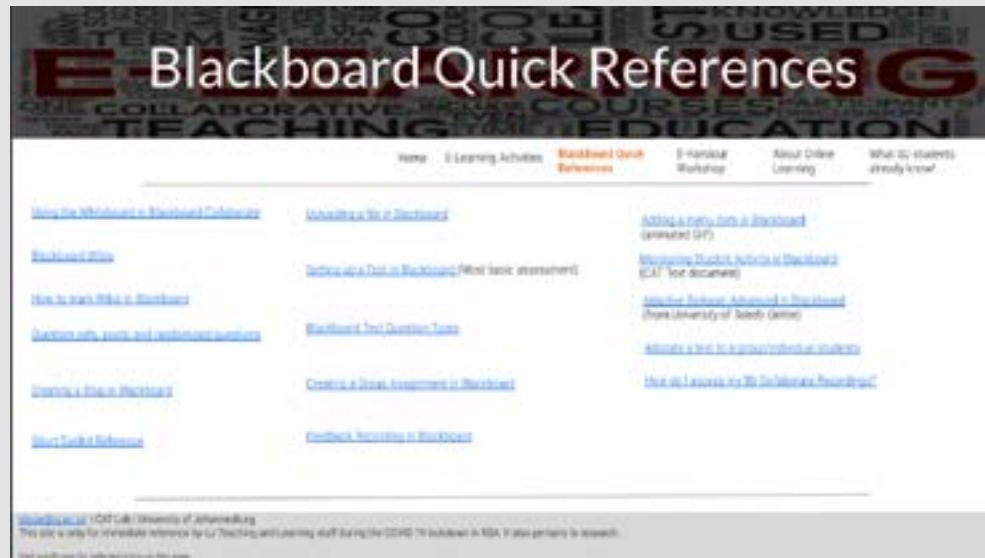


Figure 2(b). Most frequently asked Blackboard questions



Figure 3. Indication of further iterations

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Dr Charmaine Arderne is a senior lecturer in the Department of Chemical Sciences on UJ's APK campus. She is passionate about all things Chemistry, especially teaching and research. She is constantly on the lookout for new, technologically innovative ways to help students access course materials for online learning. Her research field is in Inorganic Chemistry using X-ray Crystallography (study of crystals with X-rays). She loves reading, running, painting and the outdoors.



MIND MAPPING IN CHEMISTRY:

Using MindMeister as a tool for online learning

The year 2020 was a tough one. All of us were in a position where we have had to think on our feet and do that quickly! Not one person anticipated what COVID-19 did to our personal as well as our professional lives – it was literally a case of adapt or die! We as academics at UJ were given three weeks to change our approach to teaching/learning, which was an exhilarating challenge, to say the least. Never in my life did I have to make an adjustment to my teaching approach as fast as I had to in March 2020. Looking back and reflecting on what I did, it was the best rollercoaster ride and adrenaline rush of my academic career! I will be honest and say that it was an onerous, frustrating and taxing task, but overall, it was an enormously enjoyable one.

Being placed in an intellectual pressure cooker, I immediately went to my own personal go-to method of mind mapping to plan how I was going to navigate the uncertain waters of designing a completely online module – something I had not done before. Before COVID-19 (BC), my modules had been blended, incorporating a lot of technological tools that were mostly used by me and only partly by the students. I had previously begun to incorporate online tasks in my modules (especially assessments that were delivered and marked online as I was teaching large classes, and this helped with the workload). During COVID-19 (DC), we were faced with multiple challenges: unstable electricity supply and intermittent load shedding from Eskom, irregular and erratic supply from cell phone service provider networks, lack of access to the internet, students not having devices to access their learning materials, and having to present and teach a module in a completely online environment. How were the students going to do this? How was I going to set up an online course? Frankly,

I did not have a clue – I prayed a lot for wisdom and an immediate answer!

Graciously, UJ provided students with data, and online learning began. Trapped in my home office, I began to plan, using my old friend – the mind map. I have found mind mapping very useful as you can ‘see’ your entire plan in one easy space. For some time now, I have used a web-based mind mapping website called MindMeister (<https://www.mindmeister.com>). I discovered it in 2017 and began using it to plan my workload back then. I have been using it ever since. I found it so useful that I purchased an educational licence, so that I could use its full function. The free version allows you three free mind maps – obviously, an academic needs more than three maps, right?

Because of the challenges mentioned above, I wanted to assist students with easy, fool-proof access to their course material. They needed an overview of the entire module. We wanted to avoid them having to spend lots of time looking for material on Blackboard. We wanted something that is easy to use and would not be data intensive. I designed a mind map module for them, calling it their CEM01A2 Course Route Map (see Figure 1). The entire course map could be presented on one page.

The map is web-based, so they could access it through a one-click link from any device (<https://mm.tt/1461364093?t=UPu7fu5Gzu>). It also allows uploads of small files, and I had success with video lectures, notes, and so forth at the click of a mouse/tap on the screen. The module that I taught was Structural Inorganic Chemistry, and it was planned in eight units. I had managed to complete the first two units BC, so the remaining six units were delivered online DC. Each unit was kept inside its own box with tasks labelled accordingly along with icons to help the students keep track of their progress. Attachments were labelled with paper clip icons, and any comments/hints/tips that I could give them had a little text icon next to the task. Green ticks indicated completed tasks;

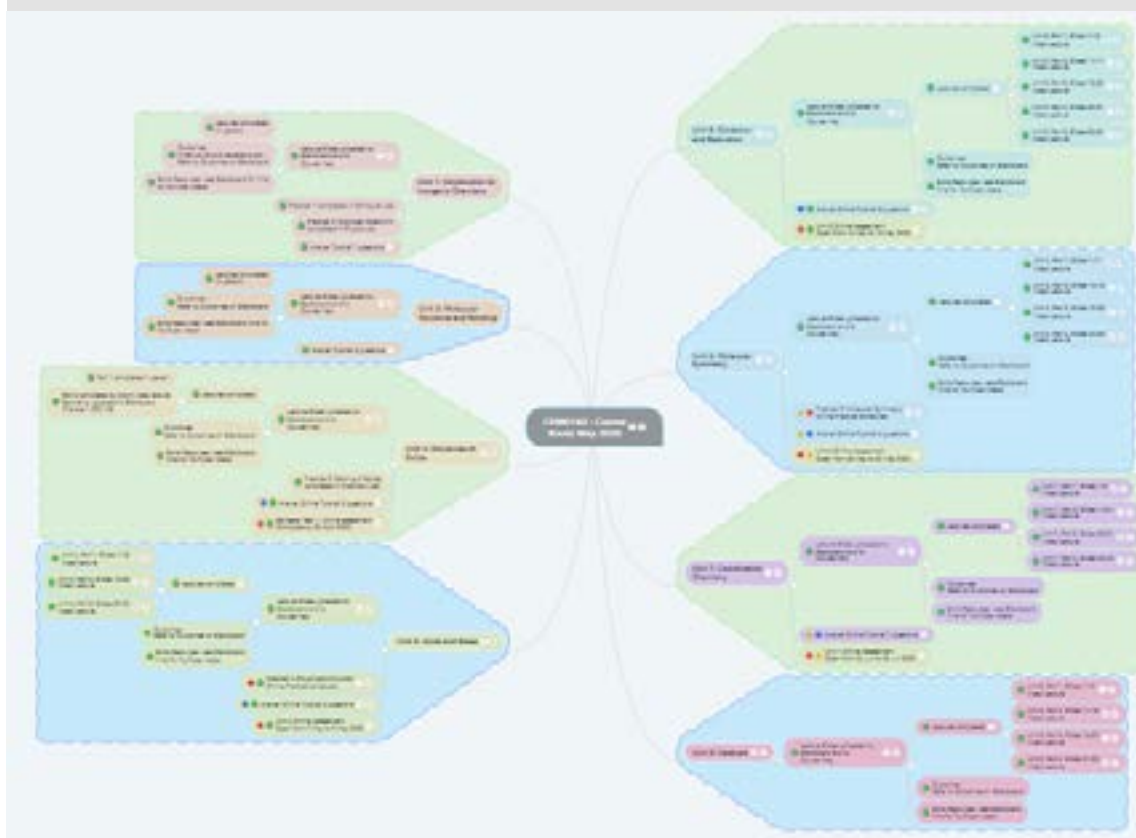


Figure 1. CEM01A2 course route map from MindMeister

Being placed in an intellectual pressure cooker, I immediately went to my own personal go-to method of mind mapping to plan how I was going to navigate the uncertain waters of designing a completely online module – something I had not done before.





Figure 2. Zoomed view of one of the units from the CEM01A2 module

8. Do you like the way that I have structured the course so far (i.e. are the video lecturers helpful? Do you understand the material?)

11 responses

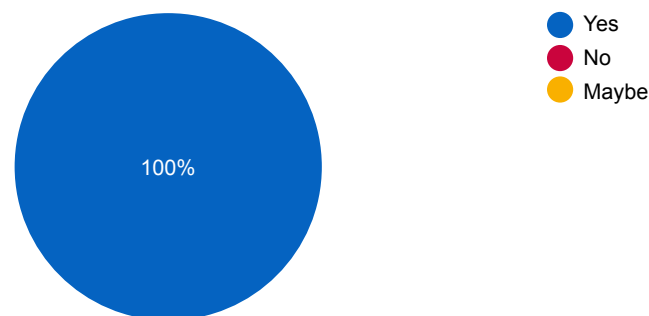


Figure 3. Response from Google Form survey regarding course structure

I had previously begun to incorporate online tasks in my modules (especially assessments that were delivered and marked online as I was teaching large classes, and this helped with the workload).

hazard signs indicated tasks to be completed; red dots indicated compulsory tasks and blue dots indicated optional recommended tasks. A zoomed-in picture of what one unit looked like can be seen in Figure 2.

I was greatly encouraged by feedback from the students who found the course map helpful and useful especially as it was not data intensive. (I had compressed all the videos using software called Handbrake, and all instructions were done in Microsoft Word, which had very small file sizes.) Students gave their feedback in short surveys created in Google Forms – the results of which are shown in Figure 3.

The Wikipedia definition of a mind map is: 'a diagram to visually organize information'. Thanks to COVID-19, I like to imagine that I have extended the definition to representing and designing courses for online teaching and learning delivered to students through any technological means as long as there is an internet connection.

About the author:

EP Marisca Deminey

EP Marisca Deminey started her ongoing journey with UJ as an undergraduate student in 2011, in the Interior Design department of the Faculty of Art, Design and Architecture. She is currently employed as a lecturer in the same department. As a young academic, she is on a steep, rich and continuous learning curve with a passionate focus on sustainable design and design education.



About the author:

Elana van der Wath

Elana van der Wath has lectured on multiple continents in both Interior and Exhibition Design. She holds a Postgraduate Certificate in Higher Education and currently teaches at UJ. Her present interests include the exploration of narrative in design and the development and role of the exhibition as a spatial communication medium.



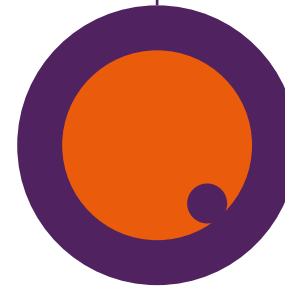
VISUALISING THE INTERIOR:

Using post-digital thinking in interior design to restore expressive agency

Interior Design can be understood as a professional and interdisciplinary practice concerned with creating a range of interior environments that articulate identity and atmosphere. Atmosphere refers to the mood, feeling, ambience or tone of a space. It is described by Sloane (2014, 299) as a nebulous phenomenon that signifies something that cannot be rationally explained or clearly depicted, as it blurs the boundary between the built environment and human perception. However, despite its seemingly vague nature, atmospheres can be produced through deliberate design practices. Böhme and Engels-Schwarzpaul (2017) argue that atmospheres are not just something that one feels but something that can be generated deliberately by specific, material assemblies. Designers forge atmospheres into something more tangible through visual means by preparing drawings, mood boards, rendered visuals and similar imagery as part of the design process.

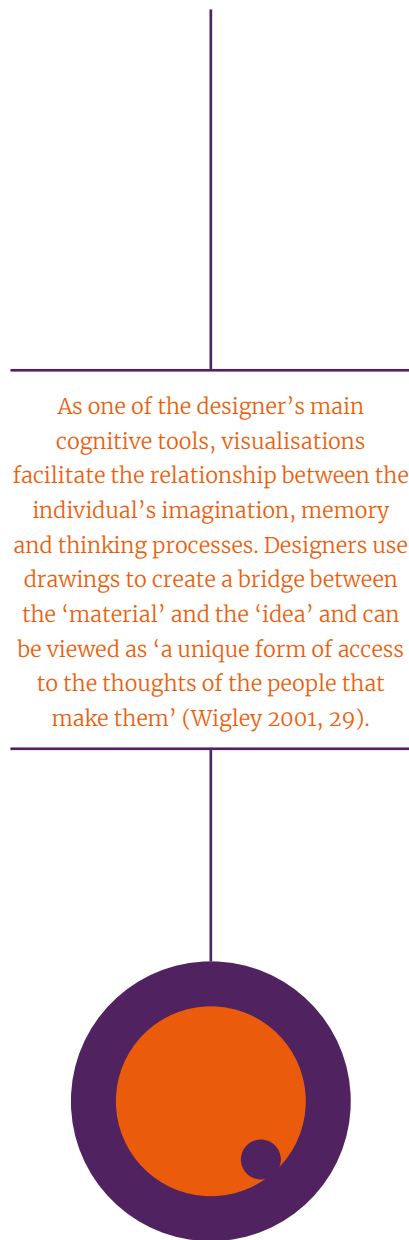
To Frascari (2011, 3–5), design drawings ‘are the very condition of architectural experimentations; they exist before tectonic experiences can take place’. If the objective of interior design is to imagine and propose unique spaces imbued with atmosphere, then its visual representations should do the same. As one of the designer’s main cognitive tools, visualisations facilitate the relationship between the individual’s imagination, memory and thinking processes. Designers use drawings to create a bridge between the ‘material’ and the ‘idea’ and can be viewed as ‘a unique form of access to the thoughts of the people that make them’ (Wigley 2001, 29). Therefore, design visualisations can express both the atmosphere of a space and the personal identity of the creator.

Designers forge atmospheres into something more tangible through visual means by preparing drawings, mood boards, rendered visuals and similar imagery as part of the design process.



Subject to technological determinism

‘Digital media offer a set of extraordinary easy instruments for producing and delivering images’ (Frascari 2011, 61). Technological determinism manifests in the introduction of newer visualisation and three-dimensional representational technologies in interior design, leading to the gradual loss of novel hand-produced visualisations and traditional means of generating imagery. Digital presentation drawings often look more like a photograph than a drawing, depicting a deceptive ‘reality’ for marketing purposes rather than an abstract language for artistic status (Hill 2006, 60). Frascari (2011, 14) refers to the ‘seductive



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coolness' of digital representation, which, according to him, 'fascinates architects, clients and architecture students, paradoxically even before they are enrolled in their first design studio'. He proposes a possible reason for this fascination:

“ [T]here is the belief that digital imagery grants instant legitimacy to architectural proposals through a superficial appearance of completeness without considering that this pseudo-completeness hides a loss of rigor.

