The University wishes to acknowledge the Kaurna people, the original custodians of the Adelaide Plains and the land on which the University of Adelaide’s campuses at North Terrace, Waite, Thebarton and Roseworthy are built.

**HERGA EXECUTIVE**
Edward Palmer  
The University of Adelaide  
Sarah List  
The University of South Australia  
Karen Burke da Silva  
Flinders University

**CONFERENCE CHAIR**
Edward Palmer and Thomas Wanner  
The University of Adelaide

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Venue: Napier Building  |  Date: 22 September

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Prof Deborah West  PVCA Flinders University |
| 09.15 | 60 MINS  | KEYNOTE ADDRESS 1  | NAPIER 102  
A Road to Success – Preparing students for an unknown career future  Professor Karen Burke da Silva |
<p>| 10.30 | 30 MINS  | Meet you in the middle: The role of technology and virtual reality in cognitive, psychomotor and affective learning  Donnelly and McIlesh |
| 10.30 | 30 MINS  | High-achieving students in a time of widening participation: A case of neglect?  Clark, Godwin and Knox |
| 10.30 | 30 MINS  | Using learning analytics – exploring strategies for students at risk of failing  Abigail, Breaden and Price |
| 11.00 | 30 MINS  | MORNING TEA |
| 11.30 | 30 MINS  | Online video based OSCE assessments in undergraduate psychiatry  Clark, Laven, Mills; Schubert, Koopowitz and Patten |
| 11.30 | 30 MINS  | Using social justice internships to equip students with flexible, work-ready skills  Koch, Hewitt and Grenfell |
| 12.00 | 30 MINS  | Systematic Review on the Utility and Impact of ICT on Tertiary Students’ Higher Order Thinking Skills  Hnin Nwe Nwe Tun, Cherry Htun, Ferdinand Wadu He, Che Yee Lye and Ala’i Fahed Aburumman |
| 12.00 | 30 MINS  | Simulated job interview as an oral tool for assessment: personalised assessment of personalised learning  Thompson and Houston |
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| 12.30 | 30 MINS  | Flexibility: adapting to the needs of international learners.  Davidson |</p>
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<td>Parkin and Wadham</td>
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A Road to Success – Preparing students for an unknown career future

Professor Karen Burke da Silva
The University of Adelaide

Associate Professor Karen Burke da Silva is recognised as one of Australia’s most influential science educators and is the 2016 Australian University Teacher of the Year. She has transformed the delivery of science curricula, creating an outstanding teaching environment for her students. She is an inspirational leader who engages and motivates others to implement effective new ways to teach science through reconceptualising teaching delivery. Her delivery focuses on personalising the experience for individual students and overcoming the challenges of engaging very large first year cohorts of students. She has been instrumental in pioneering an integrated teaching environment that fosters and encourages interaction between teaching and research. This involves innovative, authentic, student-centred approaches that develop problem solving and critical thinking skills. Karen is actively involved in social media campaigns to raise awareness around conservation and environmental issues building greater understanding of science in the public arena.

ABSTRACT

A common request coming from students is for more experiential learning, practical work, and industry-related skills. Designing programs to improve the student experience and enhance long term student outcomes whilst improving employability outcomes however, continues to be a challenge. Exposing students to real-life problems clearly supports the acquisition and enhancement of critical thinking and problem-solving skills essential for the work place. Designing authentic activities that are not highly-guided, verification-type experiences, with well-defined end-point can cause fear amongst many educators. Providing professional development for staff to revamp teaching approaches that include time for problem solving is essential and can have a strong positive impact on student learning. Authentic learning experiences need to start at the first year level and continue throughout degree programs, ideally with opportunities to conduct research, to work with industry, and to gain invaluable international experience. The ultimate road to success for preparing students for an unknown career future is to progress beyond the passive application of pre-learned and practiced methods to a more adaptive and creative approach in which students take ownership of their own learning.
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11  High-achieving students in a time of widening participation: A case of neglect?
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22  Blended learning in health: are nursing students ready to be flipped?
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23  Providing student teachers with a practical skills learning space to better equip them for the classroom environment
Harvey