As interior design educators, we share Frascari's observation that students obsessively see software mastery as a critical outcome of their learning. Technological determinism leads to valuing technology proficiency, not as a means to an end, but as an end in itself. A student's reflection in a module evaluation supports this: '*[we] didn't get a chance to learn the most important software where our field of study is concerned [...] We are just not equipped*'. The student refers to generating a photorealist visual representation from a three-dimensional model produced in discipline-specific software. This misconstrued view of learning outcomes can be attributed to technological determinism. We refer to Matthews' (2019, 415) criticism of technological determinism that sees the progression and inevitability of technological mastery as innately superior. Technological determinism leads to the production of 'utopian' (Medina 2017) and dustless representations that are 'plastic and duplicable and present [...] a misleading reality' (Miao 2020). Defaulting to the latest technology 'to

do the job for you' results in impersonal visualisations and is ultimately futile (Miao 2020).

Imagery that is solely created through digital input, without any direct interaction during the production process, results in visualisations that are 'harmful to architectural imagination' (Frascari 2011, 53). They are divorced from the traces of the maker, and their associated personal experiences, beliefs and values. Design education must allow students to explore who they are as designers and identify personal beliefs and experiences that may influence their actions in the design space (Tracey & Hutchinson 2018, 282–283). By extension, design curricula should introduce students to visualisation methods and aesthetic paradigms that offer opportunities for expressing identity and the unique affective characteristics of the interior.

Post-digital thinking

Alexenberg (2011, 36) argues that advanced technological ability is not enough to compose a narrative that will bring about 'joy in one's self [...] and [...] in others'. Post-digital thinking offers an opportunity to counter technological determinism and restore learner agency (Matthews 2019, 415, 417). This way of thinking does not reject the digital but opposes the homogenous technological determinist discourse (Matthews 2019, 424) and the obsession with perfect representation (Cramer 2015, 14). Repositioning design thinking in the post-digital introduces new approaches to design visualisation. Medina (2017) explains that this visualisation approach conveys the creators' intended atmosphere because of the introduction of narrative and the context and the

identity of both the project and creator.

To address the negative impact of technological determinism, we launched an online project in the second-year interior design studio during the national lockdown. Students were introduced to post-digital thinking and asked to express their normative position in a self-generated spatial illustration. Students expressed their personal relationship to design by selecting and collaging visual material they associate with emotionally and/or cognitively. The resultant visual compilations were imbued with meaning and personal identity, as illustrated in the five individual projects in Figure 1. These examples stand in opposition to hyper-realistic duplicable spatial representations that students uphold as the norm for interior design visuals.

Conclusion

A post-digital approach firstly offers a critical perspective on how technology is used in the visualisation process and, secondly, restores affective practices to the process of digital making. Explicit discussions of, and exposure to, post-digital thinking may encourage students to re-evaluate the emotive potential of interior design visualisations and thereby strengthen the profession's identity. From an individual perspective, a post-digital approach restores creative agency and shifts the focus from visual production to visual expression.



Figure 1. Visual compilations in five individual projects

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Erica Pretorius is a senior instructional designer at the UJ's Centre for Academic Technologies, having been appointed in 2005 after 20 years in the teaching profession. As a student at the former RAU, Erica obtained her B.Ed Hons in Educational Management in 2001, B.Ed Hons Computer-based Education in 2002, M.Ed Computer-based Education degree in 2005 and her PhD in 2015. She has since qualified as a certified Blackboard trainer and as an accredited education, training and development practices assessor and moderator. She is involved in lecturer training and support, promoting good teaching practice towards the idea of teaching students to think rather than merely to memorise.



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Charlotte van der Merwe is a facilitator at the CASD. She coordinates the Academic Preparation Programme for newly appointed staff, follow-up workshops as well as HoD workshops. She teaches and co-teaches on the Assessment for Learning and the Learning with Technology modules in the Postgraduate Diploma in HE programme. She completed her Master's in Educational Psychology and has presented papers at national and international conferences.



MOULDING:

A case for an authentic learning approach in a postgraduate higher education diploma module

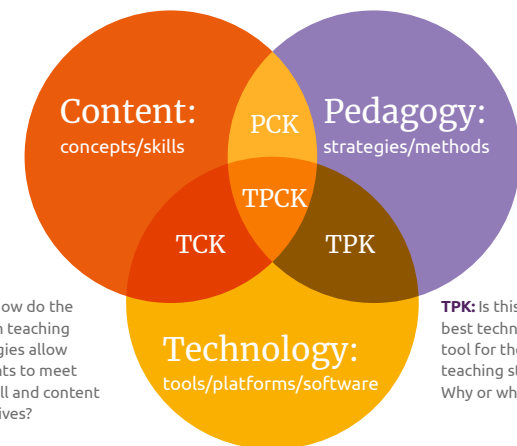
Recent interests in HE environments focused on designing authentic opportunities and activities to enable students to develop skills required for participating in the real world of work. Authentic learning endorses the provision of challenging and motivating learning experiences and tasks in a specific discipline, allowing for multiple perspectives and outcomes, and providing opportunities to refine input in order to present polished products (Herrington, Reeves & Oliver 2014; Ornellas, Falkner & Stålbrandt 2019). Authentic learning aims to strengthen the quality and relevance of HE programmes by focusing on enhancing profession-specific knowledge and skills. It also combines innovative pedagogies, digital tools and content to promote innovative teaching and learning methods and opportunities (Ornellas et al 2019).

Consequently, for the purpose of this module, the technological pedagogical content knowledge (TPACK) framework was embedded within the principles of authentic learning. TPACK is influenced by theory, research and practice underpinning trends in teacher education and professional development. This framework is often used to guide teachers' integration of content, pedagogy and technology, and how these elements interact with one another to produce effective teaching and learning (Valtonen et al 2017).

Authentic learning aims to strengthen the quality and relevance of HE programmes by focusing on enhancing profession-specific knowledge and skills.



PCK: How is the subject matter better illuminated by the use of this technology? Is this the most effective tool to teach the content and skills?



Are their other tools that could be used to achieve the same or better student outcome?

Figure 1. The TPACK framework (<http://alysajaynegdlt.blogspot.com/2013/03/the-tpack-framework.html>)

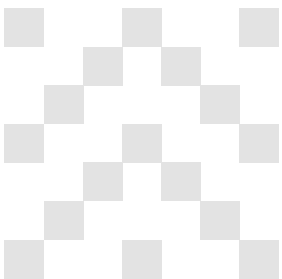
A challenge during the design phase was to eliminate the perception that this second-year module, called learning with technology, focused on technology rather than the actual teaching and learning process.



A challenge during the design phase was to eliminate the perception that this second-year module, called learning with technology, focused on technology rather than the actual teaching and learning process. Therefore, we specifically designed the module to focus on teaching and learning in an HE environment using technology as scaffolding. Moreover, we intended not only to develop the lecturer's pedagogical and technological skills, but also to enhance their sense of self-efficacy, integrating technology into their teaching practice. However, the focus remained on the design, development and implementation of the process of teaching and learning with technology.

At the outset, students were required to revisit, debate and reflect on which teaching and learning techniques they personally believed would yield successful experiences. The conclusion from the initial face-to-face group discussions, which revolved around traditional teaching methods, was that the typical student in this module still reverted to teaching the way they were taught, which is also a common finding in literature (Cox 2014; Oleson & Hora 2014). This presented a great challenge to the facilitators, as they now needed to familiarise the students with learning theories other than those relying mostly on content recall. Continued WhatsApp discussions resulted in educational approaches such as experiential learning, existentialism, authentic learning and social constructivism. At this point, the students received a copy of an approved short learning programme (SLP).

Students were required to design and develop their own 'module' for the SLP using a module map as a thinking tool scaffolding both the vertical and horizontal alignment of the SLP. The challenges that evolved during this process included the lack of student knowledge and ability to format learning outcomes and assessment criteria and match these to actual learning tasks and activities, although students were familiarised with these concepts in the assessment module in their first year.



During the online design and development phase that followed, students were introduced to the various technological functionalities available in Blackboard. Asked to match their module map to include the online functionalities, the students initially reverted to content dumping, once more focusing on traditional teaching approaches. In addition to the TPACK framework, students were also introduced to the concept of universal design. The basic universal design for learning (UDL) promotes social constructivism and transforms the one-size-fits-all instruction approach into offering diverse, multiple and accessible learning opportunities that can address the needs of students from different cultures and backgrounds (Dalton 2017; Rogers-Shaw, Carr-Chellman & Choi 2018). The concept of learning paths – where online learning processes were designed in a logical, intuitive and accessible manner – further supported multiple means of representation, action, access, engagement and expression as expected in UDL.

This phase took place during the COVID-19 lockdown, and students were subsequently required to present their online modules via the Blackboard collaborate functionality. All the students participated and offered positive critique on each other's module maps and online modules. These sessions were recorded, and students could revisit the sessions to improve their online offerings.

The concept of the community of inquiry was introduced next. This concept incorporates a cognitive, teaching and social presence in the modules. The cognitive presence refers to the content knowledge required for the module, the teaching presence denotes the way we present and teach specific topics, and the social presence could be linked to the ethics of care, meaning the grading, motivation, feedback and scaffolding of learning experiences and endeavours (Kilis & Yıldırım 2018; Stover & Ziswiler 2017).

Community of Inquiry

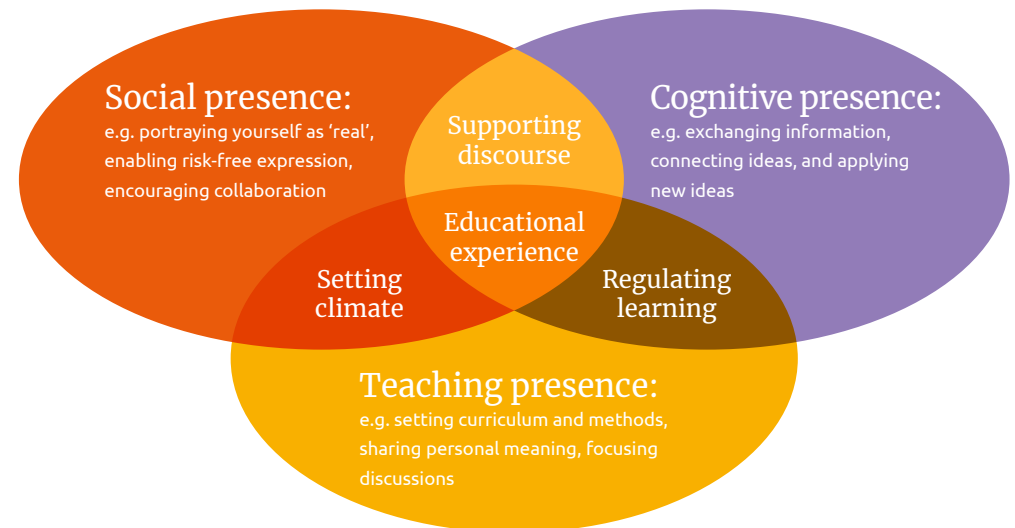


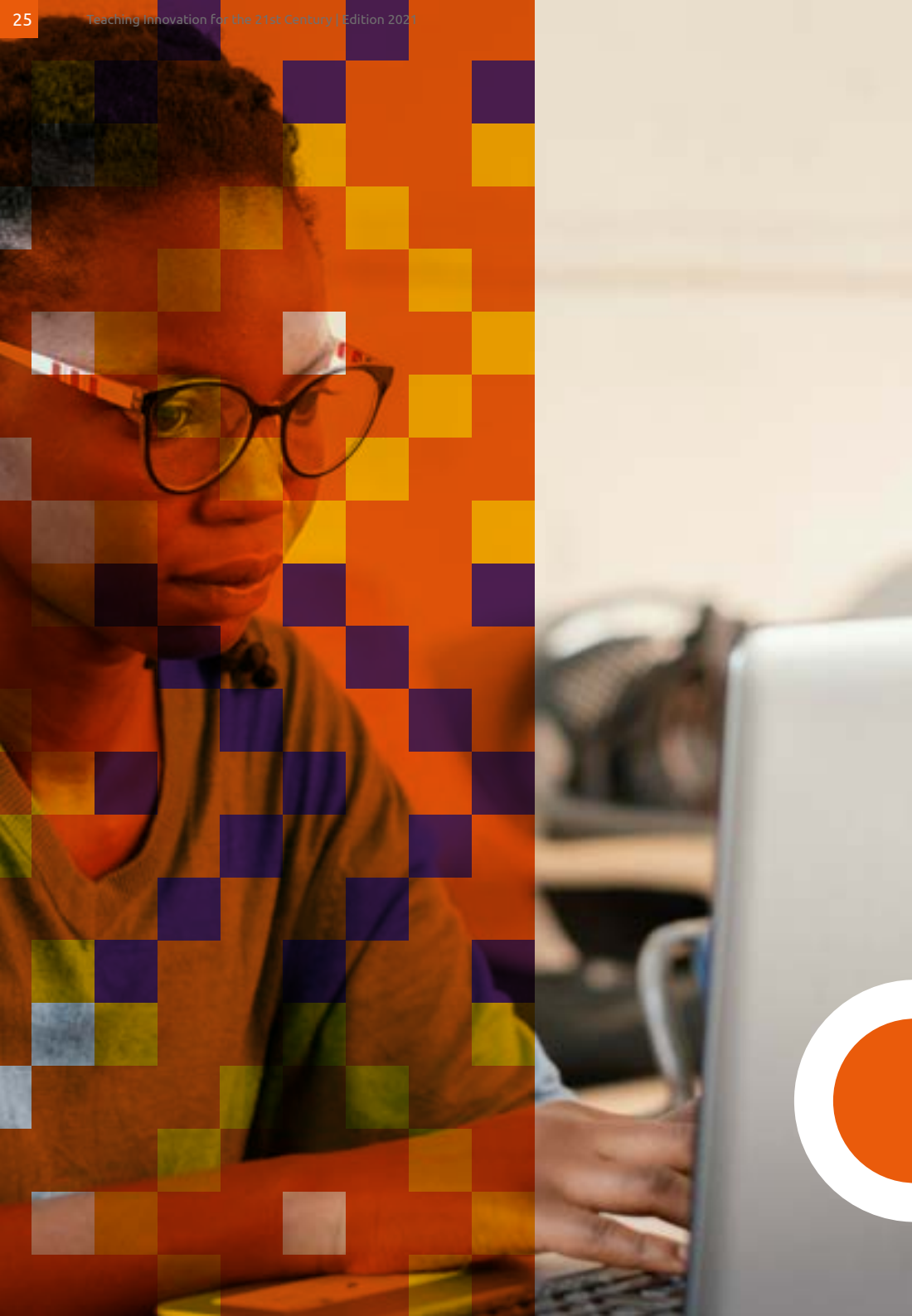
Figure 2. Community of inquiry (Garrison, Anderson & Archer 2010)

In addition to the above, a reflective journal was available to students throughout the entire module, and the final examination included an opportunity to reflect on their personal learning experiences during this module.