24  The use of Learning Analytics to gain feedback to feed-forward in MOOC designs
Santandreu-Calonge, Riggs, Shah, Cavanagh, Ricci and McDevitt

25  Student performance and perception in a flipped classroom
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31  What matters? Students and staff collaborate in a self-study to explore the utility of the eportfolio to demonstrate scholarly activity and support doctoral becoming
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35  You scratch my back: Teacher-Lecturer collaborative partnerships fostering in-service Teacher research in an uncertain world.
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36  Enhancing students’ learning through successful management of large cohort high-fidelity simulation team assessments
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Meet you in the middle: The role of technology and virtual reality in cognitive, psychomotor and affective learning.

Frank Donnelly & Paul McLeish  The University of Adelaide

One of the most challenging clinical placement experiences for students in health care is attending the operating room theatre. As a closed, sterile environment the theatre is generally not open to orientation or observation until the actual placement begins. Once in use, the theatre follows a strict set of rules and requirements which can leave students disoriented and focussed on compliance and procedural issues (such as where to stand, what not to touch) and less on the patient experience, the procedure, team roles and the wider learning outcomes of perioperative care. While recent approaches to decrease the stress of students going to the theatre environment have used games (Del Blanco et al 2017), this presentation describes a project to create an immersive and engaging 6-minute virtual reality (VR) experience of going to theatre.

In the not too distant past, a foray into virtual reality was to invite a nauseous, gut twisting experience that had novel value but little pedagogical merit. New and emerging technology and a reimagining of VR, notably by the gaming industry, has however renewed the prospect for this technology to provide a much deeper level of engagement and interest.

While some of the challenges of frame rate, resolution and pixelated graphics have been met by advances in technology the more significant and arguably exciting challenge for academics and learners will come from how VR technology and pedagogy ‘meet in the middle’. For example while acknowledging many different theories of education, Bloom’s Revised Taxonomy (Anderson & Krathwohl 2001) provides a useful framework to discuss VR. Alongside consideration of the taxonomy the domains of cognitive and psychomotor development are often clearer outcomes of learning while the affective domain is not always so easy to stimulate or indeed measure. Bower et al (2016) hint at this problem in their description of ‘blended reality’ in support of approaches to blended learning. The ability to blend the immersive experience of VR into a dynamic episode of learning where an emotional response is invoked is an exciting and important step forward in how new technology will shape learning and the construction of more stimulating environments. Empathy for patients attending theatre for example is often an assumed character of health professionals however empathy is an abstract concept, difficult to identify, classify and measure. The immersive aspect of the VR experience is key to the affective domain. Clinical educators can set up mock theatre environments and provide students an opportunity to practice the management (cognitive) and movement (psychomotor) of patients into and around theatre. In practice patients entering the theatre are almost always in a dependent position, lying on their back, lightly clothed, often cold, unsure and at times scared and afraid. Facilitating an empathic response (affective) can be a powerful learning experience for students especially those that may never have had an operation. What VR offers is a safe, highly engaging and immersive experience where the challenge will be to ensure pedagogy meets technology in a way that creates a unique episode of learning.

Keywords
Virtual reality; Education; Affective; Pedagogy

REFERENCES
Á Del Blanco et al. 2017 Using a Videogame to Facilitate Nursing and Medical Students’ First Visit to the Operating Theatre. A Randomized Controlled Trial, Nurse Educ Today 55, 45-53
Bower, M. Lee, M Dalgarno, B. 2016 Collaborative learning across physical and virtual worlds: Factors supporting and constraining learners in a blended reality environment, British Journal of Educational Technology
High-achieving students in a time of widening participation: a case of neglect?