Table 1. Extracts from the reflections as aligned to authentic learning principles

Real-life experiences	<p>The module was about integrating and bringing to life every aspect of the PGDip HE programme.</p> <p>This module provides me with the opportunity to justify calling myself a module designer.</p> <p>I was able to apply the learning experience in this module to my own teaching and learning.</p>
Multiple submission working towards polished products	<p>I have become more aware and more sensitive to the needs of the students.</p> <p>I have made changes to the module map. However, my mark did not significantly improve.</p> <p>Other than that, the module was exciting.</p>
Multiple perspectives and outcomes	<p>The change to online teaching and learning has broadened my teaching approach.</p> <p>I think better planning is required in the teaching schedule.</p>
Challenging tasks	<p>I found myself a bit lost with regards to what was expected of me at first. I grappled with linking technology to this module. The module mapping construction stage was a bit challenging.</p>
Opportunities for reflection	<p>It is important to know your own learning practice and to develop that to full capacity. I am a pragmatist, and my teaching philosophy emanates from this point of view.</p> <p>I would really recommend any lecturer to enrol for postgraduate diploma, as it teaches you to be a reflective teacher and the dynamics in HE.</p>
Collaborative learning opportunities	<p>Working with different people helps one to think outside the box and challenges one to read and research more regarding online learning and teaching practice.</p> <p>Working in a team helps you develop personal and interpersonal skills and can bring out the best or the worst of a person.</p> <p>At the beginning of the module design I was bit confused as to what are the expectations, but due to group interactions that we had, I finally understood what my role is as a lecturer.</p> <p>The grouping was helpful. It helped us to work together, for example in the technical and vocational education training college where I work, I share a module with a lecture, and this module has given me more ideas to improve on collaboration tasks and implementing our online teaching during COVID-19.</p> <p>The module promoted collaborative learning, guidance on what is expected and clear instructions.</p>
Self-efficacy	<p>It has given me confidence to take my career to the next level. Lastly, the module has made me more aware of my own teaching style, and the theory that underpins has improved my practice.</p> <p>I feel empowered to approach the next year of teaching and learning with what I have learnt in this module and the overall PGDip HE course.</p> <p>The module contributed towards my personal growth in terms of not fearing the use of technology.</p>

At the outset, students were required to revisit, debate and reflect on which teaching and learning techniques they personally believed would yield successful experiences.



Conclusion

The feedback reflections posted by the students (Table 1) shows evidence of following an authentic teaching and learning approach. Real-life applications, challenging tasks, multiple perspectives and continuous opportunities for improvement were aligned with the authentic learning approach followed in this module. In addition, the collaborative and reflective activities also enhanced the students' sense of self efficacy. Further research into the implementation of the approach followed in this module in HE and relating to the affordances and barriers faced when following such an authentic learning approach in HE environment is recommended.

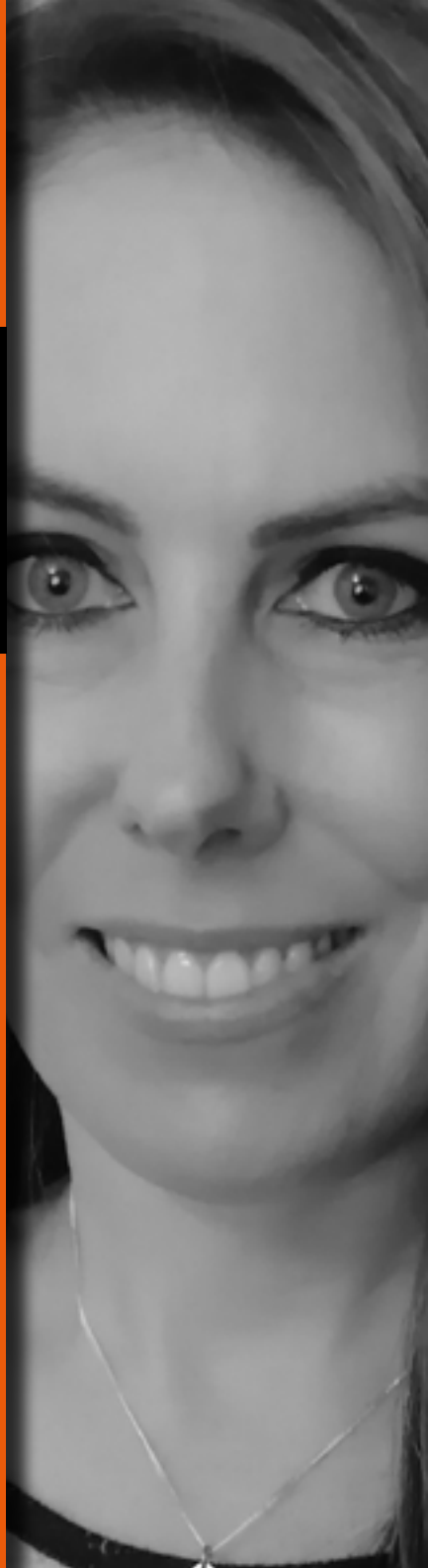
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Estherna Pretorius

Estherna Pretorius is involved in the training of future Life Sciences teachers (Life Sciences for further education and training teachers) offered by UJ (Faculty of Science: Department of Botany and Plant Biotechnology). She obtained her MSc in Biodiversity and Conservation (thesis title: 'Determining the Diversity of Nocturnal Flying Insects of the Grassland in the Krugersdorp Nature Reserve') at UJ in 2012 and completed her Postgraduate Certificate of Education (cum laude) in 2014. She is currently registered for a PhD (Botany). Her research is specifically focused on exploring species substitution in various herbal medicines through DNA barcoding.



TEACHING INNOVATION IN THE DEPARTMENT OF BOTANY AND PLANT BIOTECHNOLOGY

Making online learning fun! Keeping students engaged and motivated for independent learning

With the announcement of the national lockdown, UJ was forced to halt contact lectures, and lecturers embarked on the new journey of offering lectures to students online. Students and lecturers were all thrown into the deep end and faced many challenges. I realised that if I do not come up with innovative ideas and plans to support my students, I could be the reason that my students fail the module. Many students returned to their hometowns to stay at home for the lockdown period. Some of the challenges that the students have faced is the lack of a proper device and data to access online lectures and material, and connectivity issues due to bad reception and coverage. Furthermore, these students also do not have a conducive environment to study in and have chores and other family responsibilities to take care of while studying as well.

Taking all these challenges into account, I tried to steer clear of offering lectures in real time to include all students. I developed an action plan that would benefit most students. My online teaching strategy consisted of the following:

- 1 Using Blackboard to send email announcements on the morning of our scheduled lecture based on the timetable. The email contained info on the content that the student needed to work through on that day as well as a detailed summary of the content.
- 2 I created narrated PowerPoint lectures for students where they would then hear my voice explaining the content for each chapter.
- 3 I recorded videos with my cell phone where I would draw diagrams and explain difficult topics and posted these on my Life Sciences Instagram account and shared it on uLink (Blackboard).
- 4 I created an avatar of myself using the Bitmoji app, and these avatar images were then inserted into the lecture slides, which contained hyperlinks with additional resources (videos, explanations, and so forth) that would help students understand and learn.

All the material mentioned above made learning easier but was still not fun. So I created a 'virtual classroom', an interactive PDF document with my avatar in a classroom setting with various relevant images that contained links to all the resources that they need for each chapter. The virtual classroom is the one document the students needed to download, and it contained links to the complete lecture slides, recorded videos, YouTube videos, tutorial worksheets and other resources – a 'one-stop shop' for students to use while learning.



Many students returned to their hometowns to stay at home for the lockdown period. Some of the challenges that the students have faced is the lack of a proper device and data to access online lectures and material, and connectivity issues due to bad reception and coverage.

Figure 1. Virtual classroom – the heart

About the author:

Habib Noorbhai

Habib Noorbhai is a Senior Lecturer in Sports Science at UJ. Dr Noorbhai has been working in academia for the last eight years and has taught, published, supervised and convened in various areas of Sports Science, Biokinetics, Public Health and Wellness. His research focus areas are mainly in Cricket Science, Health Promotion and Healthcare Innovation. He has published more than 25 papers in numerous journals and has also presented at local and international conferences since 2012.



TECHNOLOGICAL TOOLS AND APPROACHES FOR EFFECTIVE REMOTE TEACHING AND LEARNING

Nearly two decades ago, Zhu and Kaplan (2002) indicated that teaching or supervision with technology involves four major components: the students, the instructor/supervisor, course content and technology tools. Technology should be utilised as a means for effective teaching and supervision and to expand and introduce current technological applications that can increase students' understandings and engagement. This ties in with goals to broaden the student's practical application of their content. It is such tasks that (we expect) are more suitable for students, since they seem to be more experienced with technology in the current age. A few technological tools and approaches are discussed below. Before these are presented, there is a summary of two theories underpinning the value and need for these tools.

Cognitivism theory

Teaching, interacting and engaging with students by means of PowerPoint presentations, group activities or videos, coupled with critical thinking and points of reflection (Moore 2011) is not sufficient in the current era of learning in HE. Usually, PowerPoint slides are used as teaching and learning tools to support rather than act as a teaching method itself. One cannot only use PowerPoint slides to conduct a lecture. Only using PowerPoint slides makes for an 'ordinary' lecture and does not support critical thinking. Coupling a PowerPoint presentation with supporting teaching tools and approaches – such as video, role-play, discussions/debates – makes for an 'extraordinary' teaching philosophy and approach. It is all about giving students that little 'extra' to encourage independent learning.

In most disciplines, content is supplemented by discussions that enhance higher cognitive thinking, and driven by student engagement. This process is based on cognitivism, which can be conducted intuitively within a number of pedagogical approaches (McInerney & Green-Thompson 2020). While this approach is useful and effective, students need more during remote learning.

Active learning theory

Discussion and role-play is also encouraged among learners, so that they can reflect on their own learning through peer-to-peer interactions and communications. The assessments can involve both assignments and tasks implementing topics of debate that cognitively challenge students (Oros 2007). In doing so, debate is further used as a pedagogical tool in class, in order to leverage the discussions outside the classroom and inform effective pedagogical approaches to practical implementation in diversified practices. Some of these other examples include think-pair-share, the use of student response systems and peer teaching, which are shown to be invaluable (Lujan & DiCarlo 2006). These align well with UJ's teaching values and philosophy in terms of: imagination, conversation, regeneration and ethical foundations. On the other hand, the 'flipped classroom', where students work through concepts together at their educational institution that were first learnt individually at home, is also useful for promoting active learning. Liu, Sng and Farida (2015) state that the 'flipped classroom' allows students to learn at their own pace, accommodates different learning styles, keeps students engaged and allows for time in class (or in a virtual class). With the COVID-19 lockdown, students have continued to engage with varied technological tools, despite inadequate or insufficient connectivity access, or being in isolation.



Figure 1. Practical example of Mentimeter (Word Cloud) in Wellness and Biokinetics class

Proposed technological tools and approaches

HandBrake – send videos via WhatsApp

Many teachers and lecturers have taught synchronously or asynchronously (using PowerPoint as videos) remotely. This can be challenging when video sizes are big. In addition, Blackboard sometimes gives an error for the recording link after one uses Collaborate Ultra. One way to mitigate this challenge is through HandBrake, which is a converter programme intended to both rip and convert video files to work on a number of supported devices. To ensure easier access to my teaching videos, I would sometimes convert videos to an adequate quality of less than 64mb and share them via my desktop WhatsApp application with the class representative, who would share the video with their peers in the class WhatsApp group.

Otter.ai

Aside from video, voice dictation and transcription has also been useful during remote learning. Otter.ai is a platform that develops speech to text transcription applications using artificial intelligence and machine learning. It also shows captions for live speakers, and generates written transcriptions of the speeches from audio and video. This is encouraged for students living with hearing impairment and for those conducting qualitative research using online tools.

Mentimeter

One of the most interactive and synchronous tools, Mentimeter, gives every student a voice, and 'stops only the loudest in the class from being heard'. One can test your students' knowledge, gather feedback, ask them to reflect and spark critical thinking with live polling features such as word clouds (see Figure 1), live bar graphs, open-ended questions, and so forth. Students can also answer with their smartphones.

Conclusion

A number of technological tools and approaches can be used within teaching practices. The aim of this piece was to showcase three tools and approaches that can be used to optimise remote teaching and learning. These tools and approaches could increase students' concentration levels and willingness to participate in online classroom deliberations. Online data collection and transcription could also facilitate postgraduate students' (qualitative) research tasks. Teachers are encouraged to find optimal approaches that will suit their pedagogical needs, but also the module and discipline, and apply these approaches in a way that will enhance remote teaching and learning.

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Kat Yassim

Kat Yassim is an Associate Professor in the Department of Education, Leadership and Management in the UJ Faculty of Education. She teaches senior undergraduate Education students in further education and training, as well as postgraduate students. Her current research interest at UJ is leading learning in the era of the 4IR. Together with her students, she is developing concepts around the learning revolution needed for education in the South African context in relation to the 4IR. In this regard, she is the coordinator of the 'ideal school' project with a consortium of four international Universities 21 partners. Professor Yassim uses critical theory and the capabilities approach to teaching, learning and research. She specialises in visual participatory. Sustainable and transformative learning is a prominent feature of her approach to education.



LEARNING BEYOND A GRADE:

Students teachers as app developers

The COVID-19 pandemic brought with it a scurry to adapt, an invitation to enter new frontiers for many teachers. As a teacher educator, I work with final-year students about to enter a fast-changing workplace that is becoming dependent on digital expertise. Fortunately, the research question we were hoping to answer enabled a responsive learning journey that saw students develop expertise in an area that is least expected. Many online platforms, like Google Classroom, have been designed for teachers but rarely does one find teachers developing online platforms that enable teaching in ways that make a difference to their discipline and the online pedagogy that they have thought about and with which they have a need to experiment. I embarked on a learning journey of my own as I deliberated preparing the 'ground' (Blackboard and WhatsApp) for this engagement. Using a living systems module design, I developed two stages for Teaching Studies 4 (TST00Y4), namely:

- 1 A set of online classroom engagements (disruptors) that developed the principles of an innovative digital learning environment; and
- 2 The process for self-directed skills development in creating an app for teaching and learning.