Jennifer Clark University of Adelaide, Julie Godwin & Vicki Knox University of New England

As a sector we do very little to recognise or respond to the needs of high-achieving students (Millward, Wardman, & Rubie-Davies, 2016). We do even less for those we would classify as non-traditional high-achieving students (Gómez-Arizaga & Conejeros-Solar, 2013). While this latter group remains associated with a deficit descriptive model, our ability to see possibilities for encouraging their high-achievement is even further limited (Kahu and Nelson, 2017; McKay and Devlin, 2015, 2016). In order to maximise the potential of all students entering university, it is necessary that we recognise and support high-achieving students with programs that acknowledge their diverse educational pathways, their challenges around self-efficacy and their individual learning needs. This paper advocates for a new approach to high-achieving students, one that privileges their identification, understands the importance of recognition and resilience support, and one that provides opportunities for cascading their potential wherever they are in the student journey. The key to maximising engagement and success of the high-achieving cohort is: identification, recognition, celebration and the provision of suitable targeted learning opportunities. Although widening participation in higher education has resulted in considerable effort to support non-traditional students to succeed, it has not resulted in equal support for high-achieving students, including those from non-traditional backgrounds, to excel. Our research suggests that this omission can and should be addressed on the grounds of educational equity. Not to do so, amounts to neglect.

This paper reports on a successful identification, recognition, celebration and provision strategy and draws from surveys undertaken by participating students. It concludes that there are easy and inexpensive steps to take that can maximise the potential of high-achieving students. With this approach comes a social and educational benefit of untapped promise.

Keywords
High-achieving students; targeted individualised programs; non-traditional students; recognition; celebration

REFERENCES
Using learning analytics – exploring strategies for students at risk of failing

Wendy Abigail, Katrina Breaden & Richard Price | Flinders University

BACKGROUND
Learning analytics (LA) research is an emerging area of interest in academia and involves gathering, analysing and reporting data related to learners and their environments, with the purpose of optimising the learning experience. It is predicted that LA will be extensively implemented in higher education in the forthcoming years. LA research has the potential to explore ‘big data’ collected routinely in learning management systems for the purpose of understanding and optimising learning and enhancing the environment in which it occurs. This information can identify study behaviours which will lead to a greater understanding of how students are using content and participating in a course, identify knowledge gaps leading to informed decisions and strategic actions that could impact student learning and curriculum development. The project involves applying LA to engagement and performance data that is currently being collected in the Flinders University Learning Management System to identify a) at-risk students and b) introduce appropriately tailored early intervention strategies with the aim of reducing fail grades and attrition rates.

METHOD
A mathematical clustering algorithm was used to classify students in the early stages of a topic into one of four clusters of learning behaviours: high engaging/high performing, high engaging/low performing, low engaging/high performing and low engaging/low performing. The clustering algorithm had two inputs, each student’s level of early topic engagement and their performance on the first topic assessment item (quiz). This project specifically targeted the low engaging/low performance cluster. The strategies implemented included: innovative approaches (personalised mobile telephone text messages), individual student counselling with a tutor, referral pathways to topic specific resources and University services (such as international language options, Student Learning Centre, librarian, Student Disability and Counselling Services). In addition, external strategies with online links were added to the ‘assistance portal’ where access to the links contributed to the analytical data collected. Evaluation of the implemented strategy occurred at two time points; a second quiz assessment and the student’s overall topic grade. For equity purposes, all students were given access to the same resources, however only the students identified as being ‘at risk’ had the individualised appointments with the tutor.

RESULTS
Preliminary results will be presented at the conference.

DISCUSSION
Historically, nursing has large student enrolments and high attrition rates. The potential impact of this project is that LA has the ability to predict student’s academic performance, monitor progress and identify at risk students early at the topic level. Hence, the benefits to students includes a more personalised learning experience due to early identification by teaching staff of issues, so that appropriate strategies can be implemented in a timely manner. The benefits to staff for a student-centred approach such as this include; early identification of learning deficits; being able to suggest relevant resources to enhance student learning and; monitoring and noting improvement in individual student engagement, all of which have the potential for increasing work satisfaction and promoting excellence in teaching.

The importance of this project is that early detection of at-risk students at a topic level may provide understanding of learning behaviours and which intervention strategies are most useful leading to increased student success, retention and less attrition.

The project involves applying learning analytics (LA) to engagement and performance data that is currently collected in the Learning Management System (LMS) FLO to identify a) at-risk students and b) appropriate early intervention strategies designed to suit the individual learning behaviours of the identified at-risk students. The proposed approach will be trialled in NURS2004 Dynamics of Practice 1 which is delivered in non-semester 1 (approx. 540 students in 2017), and will utilise a mathematical clustering algorithm (k-means clustering) to automatically classify students in the early stages of the topic into four classes (clusters) of learning behaviours: high engaging/high performing, high engaging/low performing, low engaging/high performing and low engaging/low performing. The clustering algorithm will have two inputs, each student’s level of early topic FLO engagement and their performance on the first topic assessment item (quiz). This project aims to target each of the high engaging/low performance and the low engaging/low performance cluster students specifically with innovative strategies targeted to their specific learning needs at the topic level with the aim of reducing fail grades and attrition. Once the four cluster model has been developed, it will be tested in NURS2004 Dynamics of Practice 1 for reliability. The model will then be implemented in topic NURS2006 Clinical Governance and Practice Improvement (approx. 810 students in 2017) along with the innovative intervention strategies (see Figure 1, p.7). NURS2006 has three availabilities offered at Bedford Park in semester 2, the first of which begins Week 1 of the semester. This time lag will allow for the model to be tested, evaluated and refined over the first two availabilities.
Various strategies will be explored and evaluated to assess the most effective strategies that can be implemented by the topic coordinator (TC) and the students’ tutors which are manageable and achievable in large topics. The strategies will be integrated into FLO via a specific ‘assistance portal’ accessible at the topic level for easy access for all involved, and so that data can be collected for analysis to determine the effectiveness of the various strategies. The strategies may include innovative approaches (personalised mobile telephone text messages), individual student counselling with their tutor (as part of tutors associated duties), referral pathways to School of Nursing and Midwifery (SONM) and University services (such as international language options, Student Learning Centre, SONM librarian, Student Disability and Counselling Services). Also, external strategies which have online links may be added to the ‘assistance portal’ where recording of access to the links will contribute to the analytical data collected. Evaluation of the implemented strategy will occur based on student engagement in NURS2006 for the online learning requirements for the first online quiz assessment, a second quiz assessment as well as their overall topic grade outcome.

This project has a multidisciplinary team including academics, a data scientist and an information technology specialist, who aim to develop, evaluate and implement an early intervention program for at risk second year undergraduate nursing students. The outcomes from the piloted model and strategies (Interventions Early Program - IsEP) will lead to recommendations to all TCs and tutors on ways to improve individual student’s topic specific engagement, which is aimed to improved student satisfaction, performance and retention rates. The algorithm has been tested on data from the 2015 NURS2004 offering with promising results, with the four clusters that would require different intervention strategies being clearly identifiable. The four clusters identified in the early stages of the topic were also strong predictors of final topic grade. The proposed methodology is believed to be novel within the field of learning analytics and consequently this project which states ‘In Education, our paramount focus on student success will be a distinguishing feature of the Flinders Experience’. Historically, nursing has large student enrolments and high attrition rates (in 2015 SONM nursing recorded 18% first year attrition and 8% second year attrition). The potential impact of this IsEP project is that LA has the ability to predict student’s academic performance, monitor progress and identify at risk students early at the topic level. Hence, the benefits to students includes a more personalised learning experience due to early identification by teaching staff of issues, so that appropriate strategies can be implemented to assist the students learning and promote academic success throughout their degree.