Disruptors

In this part of the module, the intention was to include students in research as participants. Through various engagements – discussion boards, film reviews, debate, blogging, reflections and Zoom interviews – students engaged with the Organisation for Economic Co-operation and Development conceptions of an innovative learning environment for 21st-century skills development. For example, students were expected to engage in a closed Twitter debate on the well-publicised conversation between Professor Jonathan Jansen and the Minister of Education on how to complete the school year during the COVID-19 pandemic. Another activity saw the students interview teachers, learners and parents about their experiences of online and alternate forms of learning. Yet another activity had students watch *The Man Who Knew Infinity* online and reflect on traditional classrooms and the kind of classroom that may be considered informal (in the case of this film, the temple floor), as well as how some learning environments result in learners thriving while others inhibit creativity, intellect and knowledge creation. Through the assessments linked to these activities, a thematic analysis enabled the co-creation of 12 principles of an ideal innovative learning environment. These principles formed the research base for the next stage in this module, namely the app creation.

App development

It must have been the search algorithms on my laptop and phone that led me to an online article that made me aware of developments in the world of app creation. I discovered that there is a way to create an app with no coding. Such a discovery was instrumental to what followed as Stage 2 in this module. As a teacher educator – and not an IT specialist – I had no idea about the process or skills needed to create an app, much less how to pedagogically develop lessons to equip my students to do so. This meant that I had to find and co-opt experts into my classroom planning circle. Professor Grace Leung in the Computer Science Department provided me and my teaching team with relevant insights into what app creation without coding would entail. She introduced us to online app development freeware Glide. Two tutors familiarised themselves with app and helped develop a user guide that students could use to develop their skills. We introduced students to design thinking and an app called ZilLearn as starting points before setting them free to explore Glide and the possibilities it offered for app creation. It was impressive how students took on the challenge to learn, by themselves, all that they needed to know and excel in to develop their apps. A small group of tech-inclined students developed a community of practice online forum to support their colleagues, creating process shortcuts ('cheats') that made the work easier. At the end, 402 apps were developed and submitted. These took into account the 12 innovative learning environment principles that were co-created in Stage 1 of the module. Two examples follow below.

Mr Jarred Ramnarain (Student No. 217000331)

App link: <https://lifesciencnesgrade11.glideapp.io/>

Video tour: <https://drive.google.com/file/d/1fzxfORVjSKV0985c98hvNVzw2ghWPTK/view?usp=sharing>

Ms Savanah Lee Hodgkinson (Student No. 201700460)

App link: <https://tan-cannon-2904.glideapp.io/>

Video tour: <https://drive.google.com/file/d/1e3w6f7Go6LPnfre7RqxK1RIQajCnkZom/view?usp=sharing>

Student experience

The design and demands made in this module forced students out of their comfort zones. For some, this was an exciting, intriguing and motivating journey. For others, the discomfort had to be managed. This is evident from the student feedback on the module:

“ Learning how to develop an app took hours and hours [...] more time than I have ever invested in learning something for my modules, but I wanted to learn how to do this and it paid off. I now have a skill for life.”

“ This is what 4IR learning looks like. The 4Cs in action.”

“ More, more, more of this kind of learning. I was engrossed in this app development beyond the normal hours. I invested time because I wanted to.”

“ I must admit, I was daunted at first. Me create an app??? But when I got into it, and I found the community of practice my learning soared.”

“ We got closer as learning community in this module because we struggled together. The community of practice was ubuntu in action. At some point one of my classmates sent me data because I ran out.”

“ This assignment went beyond a grade. I wanted to learn, and I wanted to create not for a mark but for enhancing my expertise as a teacher in the making.”

“ I am so proud of what I achieved in this module. It gave me skills for the future. This is what all our modules should do.”

“ I demonstrated my app in an interview recently. I got the job based on that demo. We learnt something that took us into the future.”

Conclusion

As a lecturer, I couldn't be prouder of how students engaged in an alternate model of teaching and learning where the study guide was fluid, where the activities leveraged into research outputs as design principles, and where their research was from an unfamiliar field (IT development). The risks I took paid off because of one belief, that I have capable students with amazing potential to be and do anything. All they needed from me was the right motivation, a relevant and responsive pedagogical approach and a learning environment that allowed experimentation and collaboration. Professor Sugata Mitra speaks of 'self-organizing learning environments', which I think we successfully created through online engagement.

About the author:

Nicole Badriparsad

Nicole Badriparsad (née Moolman) is a Lecturer (clinical facilitator) within the Medical Imaging and Radiation Sciences (MIRS) department. She holds an MA in Diagnostic Radiography. Her academic interests are radiation protection and dosage and paediatrics, as not enough is being done in South Africa to ensure correct dosage when imaging paediatrics.



SIMULATED X-RAY TUBE MADE FROM RECYCLABLE MATERIAL

Medical Imaging and Radiation Sciences (MIRS) students require a two-week rotation between their clinical practice and UJ. In order to graduate after their four years of study, they require 2 800 hours of clinical training within their clinical practice. The first-year MIRS students are exclusively at UJ for six months in order to facilitate the integration of theoretical knowledge into practice. This integrated learning best prepares the students for their transition into the clinical environment. The coronavirus (COVID-19) pandemic proved to be quite a challenge. The negative impact on clinical education required a great deal of creativity to inspire and motivate the students to persevere amid their numerous challenges.

Due to the COVID-19 pandemic, numerous UJ clinical placements and classes were suspended with the hope to mitigate viral transmission. The Department of Higher Education and Training thus enforced remote learning, consequently omitting traditional 'contact' learning. The university uses Blackboard to communicate with the students and conduct all online teaching and learning. There was a fundamental shift in the attitude to learning, with some students adapting well to their new normal but the majority were distressed by the many setbacks. While online platforms may be sufficient for senior students who have had the necessary induction and practical training, junior students require patient contact and exposure to X-ray equipment in order to integrate learning. Within the first year of study, it is paramount that they grasp the basic concepts of technical X-ray factors. The students struggled to grasp basic concepts to radiographic positioning and terminology without actual demonstration and practical application. Thus, with regards to the first-year students who have not been in a clinical environment, this proved to be quite

challenging. Losing out on the key elements that have to be transmitted via contact learning element – namely moving and positioning of the X-ray tube, positioning of the X-ray phantom, and placement of the imaging receptor (IR) or setting exposure factors – resulted in first-year students unable to apply knowledge.

A key challenge was to creatively replicate their clinical environment. This emphasised the need for a virtual simulation-based educational tool. As an alternative to clinical tutorials at the X-ray clinic of UJ's Doornfontein campus, I designed and constructed a simulation of the X-ray tube. Prior to the design and construction of the simulated X-ray tube, I had also created a YouTube channel specifically for the students (https://www.youtube.com/results?search_query=nicole+badriparsad).

The YouTube channel was used as a tool and platform to share and upload. I would upload X-ray positioning recordings, demonstrating various anatomical structures and technique. The video recordings were taken in clinical environments with which the students could identify. The YouTube videos allowed the students access to clinical X-ray positioning via their mobile devices and/or computer. However, due to COVID-19 restrictions, I was only able to record a limited number of positioning videos, so the need for virtual simulation in a clinical module was evident. The simulated X-ray tube (Figures 1 and 2) was made using recyclable household waste material. The simulated X-ray tube in accompaniment with a

mock interventional radiology was used during Blackboard Collaborate sessions. The simulated X-ray tube was constructed to display X-ray tube motion from left to right as well as rotate the tube 90 degrees towards the mock erect bucky. The simulated X-ray tube was coupled with side handlebars used to demonstrate the agility technique. The simulated X-ray tube was mounted at a functional specification of 100cm away from the interventional radiology, known as focal film distance (FFD). With the use of the simulated X-ray tube, I was able to portray the fundamentals of basic technical X-ray factors. In addition, I was able to demonstrate and explain the various positioning techniques with the aid a phantom (Figure 3).

The capacity to engage and communicate effectively and efficiently with the students is imperative in creating an online social presence that encourages the students to engage and stimulates the thought process, thereby facilitating the integration of knowledge into practice. The online interactions among the students fostered relationships amid isolation that could have proved tedious due to COVID-19.



Figure 1. Simulated X-ray tube



Figure 2. Simulated X-ray tube

The lecturers teaching is also good, she tries her best to accommodate each and everyone, she even makes equipment that will help us understand better when she teaches us, she's also dedicated and cares a lot about us

Figure 3. Snippet taken from module and teaching evaluation

About the author:

Kulsum Kondiah

Kulsum Kondiah is a Senior Lecturer in the Department of Biotechnology and Food Technology at UJ. Though she has been teaching for ten years, she learns something new in her classroom every year. Her research is multidisciplinary and focuses on applying nano-bio-platforms in the remediation of water and the development of diagnostics for water-borne pathogens.



PUTTING THE FUN IN FUNDAMENTAL BIOCHEMISTRY CONCEPTS WITH GAME-BASED LEARNING

Learning new information or behaviour involves communication between neurons in the brain. Repetition allows these neurons to communicate frequently, thereby strengthening the neural pathway that was created. This enables the same information to be passed on faster and faster as repetition continues, subsequently transferring it from our conscious to subconscious. Not only does it become easier to access the information/skill, but it also gives us the ability to make connections to previously learnt knowledge.

Repetition is a necessary tool in every classroom; it plays an important role in reinforcing learning of fundamental concepts, especially in Science. However, it can also become mundane and boring if presented in the same manner, and students lose interest along the way, a 'phenomenon' that I am sure every lecturer has managed to accomplish at some point in their teaching. Finding innovative ways to continuously keep students focused on content that they may already have engaged with can become a challenge.

This is where Kahoot! (<https://kahoot.com/>) came in to my classroom prior to COVID-19. Kahoot! is a game-based online learning platform. At first glance, it may be easy to dismiss this tool as a kid's game because of all the colour, sounds and comic icons. But learning is supposed to be fun, whether you are at home, in a tertiary institution or at work, and this platform did exactly that for my Biochemistry students.

I signed up for the free Basic plan, which was sufficient for what I wanted to achieve. At this level I was able to create short online quizzes in minutes, share them with my students and host a live gaming session. Students were able to sign up as individuals or teams and use

their mobile phones in the class to answer the questions, and some of the students got very creative with their team names. I used Kahoot! to achieve the following:

- 1 Gather pre-existing student knowledge,
- 2 Increase/reinforce student learning during subsequent lectures, and
- 3 Review student understanding in preparation for assessments.

My first Kahoot! quiz was an ice-breaker. I used it to gauge students' interest and knowledge of the diplomas (Biotechnology and Food Technologies) we offer. This information is very helpful in determining what approaches/interventions aid students to grow in their chosen paths or spark interest in a subject in which they may initially be disinterested.

Figure 1 shows one of the questions to which students almost always give an honest answer. Luckily, the majority (90 percent) of the class in 2019 that had registered for the Diploma in Biotechnology or Food Technology were present because they wanted to be there. This was also a great way of familiarising them with how to navigate the Kahoot! app on their mobile devices.

Questions focusing on concepts (Figure 2–A and B) that were taught during a previous lecture were posed to students at the next lecture using a Kahoot! quiz. Once the quiz was complete, each question was briefly

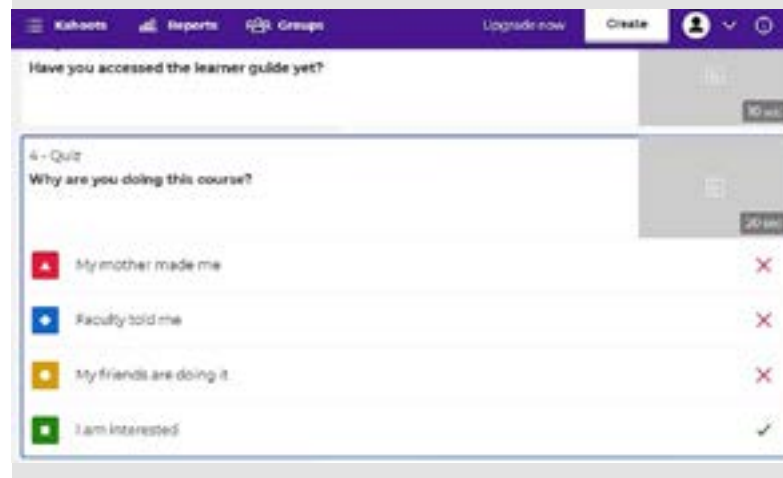


Figure 1. Example of a question aimed at assessing student interest in the Diploma of Biotechnology and the Diploma of Food Technology during their first Biochemistry lecture.

reviewed with the students focusing on areas where they had struggled. In addition, they were referred to the appropriate lecture slides where they could find the associated content.

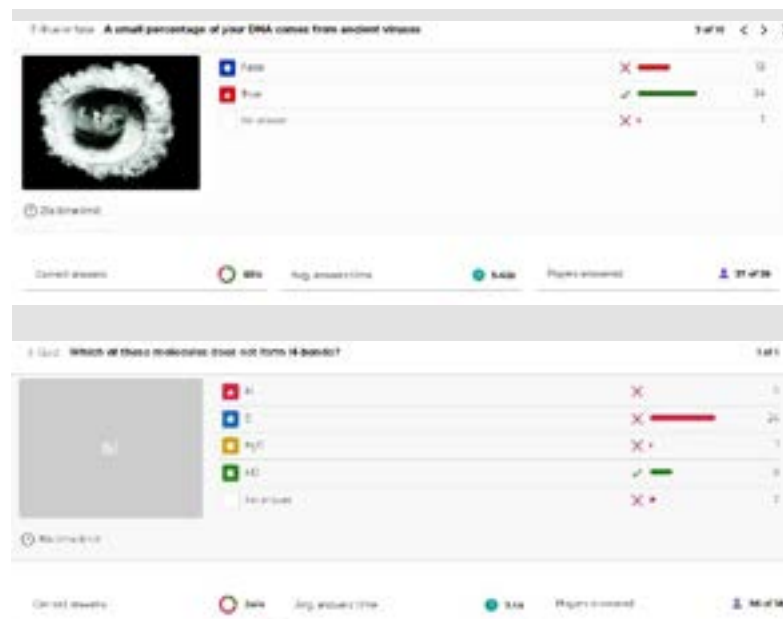


Figure 2. Questions based on the review of concepts. Example of an easy (A) and challenging (B) question.

‘Repetition is the mother of learning, the father of action, which makes it the architect of accomplishment’ – Zig Ziglar (‘Let’s do it Again ... And Again! Why is Repetition Important to Learning’ 2018)

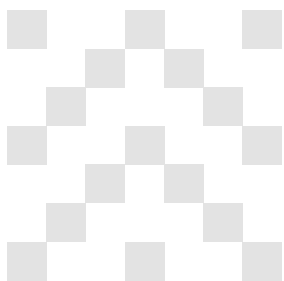


Without a doubt, every year that the module is evaluated, students find Biochemistry challenging because they are required to name, identify, draw and characterise a large number of biomolecules in a short space of time.



Reports that break down the results of responses by question or by player are generated and can be downloaded. These reports can be used to establish where students could be struggling based on the percentage of correct answers and the average time taken to answer the question (Figure 2).