The benefits to staff for a student-centred approach such as this include; early identification of learning deficits; being able to suggest relevant resources to enhance student learning and; monitoring and noting improvement in individual student engagement, all of which have the potential for increasing work satisfaction and promoting excellence in teaching. In turn, this may benefit the university financially with reduced attrition rates, with the potential of saving up to $472,000 p.a. (based on the 2015 attrition rate of second year nursing students). This project also has potential to impact on IsEP development for FLO topic sites to assist topic coordinators/developers to refine online curriculum delivery and identify content that requires further improvements to promote student engagement. The IsEP could be utilised in other disciplines across the university. Overall, this type of developmental work aligns with the university’s 2025 Agenda which aims to not only be innovative but also to be student centred, showing integrity, courage and excellence.

Keywords
Learning analytics; students at risk; nursing

REFERENCES

Online video based OSCE assessments in undergraduate psychiatry.

Scott Clark, Gillian Laven, Natalie Mills, K. Oliver Schubert, Leslie Koopowitz & Simon Patten The University of Adelaide

BACKGROUND

Observed Structured Clinical Exams (OSCEs) assess clinical competency and communication skills in an objective clinical environment. OSCEs consist of a ‘series of timed ‘stations’, each focused on a different task of interaction and may include a standardised patient (SP) actor. Assessments are made by a experienced clinicians or SPs, using a checklist or global rating. OSCEs are now widely used in medical education. In comparison to traditional long case examinations, OSCEs are structured to provide improved reliability via standardised content and assessment processes. Delivery is resource intensive, requiring large numbers of examiners in situ and examiner fatigue may effect reliability. Video storage and streaming technology has enabled online assessment tools for OSCE examinations (VOSCEs). Evidence is mixed regarding the reliability of VOSCEs. However there are numerous potential advantages including: More efficient use of resources via synchronous (face to face) or asynchronous off-site marking (delayed examination using video); Reduction of examiner fatigue and improved reliability through automatic timing of stations and electronic marking; reduced impact on student performance by examiner presence and the ability to benchmark assessments across disciplines and schools. In 2016 the University of Adelaide School of Medicine invested in a VOSCE system, Simcapture (B-line Medical, Washington), implemented by the Adelaide Health Simulation team. The Discipline of Psychiatry was an early adopter of this system and successfully transitioned to VOSCE in May 2016 using existing OSCE scenarios familiar to the examination team. Examiners discussed and clarified marking criteria prior to each exam to standardise assessments. We describe the implementation of this model, contrasting the benefits, challenges and student performance.

RESULTS

During year 4 Medicine, the Discipline of Psychiatry runs 6 end of rotation OSCEs per year, utilising a hybrid 4 station assessment battery composed of 2 OSCEs, a short case and a knowledge viva. All stations allow 2 minutes rest or reading time and 8 minutes interaction with a one minute warning for completion. Stations are assessed using standardised marking grids by experienced psychiatrists or psychiatry registrars. The implementation of VOSCEs posed a number of challenges including: Technology familiarisation; Resistance to the use of video; Modifying exam workflow and physical set up for recording and coordinating synchronous and asynchronous assessment. Overall the implementation has been successful with limited resistance to change. Technical issues have been significant at times and have highlighted the need for clear shared contingency plans for paper back up. Anecdotal feedback from examiners and students has been largely positive. For synchronously marked stations, electronic marking facilitated same-day generic performance feedback via the Simcapture analytics. These features were highly valued by both examiners and students. Video has been useful for review of failing student performance across stations.

DISCUSSION

Our successful VOSCE implementation has fulfilled its early potential to streamline the assessment of skills in psychiatry and has reduced the number of examiners required on the day. Key components in this success were a collaborative approach between clinicians, health simulation experts and the software vendor and flexibility in the redesign of exam workflow and technology use. We are now able to explore the full functionality of the system including assessments of item reliability and validity and the provision of annotated video to students, simulated patients and examiners as feedback.