Without a doubt, every year that the module is evaluated, students find Biochemistry challenging because they are required to name, identify, draw and characterise a large number of biomolecules in a short space of time. This can become tedious and boring in the classroom. Furthermore, a lot of students attend class having not eaten a meal or are simply exhausted from completing assignments and reports, which means present bodies, absent minds. I introduced Kahoot! as an intervention for learning biochemical concepts by reinforcement, but I gained a lot more from this gaming app. I was able to grab students' attention, interact with them, especially during early morning or late afternoon double lectures, and even familiarise myself with some of their characters (difficult with a class of 135 students). There was meaningful chatter and enthusiasm to learn in my classroom, and excitement was abuzz every time I asked them to pick up their cell phones. It even made way for a bit of healthy competition between teams when the podium (Figure 4) came up. The value of using this app in my classroom was reflected in my teaching evaluation, where some students commented on their classroom experience:



‘The quiz she created for us was so much fun and always exciting to take part in. Basically, she’s a 10/10.’

‘She makes the learning experience fun sometimes by using educational apps like Kahoot!’



Figure 3. Kahoot! podium showing points accumulated in a quiz and position status of the top teams.

In the midst of the COVID-19 pandemic and the shift to online teaching and learning, I was unable to continue using Kahoot! in my online classroom. This was because I had to be conscious of how much data students would need to respond online in addition to the reduced number of online lectures available to cover course content. However, repetition as mentioned before is important in the learning cycle, so I utilised the polling functionality in Blackboard Collaborate to reinforce and review student learning during the online lectures and in preparation for online assessments. While it is not as much fun as Kahoot!, I was still able to generate interest in the students who answered questions with enthusiasm and enjoyed receiving encouragement and smileys when they were engaged with the content.

Kahoot! is a user-friendly online tool that can help you create an exciting and interactive classroom. One can find a collection of online quizzes shared by others or set up challenges for students who can answer questions at their own pace. It made learning a challenging subject like Biochemistry fun for my students.

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Alban Burke is an Associate Professor in Psychology and was a member of the Department of Psychology from 1995 to 2015. His main interests are in abnormal psychology, cognitive psychology and neuropsychology. He is currently the Director of the Centre for Psychological Services and Career Development (PsyCaD) at UJ.



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Leila Abdool Gafoor

Leila Abdool Gafoor registered as an Educational Psychologist in 2011 and joined PsyCaD in 2011. She was the team leader for Psychological Services from 2016 to 2017 and has been team leader for Disability Services from 2018. She is the current chairperson for Higher Education in South Africa for the Gauteng, Limpopo and Mpumalanga regions.



HELPME.COM:

Student counselling during lockdown

Although there have been research and discussions on online, telephone and digital counselling over the last two decades (Barak & Grohol 2011), there is a lack of synthesis of research findings and application in practice. Findings highlight the advantages of online psychotherapeutic interventions including anonymity, greater access to services, as well as savings in terms of money and time. There are, however, also a number of concerns related to online counselling, such as ethics, a lack of cyber security, connectivity issues, and in some instances lack of privacy for the client in their own environment.

In addition, there has also been resistance from mental health professionals and clients who firmly believe in the advantages of face-to-face interventions. The essence of this resistance lies in both counsellors and clients feeling that there is a lack of personal connection in cyberspace. Many counsellors maintain that there is a lack of essential information, such as non-verbal cues, online.

COVID-19 forced us to navigate our daily lives around physical and social distancing. Our reliance on digital forms of communicating and interacting has also become greater. Health and mental health professionals have had to adjust their interventions to provide essential services to their clients, specifically students in need of help. During the past couple of years, student mental health has become a focus point for tertiary institutions, both nationally and internationally, and COVID-19 brought about new problems or exacerbated existing problems (Grubic, Badovinac & Johri 2020).

A number of articles (Kato, Sartorius & Shinfuku 2020; Tang, Zhang & Wei 2020; Ueda, Stickley, Sueki & Matsubayashi 2020) focus on the mental health sequelae of the pandemic. These include feelings of isolation, despair, hopelessness, anxiety, depression and fear, which inevitably gave rise to increases in suicide ideation, attempts and successful suicides.

COVID-19 forced us to navigate our daily lives around physical and social distancing. Our reliance on digital forms of communicating and interacting has also become greater. Health and mental health professionals have had to adjust their interventions to provide essential services to their clients, specifically students in need of help.

The lockdown forced both staff and students to online teaching and learning and connecting over great distances. Student counselling needed to adjust rapidly to provide services to students remotely. It has been documented that one can provide different types of mental health interventions on various digital platforms. In some instances, psycho-educational interventions could be provided effectively via various social media platforms such as Facebook, Twitter, Instagram, YouTube, Tik Tok and WhatsApp. With the advent of platforms such as Zoom, Google Meet, Skype and Microsoft Teams, clients and counsellors are able to make audio-visual contact.

As we entered hard lockdown, PsyCaD made immediate telephonic contact with existing vulnerable clients and put in place a virtual call centre. Students were able to phone and log a request for a telephonic/online consultation. To minimise data costs for the students, who already face severe financial difficulties, the counsellors reached out.

The first priority for PsyCaD was to provide support for students living with disabilities. The Disability Unit contacted students both telephonically and via email to explain new processes put into place to support them virtually. This was especially important in relation to tests and examinations. A survey was also sent to students to establish their needs, and later, an evaluation to understand how processes could be improved. Digital guides were created





for both staff and students in terms of software, hardware and interventions that could be put in place to support students with disabilities. A training video and a Blackboard module was created to prepare staff supporting students with disabilities. All events planned for the year were run digitally on platforms such as Facebook Live, Zoom and Microsoft Teams to ensure that students seeking employment still had contact with potential employers and so forth. There were for instance online Industry talks with law and IT firms. A talk about disability and sexuality was hosted on Microsoft Teams and was well attended by both staff and students with disabilities. The Disability Unit also hosted online talks by companies and organisations that provide support for people with disabilities. These include the SA Council for the Blind, Blind SA and Sensory Solutions. Tests and exams were run via Blackboard and, for those with visual impairments, editing for disability software was done remotely to ensure that no student was compromised in this time.

In addition to online and telephonic counselling, there was a number of psycho-educational interventions via social media platforms, ongoing online talks such as Mental Health Mondays were introduced, and an online support group 'met' on a weekly basis. A number of self-help videos as well as a number of other resources were made available on Blackboard for students. These included, among others, video clips on managing stress and anxiety. Webinars on a whole range of topics were hosted by PsyCaD psychologists. A social media series on gender-based violence was run, as it became evident that many students were exposed to various forms of abuse during lockdown. An Android app provided essential contact numbers and information for accessible self-help interventions.

PsyCaD takes holistic development and support of students seriously and also provides self-development and preparation for the world of work

online. One of the biggest interventions in this regard has been facilitating online career fairs, career assessments and career guidance. Career Services also facilitated interactions between students and potential employers and provided essential support for companies in order to recruit UJ students.

Although COVID-19 has had a devastating effect on society, it has also taught us a number of valuable lessons. Psychologists often refer to post-traumatic growth, and there are signs everywhere that people have adjusted successfully and have learnt valuable lessons. The future for counselling services would be a hybrid model, that is, face-to-face and digital interventions. The pandemic has resulted in an impetus for the science and practice of psychology to embrace the 4IR and come up with innovative ways of providing mental health support for society.

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About the author:

Suzaan Hughes

Suzaan Hughes is a Lecturer in Business Management in the College of Business and Economics. She has a keen interest in leveraging technology to enhance student learning and engagement. Suzaan initiated and continues to co-manage the longitudinal research project 'Increasing the Impact of Simulation-Based Courses'.



SIMULATION- BASED LEARNING BRINGS FUN AND GAMIFICATION INTO THE ONLINE CLASS

Reaching students with the right blend of engaging and authentic pedagogy is the modern educator's challenge. It is one accepted with creativity and continuous learning in Strategic Business Simulation, which is a capstone module in the B.Com Honours in Strategic Management. To succeed, students need to develop multidisciplinary and critical thinking skills. Their programme culminates in putting learnt theory into practice. How is this accomplished? In self-selected teams, students are allocated virtual companies to run in a simulated online business environment. Students share the responsibility of managing every aspect of their company by making decisions including research and development, marketing, finance, production and human resources. All these decisions are made for each round, which is condensed to represent a year, and once the deadline passes, an algorithm calculates the competitiveness of each team's decisions based on established business principles.

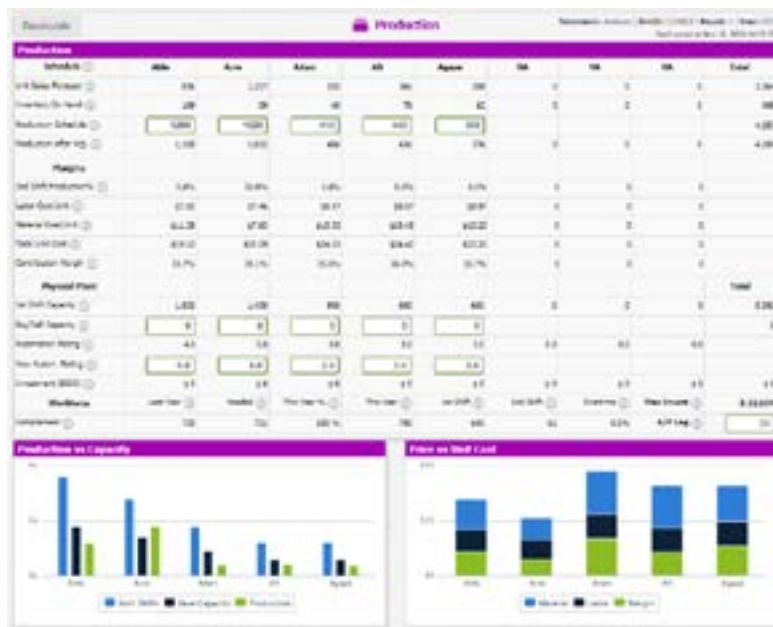


Figure 1. Decision screens in the Capsim simulation

The simulation is an excellent example of gamification, and of a serious game in particular, which means that elements of 'games', such as competition, ranking and collaboration are employed in the pursuit of not just fun, but of achieving learning objectives. Gamification in general, and the simulation in particular, have sparked my interest as an engaging pedagogy. The premise of gamification is that students are involved and participate, and this aligns well with Kolb's approach to teaching, outlined in the learning cycle he proposed (McCleod 2017). Kolb's learning cycle moves from concrete experiences to reflective observation, abstract conceptualisation and then back to active experimentation. Many of the activities and assessments that I create for students provide experiences that they can reflect

on, conceptualise and continue experimenting with, especially in the simulation where each subsequent round (financial year's decisions) provides an opportunity to apply what has been learnt.

The simulation presents an opportunity for students who may not have any work experience, or who may have work experience but no senior management experience, to take responsibility for the entire operations of their virtual company. This means each simulation becomes a unique case study utilising a problem-based learning approach. Students are presented with complexities and opportunities for learning. Students' asynchronous online engagement with the simulation is normally blended with synchronous teaching interventions. Classes are used to debrief students about their results,

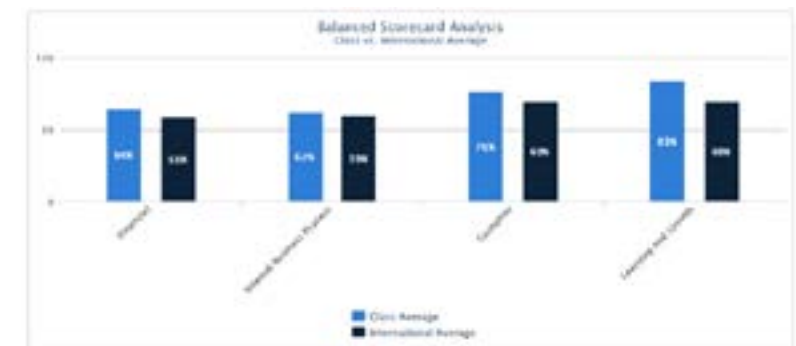


Figure 2. High-level comparative feedback provided by the simulation

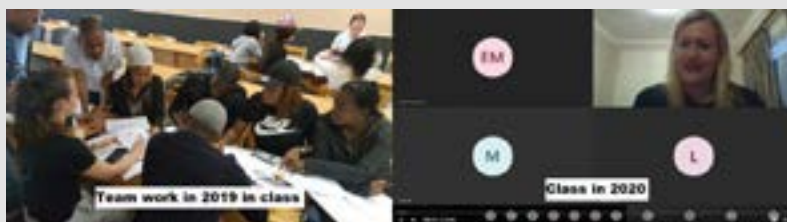


Figure 3. Team work in 2019 class, and class in 2020

Week 9 Reflection

Questions Responses 133

Give examples of how you have taken leadership in your team throughout the course of the simulation.

Long answer text

What have you learnt about yourself as a leader? *

Long answer text

How would you describe your leadership philosophy? *

Long answer text

Now that you know what the impact of your ethical decision is, would you make the same decision again? *

Yes

No

Figure 4. Reflection question example

clarify and cement concepts. Although the module was already blended in its composition, the fully online mode of delivery in 2020 presented new challenges and dynamics, as experiential class-based activities could not all be translated into a virtual setting.

Given the constraints of data and connectivity, classes were often me looking at someone's initials on a screen, but I worked to counteract this by scheduling team check-ins after a short virtual class. The size of the class made this approach possible, which meant that everyone's voice could be heard. Additional consultations were scheduled based on team requests that were, as always, closely connected to the performance of their business.

Part of Kolb's experiential learning cycle is reflection, and the premise is that learning is cemented during this reflection phase. Asynchronous interventions include weekly tailored reflections completed by students accessing a link from Blackboard to Google Forms, with the aim of developing reflective practitioners.

An interesting dilemma that online learning presents is how to bring every student's voice into the class. I had not met students yet, and they needed to work in teams and get to know each other. I really miss seeing my students, so I looked for a way to counteract this loss of face-to-face, interpersonal interaction with technology. I used Flipgrid, an app that allows students to easily record, upload and share videos. The grid I started could only be accessed by my class (preserving privacy), and vlogs were assigned as small continuous assessment tasks.

I encouraged students to view the videos of peers before finalising team selections, but their engagement with the task and each other exceeded my expectations. The first two-minute 'say hello' videos had 5 402 views as they proudly shared their own vlogs and watched and commented on the videos of others, which was not a requirement. Learning from them and embracing the functionality Flipgrid offers, I made commenting on the videos of peers part of the remaining vlog submissions.

The semester traditionally culminates in a stockholder debrief where student teams present their company's performance to a panel. The classroom is flipped, as students have to make a professional presentation and answer thought-provoking questions about lessons learnt and learning experiences to a panel of experts. In 2020, to avoid technical glitches, each team pre-recorded their presentation and submitted it in video format, and only the question-and-answer session with the panel took place live and synchronously. The UJ philosophy of 'learning to be' is enforced by supporting students in the development of implicit skills, improving their employability. The extensive use of technology improves students' relationship with technology, increases their use of and comfort with technology, and encourages team work, leadership, communication and critical thinking.