REFERENCES

Universities face increasing pressure from industry and government to ensure that graduates have the skills to be responsive to change, to be flexible, and to be ‘work ready’. The University Of Adelaide Beacon Of Enlightenment has embraced this challenge, and states that our graduates will be ‘ready for graduate employment’ and that our institution will embed ‘strategies that … produce in our graduates the core skills and attributes employers want’. One way that individual Schools can achieve this is by creating opportunities for students to develop flexible employability skills through work-integrated learning (WIL). In 2015, the Australian Collaborative Education Network, Universities Australia, Australian Chamber of Commerce and Industry, Australian Industry Group, and the Business Council of Australia released a National Strategy on Work-Integrated Learning in University Education, which stated: WIL is aimed at improving the employability of graduates by giving them valuable practical experience which is directly related to courses being studied at university. WIL also improves the transition from university to work and productivity outcomes for the employer and the economy.

There is evidence that WIL can assist to develop employability skills, including problem-solving, communication, information literacy and professionalism. Adelaide Law School has a number of innovative WIL programs. This presentation will consider our suite of social justice internships, which have been offering students the opportunity to develop the employability skills listed above through internships in social justice fields for over a decade. These internships are interesting because they are not commercial in focus; instead they develop skills in a social justice context, and because of their rigorous research focus.

This presentation will explain the design of our internship courses, provide details of how we manage the equity and access issues associated with workplace learning, and discuss how the course and assessment has been designed to maximise students’ opportunity for development of research, problem solving, communication and information literacy skills. The strong research-practice nexus, an unusual design feature of internship courses in law, will be explained.

We will also present data from a survey of past internship students regarding the impacts their internship experience had on their skills development, workplace connections, employability and future careers. This survey of 63 students, who undertook internships in the previous 14 years, was conducted in early 2017. In summary, it found that students perceive their internship to increase their employability skills significantly. Furthermore, 64% reported being asked about their internship experience in job interviews and 65% believed that their internship helped them secure paid work.

The presentation will present a model for a flexible work-integrated learning curriculum which develops skills employability skills in an unusual context – that of social justice rather than the world of business. This model is relevant to other disciplines seeking to develop new WIL opportunities for students.

**Keywords**

Work-integrated learning; internship; workplace learning; employability skills; research training; social justice; equity; access

**REFERENCES**

‘More than ever we need professionals who are responsive to economic, social, cultural, technical and environmental change and can work flexibly and intelligently across business contexts. Australian industry requires new graduates who … have the practical skills to work effectively in their roles’: Mitch Cleary et al, Graduate Employability Skills Prepared for the Business, Industry and Higher Education Collaboration Council (Department of Education, Science and Training, 2007) 1.


Equity issues associated with unpaid work have been widely acknowledged. For example, Perlin states that internships risk promoting ‘inequalities of opportunity that we have been striving diligently to reduce in courts, schools and communities’: Ross Perlin, Intern Nation: How to Earn Nothing and Learn
Little in the Brave New Economy (Verso, revised ed, 2012), xv. The British Low Pay Commission has noted the ‘potentially damaging impact … on social mobility’ of unpaid internships for university graduates because they inhibit labour market access for particular groups who cannot afford to undertake them: Low Pay Commission, National Minimum Wage: Low Pay Commission Report 2012, Cm 8302 (The Stationery Office, London, 2012) 98. These access and equity issues may compound the exclusive nature of recruitment for particular careers, particularly those in which experience is necessary: see eg Sutton Trust, Research Brief: Internship or Indenture? (2 November 2014) <http://www.suttontrust.com/researcharchive/internships/>. Within a tertiary context there are also specific equity issues, for example students from non-English speaking backgrounds may have difficulty securing high-quality WIL placement, or students may be subject to discrimination which limits their capacity to secure or complete a WIL placement.
Information and Communication Technologies (ICT) is especially useful in developing tertiary students’ higher order thinking skills such as creative, critical and logical thinking, problem solving and decision making. With the advancement in technology, the need for tertiary education to provide students with these skills has become increasingly significant. While Livingstone (2012) noted the potential of ICT to support more flexible and learner-centred education to foster constructive learning practices, she also highlighted two fundamental problems in relation to examining the utility and impact of ICT. First, the difficulty in distinguishing which aspects of technology mediate learning due to the diverse forms of educational technology under the umbrella term ICT; and second, the conventional conceptions of ICT as tools for drills and skills rather than higher order thinking skills in education. Thus, this systematic review is timely and relevant since it aims to identify ICT utilised in tertiary education of its conceptual and methodological perspectives, and its impact on students’ higher order thinking skills.