As part of my own quest to reflect and improve my teaching praxis, I initiated a scholarship of teaching and learning research project in 2015, in the Strategic Business Simulation

Jul 11, 2020


Say Hello on Flipgrid!

29 responses • 582 views • 0 comments • 1598 hours of engagement

Welcome to Flipgrid! Tap the green plus below to open the Flipgrid Camera. Then, record a short video and...

👤 Say HELLO and your name.
Why you are doing honours in Strategic Management,
Do you have some work experience you would like to elaborate on, or goals for the future?
Your view/philosophy on strategy.
If you could choose, coffee or tea?

Join Code: [7xcsd418](#)



Aug 16, 2020

Explain the concept

30 responses • 3525 views • 47 comments • 34229 hours of engagement

The simulation is filled with the practical application of theories, with the inter-dependence of concepts coming into play. Removing the complexity of real life decision making, in your video do the following:

- Select a concept that is at play in the simulation and explain how the concept influences outcomes in the simulation.
- Clearly identify the concept and theory related to it (provide relevant journal authors, citations and shortcomings of the theory)
- Provide constructive feedback to at least two of your peers that have not received feedback yet on the quality and helpfulness of the explanations in their videos.

Note: you do not need to divulge your strategy at all in this video.



May 6, 2020

Time Capsule Video

22 responses • 1277 views • 0 comments • 1867 hours of engagement

In your video, do the following:

Unpack the key lessons you have learnt from the simulation experience and distil them into advice. Consider that your video will go into a 'time capsule' and will be unearthed in future. It will be used as advice and guidelines by "future simulation participants" that could benefit from your hard won insights.

Consider that the benefit of the guidelines in your video should be advice and guidance (drawn out from your experience) and speak in broader terms rather than providing step by step directive instructions on particular decisions to make (which could unintentionally rob future learners of their own lived learning experiences). Consider yourself the mentor instead of the tour guide.

Note: In your video in the write up, please indicate if it would be risky with you if your video was to be shown to Simcenter students in future.

Join Code: [e5e98238](#)



Figure 5. Flipgrid video instructions

(STM8X15) unit, with an academic at IIE MSA who uses a similar simulation to engage students. The project title is 'Increasing the impact of a simulation based course'. The latest article from this project is currently in press and sought to present an overview of teaching interventions in simulation-based learning. Two other articles have also emerged from this project, one outlining the importance of reflection and another outlining the methodological choices made thus far.

In 2017, as part of the simulation research project we applied for the Quacquarelli Symonds (from the QS University rankings) Reimagine Education Awards. Our teaching and research project was shortlisted under the Management and Executive Education category. In addition to presenting at the awards, we had to submit a two-minute video overview of our project which can be viewed using this link: https://youtu.be/if2f0ldO_go. The funding the project received from the UJ teaching innovation fund has enabled further data collection and publishing. The project was also presented to colleagues at the Teaching and Learning Symposium hosted by the Division of Academic Staff Development in 2018.

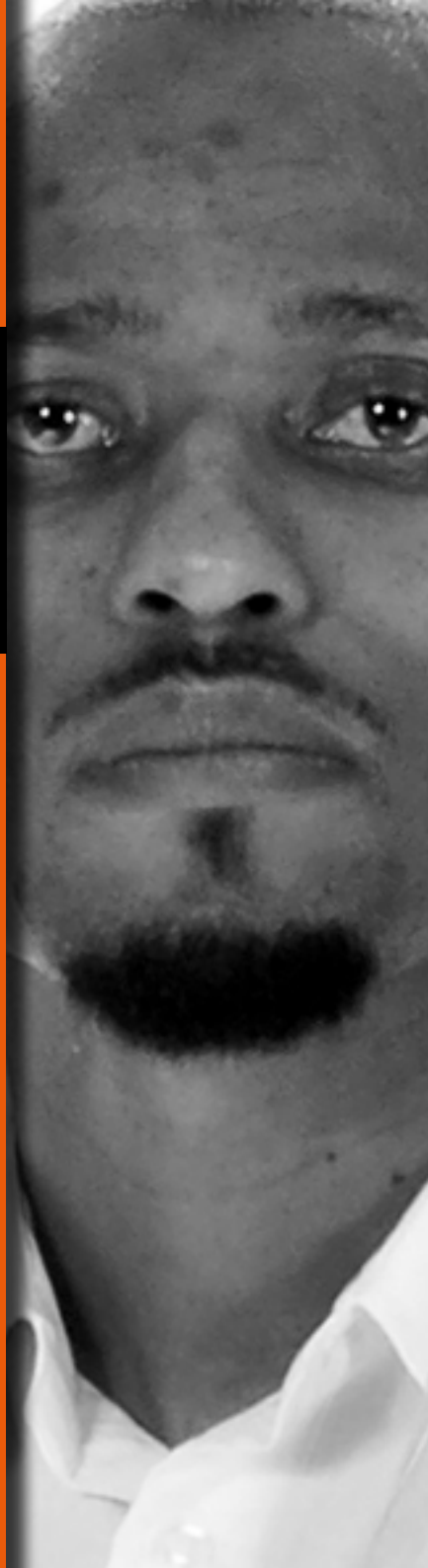
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Gilbert Motsaathebe, PhD, is an Associate Professor in the Department of Journalism, Film and Television at UJ in South Africa. He previously taught at the United Arab Emirates University in the UAE and the Cape Peninsula University of Technology in South Africa. He also lived and taught in Japan and India, where he was a fellow of the South-South Exchange Programme for Research on the History of Development. He is also the editor-in-chief of the *Communicare: Journal for Communication Sciences in Southern Africa*. Prior to joining academia, he worked as news producer and output editor for television stations such as Bop Television, SABC and e-TV before serving as manager of communication and media relations for the North West Provincial Government in South Africa. He is an alumnus of the prestigious International Visitor Leadership Program of the US government. His research interests include feminist film criticism, post-apartheid films, media and gender, journalism education and practice, African rhetoric and multiculturalism. He has published extensively in accredited peer-reviewed publications, and he is a regular speaker at national and international conferences in the areas of film, journalism, communication and media studies.



FROM CLASSROOM TO NEWSROOM:

Simulating the newsroom in a classroom environment to teach critical TV journalism skills

During my career in television journalism, I realised that the theory did not thoroughly prepare the students for what is happening in industry. I have taught in South Africa, Japan, India and the United Arab Emirates. The teaching innovation I arrived at simulates the real workings of a newsroom to teach television news production in a classroom environment. This leads to improved delivery of the module and ensures that a high standard of excellence is achieved. Much of what we see is what Joe Thloloe (my erstwhile colleague) refers to as 'fix it journalism' implying that we had to retrain students about how things work in reality. The impetus for the innovation lies in my *disce ab facis* (excellence through learning by application/doing) philosophy. According to Barlow (2001), people remember 20 per cent of what they hear, 30 per cent of what they see, 50 per cent of what they hear and see, and more than 90 per cent of what they hear, see, talk about and do. My innovative approach provides a vantage for reorienting the delivery of such courses to meet the knowledge, competencies and skills needs while inculcating the critical journalistic traits required to nurture a successful TV professional with minimum resources.

The nature of the innovation

This teaching innovation used mobile phones, laptops, a whiteboard, a screen projector and portable microphones. Mobile phones were used for shooting visuals and editing. News scripts were formatted to proportional sizes and loaded on the computer, and the computer screen became an auto-cue or teleprompter.¹ The computer keyboard was used to scroll down the scripts from the autocue as the student presenters were reading just in the same way as the presenter read in a professional newsroom environment from the real autocue. Mobile

phones were also used as portable microphones for sound recording. The whiteboard was converted to the news diary² board, and students were taught how all this works.

Newsroom personnel and activities

Students were divided into small 'news crews'. Each crew had students assuming the roles of assignment editor, news readers producer, reporter, cameraperson, director, subeditor, production assistant, video editor and floor manager. Having been taught how the newsroom works and what the different roles are to ensure that a television news story comes together, students were assigned activities reflecting the actual work of journalists. Students were by then familiar with the drill, and the class became a news production centre. I was able to train them as newsreaders, autocue operators, floor camera operators and production assistants, achieving a clear skillset as follows:

- A typical day in a newsroom
- News routines
- Designing signature tunes and teasers³
- News reading
- News gathering and fact verification process
- Reporting
- Editing
- Use of supers⁴ and subtitles
- Doing stand-uppers
- Operating the teleprompter
- Studio language
- Ad-lib: unscripted talking, usually by a broadcaster

All these skills were measurable, and students applied them to produce tangible products, improving the quality of delivery and ensuring a high standard of excellence.

Success of the innovation

This innovation placed students at the heart of a high-intensity newsroom environment, challenging them to live up to all activities involved in a news bulletin. Students had to come up with story ideas; working in small teams as in real newsrooms; gathering story material, including factual information and visuals; making reporting decisions in real time; writing and editing the scripts; laying voice to the script and editing the visual to produce a complete news package and fully fledged news bulletin.

The innovation produced highly efficient, productive students as attested to by the emails I received. The output is tangible and measurable, and remedies and interventions are direct and effective. Students learn to apply the basics they have learnt in theory, addressing limitations as part of the process. Students develop portfolios of their work, giving them a competitive advantage in industry.

The outcomes are quantifiable and tangible, and there is a clear maximisation of the input required to develop applied competences. Scaffolding the tasks is easier and more strategic, as each task relates to one that the students have tackled before. Students grapple with managing team dynamics as they work to gather news, script,

The teaching innovation I arrived at simulates the real workings of a newsroom to teach television news production in a classroom environment.

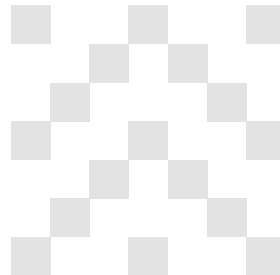


Figure 1. Student innovations in practice.



edit and package news bulletins. The process fosters high levels of reflection, and enhances feedback – a constructive process in which students see for themselves where they go wrong. The entire process is enjoyable for the students as the making of TV journalism is seen through innovation in action. Many students arrived in class looking the part – dressed in journalists' vest jackets. The effectiveness of the innovation is especially evident in what they themselves said about their enjoyment of the module.



Recommendations

This innovation can be used as an effective teaching aid to ensure the successful application of theoretical knowledge. Understanding is enhanced when students arrange the equipment themselves. The model is convenient and can be assembled virtually from anywhere in the country. The material used is available in the classroom, and students mostly have mobile phones.



Notes

- 1 A teleprompter or autocue is a display device used in the newsroom to display the newsreader's script as a scrolling image, so they can read it without looking down.
- 2 The news diary indicates stories to be covered/ reported on for the day, and it enables the assignment editor to decide what each reporter will cover.
- 3 A short audio or video segment produced to advertise an upcoming news bulletin or news items.
- 4 Words that are superimposed over a television image to give details such as a person's name or location.

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About the author:

Thea Tselepis

Thea Tselepis, an Associate Professor in the Department of Business Management, holds the National Research Foundation's South African Research Chair in Entrepreneurship Education. Professor Tselepis is a National Research Foundation-rated C3 researcher with the specialisation field: Entrepreneurship with, for and as creatives. Many of her research publications relate to the scholarship of teaching, particularly promoting entrepreneurial behaviour and design thinking through action learning. Her teaching philosophy is pragmatism and therefore she encourages project-based learning.



INSIDE OUT:

The value of reflecting on personal value add for entrepreneurial leadership¹

Entrepreneurial leadership is an important learning unit for students that take Entrepreneurship 3B in the Department of Business Management. This module is offered to 150 final-year entrepreneurship students on three campuses. The learning unit on entrepreneurial leadership aims to assist students in exploring the South African entrepreneurial landscape and craft or respond to opportunities with potential value-add.

Visiting the 'real world' (organisations in the industry) is usually considered important in teaching and assessing methods on entrepreneurial leadership and opportunity finding. However, during the lockdown of 2020 the challenge to send students into industry was not possible even in the virtual sense, because organisations had to deal with serious disruption and could therefore not always assist students in a constructive way. This learning unit was therefore altered to encourage an inward journey on life purpose and personal value-add as opposed to an outward journey that involves visiting organisations during lockdown.

The operationalisation of this project is discussed in the next section, followed by a conclusion on what worked well and why it will be kept in the future.

¹ Acknowledgement and a special thank you to Dr Chuma Diniso, a Senior Lecturer in the Department of Business Management and the coordinator of the module, as well as Mrs Alta Bosch (Lecturer in the Department of Business Management). These colleagues were both willing to implement the project in the various campus groups and assisted with the assessment.

The project and assessment

The project ran over three weeks and commenced with an online coaching session in Blackboard Collaborate Ultra. One of the three lecturers offered a starting point and the 'how to' in crafting a personal purpose statement that could be applied to communicate personal value-add. Two aspects were important in this regard:

- 1 Discovery of unique personal strengths/skills (unique aspects that come naturally and are so embedded in how a challenge is seen and approached that there's no awareness of them).
- 2 Repackaging such strengths by applying them in a way to serve others and consequently making the 'value-add' apparent.

The inside journey of students

Coaching as teaching method and encouraging an online open resource to identify strengths and convert these to purpose statements

I compiled a coaching session by adapting principles from a youth empowerment programme developed during 2014 in collaboration with a career coach from Synergyn (an industry partner). The coaching was pragmatic and involved a free online strength finder, Via (<https://www.viacharacter.org/survey/account/register>), as a starting point.

Involving significant others (family and/or friends) for formative assessment as part of the learning process

Students were then asked to reflect, write a preliminary purpose statement involving the strengths and how these can be applied to enhance society or an organisation (a template was provided as a guideline).

All the students needed formative feedback on the preliminary statement and were encouraged to involve their support network (family and/or friends) to assess the first pitch on their personal value-add. A rubric with a three-point scale to indicate areas of improvement was provided to family and/or friends to rate the preliminary statement.

Communicating personal value-add to the 'outside'

Students were asked to incorporate feedback from family and/or friends and record a one-minute purpose statement incorporating strengths yet explaining they are applied to add value in society or organisations. The goal was to upload this video clip onto their LinkedIn (social media) pages that also needed to meet several requirements directed in class. Students could record themselves, make use of images, music or even avatars on platforms such as YouTube or TikTok and share it on their LinkedIn pages. Any format was acceptable, as long as it was effective in terms of communicating a coherent message in relation to the rest of the content on the LinkedIn page.

An example of a video that contains a purpose statement that was loaded on LinkedIn: <https://www.youtube.com/watch?v=omYI3Mjitbl&feature=youtube>²

Assessment

The LinkedIn pages of students containing the video clip, a clear introduction summarising the purpose statement/personal value-add, and contributions to social groups that links to the individual's interest were assessed on coherence, and a normative mark was allocated for how it stands out from other profiles. The purpose statement was one aspect of the project, but it was apparent that a lot of time and attention to detail was given to this aspect.

The benefits of the project

The application of open online tools such as Via allowed students to reflect and construct a purpose statement that could be applied and refined in the near future when they leave the university and craft or find opportunities in the workplace.

It was apparent that students engaged in this project when peers and lecturers from other departments in UJ started

commenting on the excellent video clips that were shared on social media platforms such as LinkedIn and Facebook.

Moreover, the engagement of family was beyond what was expected as students shared their preliminary feedback in the final report for formal assessment. Significant others such as uncles, grandmothers, fathers and older siblings seemed to have been critical and honest in their assessments and offered a constructive voice to inform better final video clips.

It would also be rational to say that students who took this module now have a unique selling point on LinkedIn that makes their profile introduction section stand out from the normal 'Student at UJ' crowd. Some industry colleagues were also kind enough to provide feedback on the merit of the project.

This project incorporated cross-field outcomes vital for future entrepreneurial leaders. It offered an opportunity for introspection and reflection on strengths, and also the chance for innovative and/or creative communication (in the 4IR). Students learnt to project self-confidence when presenting ideas and gained the 'buy-in'/support of family and/or friends regarding their future plans.

Conclusion

The feedback on the value of this project from a student, peer and lecturer (also in other departments) perspective was overwhelmingly positive, and this project can be refined. In the future, the ideal would be to ask students to produce the videos with specific organisations in mind and align them to organisational vision and goals.

An 'inside out' journey proved to be valuable during disruptive times, as it allowed students to value their own purpose and make use of this disruption to organise thoughts and gain the skill to communicate a coherent purpose statement in a modern and relevant way for a bright future.

This project incorporated cross-field outcomes vital for future entrepreneurial leaders.



² Link shared with the permission of the student.

About the author:

Tracy Daniels

Tracy Daniels is a Lecturer in Event Management and the work-integrated learning (WIL) coordinator at the UJ School of Tourism and Hospitality (STH). Tracy holds an MTech in Tourism and Hospitality Management from the Cape Peninsula University of Technology. Her research interests are in sports tourism, event management and graduate-industry alignment within the fields of tourism, hospitality and event management.



ALTERNATIVE WORK-INTEGRATED LEARNING PRACTICES FOR TOURISM AND HOSPITALITY STUDENTS DURING THE COVID-19 PANDEMIC

WIL is the umbrella term used to describe the integration of academia and the workplace, or of theory and practice in student learning. Its purpose is to enhance student learning and provide the opportunity for a number of innovative curriculum developments and changes in response to concerns around graduate readiness, employability and civic responsibility. As part of WIL, students are given the opportunity to engage in experiential learning, the process of learning through experience, and gain industry exposure and engagement, producing a more employable and market-ready graduate. In essence, WIL describes an approach to career-focused education that includes classroom- and workplace-based learning for the mutual benefit of the student and the workplace.

For students, the advantages of industry exposure and support include academic benefits such as improved academic performance, enhanced critical thinking and increased motivation to learn; personal benefits such as improved competencies around communication, teamwork abilities and leadership skills; career benefits such as career clarification, increased employment opportunities and the development of positive work values and ethics; and skills development through increased competence and technical knowledge. For organisations hosting students for their WIL, the advantages are creating a pipeline of future employees, engaging in corporate social responsibility initiatives; contributing to the sustainability of the industry; and ensuring compliance with the Broad-Based Black Economic Empowerment (BBBEE) Code of Good Practice in terms of skills development.

The UJ STH requires all students in the final year of their Diploma in Tourism, Hospitality and Food and Beverage Management to complete the WIL module in order to graduate. The WIL module takes place during the last six months of their final (third) year of study. As a result of the COVID-19 pandemic, tourism and hospitality organisations across South Africa and abroad were forced to close, leaving many staff members either unemployed or furloughed. This large-scale business closure also meant that organisations were unable to host students for their WIL module. In order for students to still complete their WIL module, a new remote mentorship WIL programme was created within the UJ STH.

The remote mentorship programme began with a call to tourism, hospitality and food and beverage industry members with an interest in mentoring students. Through various engagement sessions detailing the structure of the WIL programme and the WIL requirements, partnerships were established with Tsogo Sun Hotel Group for the remote mentorship of Hospitality and Food and Beverage Management students, and with South African Tourism for the remote mentorship of Tourism students.



Figure 1. Mentorship partnerships were established with Tsogo Sun and South African Tourism.

STH students were paired with mentors working within the areas of these organisations in which they took an interest, or were considering a career. Mentors and mentees then held weekly meetings over various online platforms such as Microsoft Teams and Skype. During meetings, students were given a number of industry-based tasks and projects to work on, received feedback on their performance, and received career guidance and support. The projects varied, and all ensured that they were able to put their theoretical knowledge into practice. The projects also allowed them the chance to network with industry members, work as part of an industry-based team and play an active role in the relaunching of the tourism and hospitality industries post COVID-19.



Figure 2. Example of an event planned by a Tourism WIL student on behalf of South African Tourism



Figure 3. Example of marketing and promotional tools developed by a Hospitality student for Tsogo Sun, Garden Court Marine Parade

For assessment purposes, the students were required to submit a monthly report that consisted of three components. The first component was a timesheet stating how many hours they had worked for the month and detailing the activities completed during this time. This allowed the lecturer to ensure that all students were meeting the required number of WIL hours. The second component was a self-reflection essay on own performance and experience. The third and final component was an assessment form completed together by the mentee and mentor; it included areas that could be improved upon and areas that needed attention. At the end of the WIL period, students were required to submit a final comprehensive portfolio of evidence containing examples of all work completed during their WIL period. All monthly reports and portfolios were submitted and marked electronically.

There is a consensus that, going forward, many practices within tourism and hospitality will change and that there will be a sharper focus on virtual travel and experiences, and less face-to-face interaction between customers and staff. In light of this, many aspects of this new WIL programme will be retained, with a focus on the use of technology and the development of soft skills in students. Underlying this is the need for these new modes of WIL to still meet the course requirements and produce work-ready and entrepreneurial graduates.

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PRODUCT- GENERATED KNOWLEDGE MAPS FOR ONLINE LEARNING PLATFORMS

WIL is the umbrella term used to describe the integration of academia and the workplace, or of theory and practice in student learning. Its purpose is to enhance student learning and provide the opportunity for a number of innovative curriculum developments and changes in response to concerns around graduate readiness, employability and civic responsibility. As part of WIL, students are given the opportunity to engage in experiential learning, the process of learning through experience, and gain industry exposure and engagement, producing a more employable and market-ready graduate. In essence, WIL describes an approach to career-focused education that includes classroom- and workplace-based learning for the mutual benefit of the student and the workplace.

For students, the advantages of industry exposure and support include academic benefits such as improved academic performance, enhanced critical thinking and increased motivation to learn; personal benefits such as improved competencies around communication, teamwork abilities and leadership skills; career benefits such as career clarification, increased employment opportunities and the development of positive work values and ethics; and skills development through increased competence and technical knowledge. For organisations hosting students for their WIL, the advantages are creating a pipeline of future employees, engaging in corporate social responsibility initiatives; contributing to the sustainability of the industry; and ensuring compliance with the Broad-Based Black Economic Empowerment (BBBEE) Code of Good Practice in terms of skills development.

Law subjects are characteristically known for their denseness of information and voluminous nature. One approach to assist students in the learning process is to provide structure and context to the study material. Concept chains play an important role in the teaching and learning of subjects where one concept must be grasped before moving onto the next (Meyers 2016). This type of knowledge acquisition in the legal discipline may be described as a hierarchical knowledge structure (adapted from Meyers 2016), which implies that students are exposed to many concepts that are linked to each other (these being abstract mental constructs, see Shunk 2012), and thereby one concept builds upon another. Put differently, the legal discipline consists of ‘a hierarchical knowledge structure [that] has a “conceptual spine”’ (Meyers 2017, 193), which can be described as an integration of knowledge, information and theory.

The nature of hierarchical knowledge structures are synonymous with high-density information and volume course content (Reader 1994). This requires students to master large volumes of material (Reader 1994), and may even require them to link newly acquired to prior knowledge (adapted from Wang & Dwyer 2003–2004). It is against this backdrop that the question is posed: to what extent do students use, process and deal with information in such hierarchical knowledge structures?

Codrington and Grant-Marshall, in their book *Mind the Gap*, emphasise that different generations have starkly different outlooks and approaches to life. This can equally apply to the process of teaching and learning. A large portion of the contemporary student demographic is technologically proficient; this specifically applies to Generation Y (also known as Millennials) as well as Generation Z (also known as the I-Generation or Centennials). Due to their technological proficiency, the manner in which these generational groups process information is often very different to their predecessors’ (Wessels & Steenkamp 2009). Although such groupings should not be used as a stereotypical fact in the process of teaching and learning, it is nevertheless a useful categorisation that highlights that students (depending on their proficiency in technology and the socio-economic environment in which they find themselves) may have different learning styles and approaches to learning and processing.

Background to knowledge mapping

Some believe higher levels of visual literacy may be synonymous with a student generation with higher proficiency in technology (Wessels & Steenkamp 2009). If this is the case, then imagery would play an important role in the teaching and learning process (Wessels & Steenkamp 2009), and could even be the preferred approach rather than working through purely textual information, and dense or lengthy reading material (Wessels & Steenkamp 2009). ‘Knowledge mapping’ or ‘structuring knowledge’ (Reader 1994) may be a useful technique in the teaching and learning process to structure and contextualise course material. Knowledge mapping has traditionally been viewed as a graphical or visual representation of knowledge or information (Reader 1994). It can take different forms such as mind maps (Eppler 2006; Novak & Cañas 2007), concept maps (Eppler 2006;

Novak & Cañas 2007), conceptual diagrams (Eppler 2006) and even visual metaphors (Eppler 2006). Knowledge mapping, in this context, allows students to consider bite-sized chunks of information and is intended to assist in processing such information.

Knowledge maps can essentially be categorised into two broad groups. The first is a process-driven knowledge map, in which knowledge maps are created by students and serves as a mechanism to facilitate the process of learning (adapted from Wang & Dwyer 2003–2004). This can take the form of a complete or partial knowledge map. In a complete knowledge map students are required to complete a knowledge map on their own, while with a partial knowledge map students are presented with an incomplete knowledge map and the student is required to complete the missing portions of the map (adapted from Wang & Dwyer 2003–2004). The second category is that of product-generated knowledge maps, created by the teacher or facilitator and provided to the student as a complete construct (Wang & Dwyer 2003–2004). The choice of knowledge map is strongly dependent on the ultimate learning objectives of the module (Wang & Dwyer 2003–2004).

Knowledge mapping have certain benefits:

- 1 It focuses and directs students to draw connections between various concepts, thereby building concept chains throughout the course (Reader 1994), while also indicating the sequence of concepts to master (Novak & Cañas 2007).
- 2 It externalises information in its presentation, which allows the student to visualise information, and thereby allows students to draw analogical connections and synergies between concepts (adapted from Reader 1994).
- 3 It is also considered a guiding tool to allow students to progress from the general to the specific and from one concept to another.

Notwithstanding these benefits, knowledge mapping may have certain drawbacks. Some studies suggest that the process of constructing such maps is ‘difficult and time consuming’ for students (Rosen & Tager 2024, 254), which is particularly relevant in process-driven knowledge maps. Students may also find it difficult to connect various concepts within such a visual structure (Pinto, Doucet & Fernández-Ramos 2010). Strict adherence to concept maps (a form of knowledge map) can lead to generalisation of the learning experience, which can reduce the individual learning experience as a whole (Wilson, Mandich & Magalhães 2016). Other factors

‘Educating students is the primary goal of universities. However, reaching that goal depends on understanding those students in order to create learning environments that optimise their strengths and minimise their weaknesses’ (Wessels & Steenkamp 2009, 1056)

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that may also impact the successful use of knowledge maps and making conceptual connections could include the student's language proficiency and prior knowledge.

Knowledge mapping in online learning platforms

The transition to online teaching and learning platforms during COVID-19 has necessitated the reevaluation of the traditional manners of approaching the discipline. I was particularly interested in exploring not only using textual and visual manners of representing information to facilitate knowledge acquisition, but to also look at different formats of doing so.

Some say knowledge mapping (specifically concept maps) in an online environment assists in introducing new knowledge to a student's prior knowledge, and can be used to allow students to achieve a specific learning objective (Wang & Dwyer 2003–2004). However, in an online environment (or a web-based learning environment as referred to by Wang & Dwyer 2003–2004), teaching can use traditional graphics and visuals in different ways and formats including pictures, diagrams, graphs, tables, flowcharts, PDFs and so forth (see, for example, Wentzel & De Hart 2020). Examples of such graphical and visual representations have been used in Figure 6, which is a visual representation of this article and illustrates the use of one type of knowledge map. Yet, the principles of knowledge mapping could possibly be extended to other formats in light of contemporary technological advances and online learning platforms.

It is against this background that I set out to explore more diverse formats in which the principles of knowledge mapping could be used in online learning platforms. For example, nothing prevents one from using auditory knowledge map such as audio casts or podcasts (as discussed below), where auditory rather than visual or graphic techniques are used to structure knowledge. Both audio and visual techniques can also be used interactively in 'videocasts' (Wentzel & De Hart 2020).

During 2020, I employed product-generated visual and audio knowledge maps to achieve certain objectives, which included:

- 1 To ascertain, from a module design perspective, the most appropriate form of knowledge map for use in online learning platforms.
- 2 To provide sufficient structure for students to contextualise information in the different study units of the first semester's work. This was of particular importance as there are various concepts that build upon each other, and correct placement of the work will ultimately assist students in the understanding and application of information.
- 3 To explain three fundamental terms and concepts found in the law of contracts, which forms the basis of the knowledge of the remainder of the module and upon which other concepts and knowledge is built upon.

Selecting an appropriate knowledge map

In using knowledge maps in online teaching and learning, the following considerations were taken into account:

Study Units: Semester 1
Study Unit 1
Study Unit 2
Study Unit 3
Study Unit 4
Study Unit 5
Study Unit 6
Study Unit 7
Study Unit 8
Study Unit 9
Study Unit 10
Study Unit 11

- 1 What are the learning objectives in using the knowledge map? This is linked to whether a process-driven or product-generated knowledge map is utilised. Each have different purposes, and as focus was placed on contextualising and structuring information, product-generated knowledge maps were developed.
- 2 What is the most appropriate format to present a product-generated knowledge map? The traditionally visual and graphic representation of information in knowledge mapping may not always be appropriate online, where students cannot effectively view graphics due to outdated devices (for example old mobile devices). In such instances, the audio map is a viable alternative.
- 3 How can the drawbacks of knowledge maps be overcome in their construction and use in the module? One of the drawbacks (as highlighted above) is that students may find it difficult to make connections between information and concepts represented in traditional visually based knowledge maps. Audio maps could supplement visual knowledge maps in making such connections between concepts.