This review was conducted following the EPPI reviewing system (Gough, Oliver & Thomas, 2013) which proposes, first, a keyword map or an overview to categorise studies, and then an in-depth review of the studies. Using databases such as ERIC, INSPEC, AEI and Google Scholar, a total number of 114 studies meeting all three criteria concerning ICT, higher order thinking skills and tertiary educational level were included. Keywording and mapping of the 114 studies revealed that most studies emphasised the utilisation of ICT for teaching and learning (77%), while the remaining focused on assessment and evaluation (10%), facilities and resources (8%), curriculum and policy (1%), and others (4%). Research on the impact of ICT on tertiary students’ higher order thinking skills was intensely conducted between 2005 and 2014, reaching 74% of the total studies identified for this review. This research was mostly conducted in Asia (24%) and the United States of America (21%), and was mainly concerned with education (23%), information technology (16%) and society and culture (16%).

The in-depth review of the 114 studies revealed that ICT tools such as Wiki, Web-based bulletin board and online discussion tools positively impacted on higher order thinking skills measured by tests, assignments, self- and peer assessments, and protocols. ICT integrated instruction helped improve knowledge construction and conceptions, reflective and collaborative learning, in such a way that it enhanced students’ interest and time devotion in learning. ICT could also be an effective way to assess higher order thinking skills. While most studies indicated positive effects of ICT, it is important to highlight one study which uncovered ICT online collaborative learning adversely affected students’ participation in learning.

This review provides the implications for policy, practice and research. Students need to be made aware of higher order thinking skills and the use of ICT, while teachers need to undergo professional development for use of ICT to promote students’ higher order thinking skills. The small number of studies identified for tertiary education is an indication of the need for a greater of research studies in this area.

**Keywords**

ICT utilisation and impact; higher order thinking skills; tertiary education; systematic review

**REFERENCES**


Simulated job interview as an oral tool for assessment: personalised assessment of personalised learning

James Thompson & Don Houston Flinders University

Job interviews can be highly stressful events, with high stakes linked to a candidate’s performance during a relatively brief encounter with a recruitment panel. Graduates from health disciplines often encounter a process of having their employability evaluated through viva voce events. Clinical problems are posed to the candidate as a means to offer an opportunity to display levels of understanding and reasoning. For paramedic graduates, this event marks the next challenge after graduation. With the high stakes of employment in the balance, it is the source of much trepidation. Despite this, little is done to help prepare students for this milestone. Recognising the great investment of self-directed preparation graduates undertook in the lead up to a recruitment viva voce, the paramedic capstone subject at Flinders University explored the opportunity to incorporate a ‘job interview style’ oral assessment into the curriculum as a final assessment event for students’ undergraduate studies. Our capstone pedagogy includes deliberate interplay between different assessments throughout the topic, with each rich in student feedback, while also informing the material to be assessed in subsequent events. One example of this involves a diagnostic exam administered earlier within the subject which provides students with feedback on their performance divided across the 4 distinct curriculum themes. Each student is advised of the area they have performed least well in, which then forms the basis of their final oral assessment. Students are given a broad list of topics (approximately 50 topic headings) which relate to this area, in preparation for this culminating assessment event. Student learning is firstly guided to focus upon the curriculum area requiring the greatest investment (as determined by the diagnostic exam), but then becomes increasingly personalised as students undertake self-directed preparation to the specific topics on the list, often starting with the ones they are least confident with being asked about during a viva voce. On the day, students participate in simulated job interview conditions, before a panel of assessors from local industry. The panel select topics from the theme list the student has been provided and judge responses against industry expectations. Despite large student numbers, each student experiences learning which is targeted towards their own unique needs; in a lead up to an event which will sample their understanding with this material, while also helping to sensitise them to the recruitment process. Our study surveyed the perceptions of assessment practices of 90 paramedic undergraduate students completing the capstone subject. The results demonstrated the interview encourages students to target their learning, improve their understanding of topics and develop skills useful for their future recruitment needs. When compared to all other assessment strategies employed within the subject, it was considered the single most effective event for learning.