Figure 1. Study Units: Semester 1

Achieving structure

It can be said that in online teaching, information is closely linked to product-generated knowledge mapping. For example, Wang and Dwyer (2003–2004) note that concept maps could assist students in navigating a learning platform. If this is the case, then the manner in which information is placed on online learning platforms, such as Blackboard, may either assist or hinder students in contextualising the information presented. Therefore, based on Wang and Dwyer (2003–2004), one could say that knowledge mapping starts in the manner in which information is presented in online learning, and is a visual representation of the information presented, as seen in the Blackboard extract in Figure 1.

However, I felt that within the Blackboard structure, an additional introductory explanation could contextualise the information and how it relates to a particular study unit. This was done by introducing an auditory alternative, in which students were given an audio clip in the form of a podcast of 7:38 minutes (Figure 2). The podcast provided an auditory outline of the information of the first semester of the module. In doing so, the traditional visual approach to knowledge mapping in the online learning platform was extended from exclusively visual to include an auditory sensory learning process.



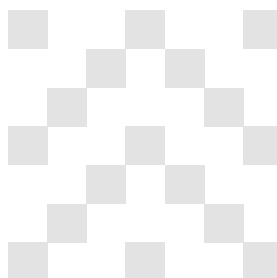
Figure 2. Introduction to Semester 1 (Law of Contract)

Fundamental concepts

Knowledge maps can function as an instructional tool (Pinto et al. 2010). Used appropriately, product-generated knowledge maps could be adapted to provide a useful organisation of information. Yet, the knowledge map is not necessarily limited to visual and graphical representations of information. The use of online learning platforms during COVID-19 and the initial hard lockdown in 2020 necessitated using different techniques to translate typically highly dense subject matter to accommodate different learning approaches. These techniques went beyond traditional visual knowledge mapping.

Knowledge mapping in this context was then adapted to include 'audio maps', which function in the same way as mind and concept maps but structure information aurally rather than visually. Podcasts (audio files transmitted over the internet) were adapted (Wentzel & De Hart 2020), not only to provide structure to the course material but also to transfer knowledge and concepts.

The transition to online teaching and learning platforms during COVID-19 has necessitated the reevaluation of the traditional manners of approaching the discipline.



In the module I teach, one of the key distinctions is between the concepts of valid, void and voidable in terms of contracts. These concepts are fundamental to the entire module and used throughout the whole year. Through product-generated knowledge mapping, these concepts were initially presented visually in three separate diagrams. The diagram included in Figure 3 (content adapted from Nagel & Kuschke 2019, and similar examples can be found in Bhana, Nortje & Bonthuys 2015) is a simple visual representation of the concept of a void contract. Figure 5 shows a more in-depth and combined visual product-generated knowledge map of valid, void and voidable (content adapted from Nagel & Kuschke 2019, and similar examples can be found in Bhana et al. 2015).

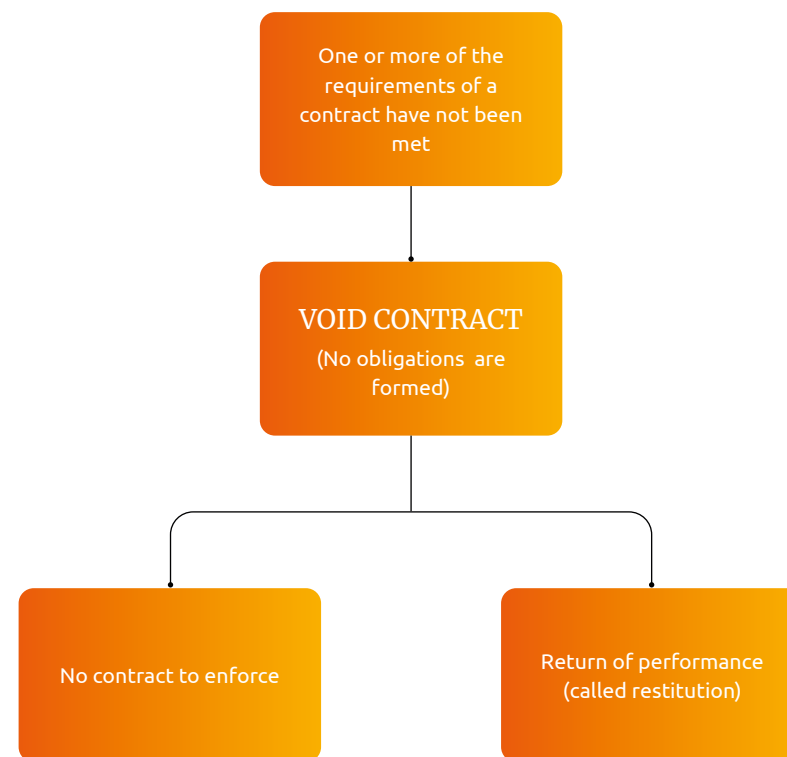


Figure 3. Void contract

However, during the initial hard lockdown, some students did not have devices that could sufficiently access and display graphics. Taking into account this challenge as well as the possible general shortcomings of knowledge maps (that not all students make the required conceptual connections), I introduced audio maps in the form of podcasts that could be used independently from the visual maps but also in conjunction with the visual alternative in order to explain and elaborate on conceptual connections. Not all students learn through listening, so full transcripts (textual representations of the information) of each podcast were also provided, which allowed students to read the content. Figure 4 shows an extract from the podcast transcript, the explanation provided to the visual map of Figure 3 (content adapted from Nagel et al. 2019).

A void contract means that one of the six requirements for a valid contract is missing. If one of the requirements is missing then the contract is void and is, as if, it never came into being. This means that the parties would not have any contractual remedies available to them because a void contract never existed. This is sometime also referred to as the contract being 'void ad initio' or a contract being 'null and void'. There may, however, be instances where the parties had already performed, and if a contract is found to be void – then such performances must be restored by placing both contracting parties in the position they were before having entered into the contract. This is called restitution.

Figure 4. Extract from podcast transcript illustrating the explanation provided to the visual map

This combined approach of visual and auditory representation provided students with structural context to the course content and concept chains that form part of the hierarchical knowledge structures of a legal subject, and thereby accommodated both visual and audio learning preferences.

The use of podcasts in this context had some benefits. It functioned as another form of communication between the teacher and student (Ng'ambi 2008). It also allowed students to master key concepts in their own time (Ng'ambi 2008), as audio files could be replayed and repeated as many times as the student required.

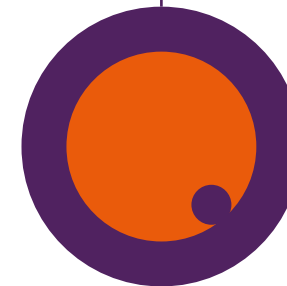
The use of podcasts was originally intended to address the wider learning needs of a diverse group of students and accommodate different types of learning styles; however, COVID-19 and the national lockdown in 2020 highlighted the need to expand the use of podcasts into the structuring of knowledge generally, and consequently expand the traditional visual knowledge mapping process into an audio version. This was done by introducing short, powerful audio clips ranging between three and eight minutes in length, that contextualise key course concepts to form the necessary scaffolds students require to progress in the course. Indirect benefits of podcasts include the added communication

channel with the student. Some have also suggested that podcasts may reduce student isolation in the online learning environment (Wentzel & De Hart 2020).

Concluding remarks

The use of appropriate knowledge maps is closely linked to the intended learning objective. Different types and formats of these knowledge maps may be necessary to achieve the intended objective (Wang & Dwyer 2003–2004). Although, some say the process-driven knowledge-mapping approach is most effective for individual learning (see, for example, Wilson, Mandich & Magalhães 2016), product-generated knowledge maps still have a place in the teaching and learning process. COVID-19 and the national lockdown in 2020 illustrated the need for agile and robust teaching and learning strategies adaptable to student needs and learning styles and environmental circumstances. Structuring knowledge, as visual or auditory knowledge maps (which could even be extended to video maps), is useful to contextualise information using 21st-century technological tools.

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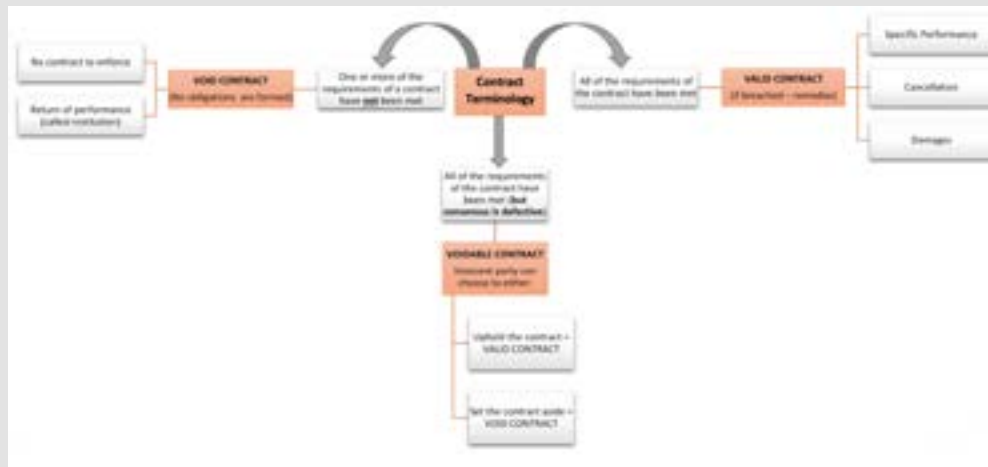


Figure 5. Fundamental contract terminology



Figure 6: Product-generated knowledge mapping in online learning platforms

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A REFLECTIVE ACADEMIC SUPPORT PRACTITIONER'S PERCEPTION:

Lessons from offering students academic support during COVID-19

At the time of writing this paper, South Africa had already moved to lockdown level 1. At UJ, the academic staff component and students had already returned to campuses, with the observation of all the protocols and procedures planned under COVID-19. Teaching, learning and academic support was still online.

In South Africa, teaching and learning in HE is predominantly face-to-face, even though there is an exponential growth in technology-based platforms such as learning management systems and learning portals.

The purpose of this paper is to reflect and share some of the lessons learnt during COVID-19 pandemic with regards to providing academic support to students.

Background

COVID-19, also known as coronavirus, is an ongoing global pandemic caused by severe acute respiratory syndrome coronavirus 2. The World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern on 30 January 2020, and a pandemic on the 11 March 2020. In South Africa, the national lockdown started on 26 March 2020 in response to the WHO.

It is clear that the emergence of COVID-19 has shifted the goal posts in terms of how our students can best be supported in their academic studies. COVID-19 has also given us an opportunity to reflect on our pedagogy. Hence, it became imperative to come up with innovative and flexible ways to support students remotely.

Authors who advocate for online learning have noted serious digital divides between and within countries, and South Africa is not immune to this digital divide. The research undertaken by the United Nations Educational, Scientific and Cultural Organization (UNESCO) Teacher Task Force has pointed to some of these notes in respect to sub-Saharan Africa:

89% of learners do not have access to household computers and 82% lack internet access. Whereas mobile phones can enable learners' access to information, connect with their teachers and with one another, almost 56 million learners live in locations not served by mobile networks', (UNESCO Teacher Task Force 2020, para. 3–4)

The above assertion by UNESCO also applies to South African students in higher learning institutions. The digital divide exacerbates already existing learning gaps in South Africa where, 'online learning tests and exams will be enjoyed by the privileged few' (Bashman 2020).

It became clear that as academic support practitioners, we have to move away from synchronous learning (face-to-face), where teaching and learning takes place at the same time. The new focus, since our students are now learning remotely, should be asynchronous learning (blended learning), where teaching and learning each takes place at its own pace.

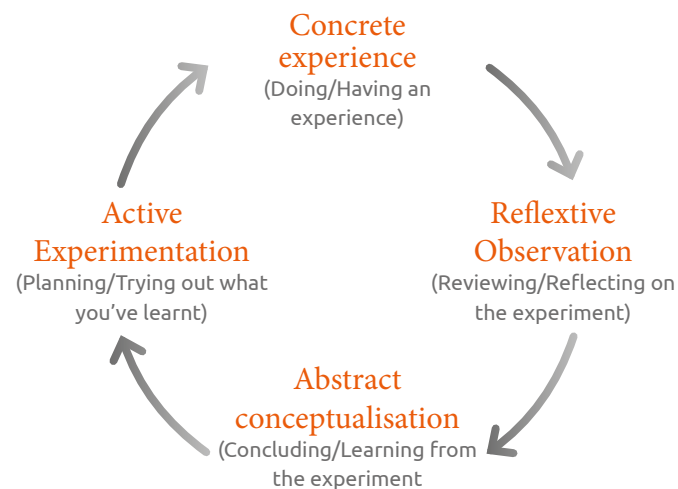


Figure 1. The experiential learning experience

Theory

Kolb (1984) and Gibb's (1988) experiential learning theory underpins this paper.

Kolb (1984, 38) mentions that 'Learning is the process whereby knowledge is created through the transformation of experience'. This theory suggest that learning is cyclical and encompasses four stages: concrete experience, reflective observation, abstract conceptualisation and active experimentation. The experiential learning theory also emphasises that, as academic support practitioners, we need to constantly reflect on our experiences. Schön (1983) argues that continuously reflecting on our practice will enhance continuous learning. According to Bolton (2010), reflecting on the lessons learnt could lead to developmental insights.

Prominent lessons learnt by the academic support practitioner

- 1 **Lesson 1:** Adapting to a changing environment. As a reflective academic practitioner, embrace challenges as new opportunities. Blackboard (the university learning platform) and Microsoft Teams were used as online support domains. The lockdown came suddenly and as academic support practitioners, we had to adapt immediately but we were not prepared. We were forced to learn as we went.
- 2 **Lesson 2:** Flexibility. Be flexible and sensitive to students' learning circumstances. Since no one was prepared for this massive change, it brought anxiety to our students. In offering academic support, you end up addressing some of the eminent issues such as how to migrate to a new learning environment at home, with siblings or family members around the living/learning space.
- 3 **Lesson 3:** Escalation of the blended approach. Embrace blended and active learning (the asynchronous approach). As an academic practitioner, I kept on upskilling and empowering myself by attending online developmental institutional workshops.
- 4 **Lesson 4:** Collaboration. Work with other colleagues within the unit to ensure the quality of online material.
- 5 **Lesson 5:** Provide students with a timely response. Since students have to email their queries, it became imperative that, as an academic support practitioner, you provide timely feedback. Timely feedback assists students, and calms them down, especially because they are not familiar with the new way of learning.

Conclusion

COVID-19 has escalated the 4IR and encouraged blended learning. Everyone in academia, including academic support practitioners, have had to move away from their comfort zone and their old way of providing academic support. We have had to embrace new and innovative ways of providing support.

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