Keywords
Interview Skills; Capstone; Personalised Learning; oral assessment

REFERENCES
Bend, Break or MELT
Workshop: motivating students for active cognitive engagement

John Willison, The University of Adelaide; Manisha Thakkar, Endeavour College of Natural Health; Jeanne Young Kirby, Flinders University

As university teachers and tutors we typically focus on the more cognitive aspects of learning in undergraduate and masters-level curricula, while we recognise the motivations and drivers of students are paramount for cognitive engagement. This workshop will highlight the more affective domain of learning, emphasising emotions and motivations for learning. A major reason for this is to build our capacity as teachers to collaboratively develop curricula that foreground the motivation of students and their engagement with flexible learning contexts.

One potential mistake of affective considerations for the curriculum is rigidly portrayed in Bloom’s Taxonomies. Bloom and co-editors carefully delineated the cognitive domain (Bloom, Engelhart, Furst, Hill, Krathwohl, 1956.) and then separately and distinctly the affective domain (Krathwohl, Bloom & Masia, 1964). These taxonomies have been heavily influential until current time in terms of conceptualising the cognitive and affective as intersecting but distinct manifestations of learning and teaching.

Nevertheless, numerous authors have sought to communicate the complementary nature of the cognitive and affective domains for effective learning. This workshop is informed by the Research Skill Development (RSD) framework (Willison & O’Regan, 2006/2016), and the Work Skill Development framework (Bandaranaike & Willison, 2010; 2015) in which the affective domain has been represented as complementary to the cognitive domain since 2009 and 2015 respectively. The parameters that inform the RSD and the WSD have also informed numerous Models of Engaged Learning and Teaching (MELT see www.melt.edu.au), and will provide the conceptual basis for the workshop. The complementary nature and representation together of cognitive and affective elements portrayed in the MELT is in keeping with Krathwohl, Bloom and Masia’s claim, as opposed to their practice: ‘… the fact that we attempt to analyse the affective area separately from the cognitive is not intended to suggest that there is a fundamental separation. There is none.’ (Krathwohl, Bloom & Masia, 1964, p 45).

This workshop then will tease out the affective facets of engaged learning only in order to understand them, design appropriately for them, and to enable them to be an integral part of the development of knowledge and understanding, and the application, synthesis, analysis and evaluation capacities that graduates need. You will collaboratively draft a MELT that suits your context and that factors in cognitive and affective engagement.

In the workshop we will:

- Look at the emotional experiences of graduates, when they were interviewed one year after completion of their university program about the research skills they developed at university and use in their employment settings with patients, employers and businesses.
- Determine for your context appropriate descriptions of the affective domain that mirror the facets of MELT
- Consider examples of instructional designs that factor in implicitly the affective domain:
- Have time to design for the affective engagement of students in order to develop their creativity and their cognitive engagement. The audience will need to debate the knotty issue of how explicit or implicit to make the affective domain. This could be quite controversial and each participant will be left considering the outcomes of the debate in the light of their own teaching contexts.

For details, see
www.rsd.edu.au
www.melt.edu.au
www.i-melt.edu.au

REFERENCES


Evaluating the impact of transitioning courses from face-to-face to online delivery: a case study in wine business.

Kerry Wilkinson, Imogen McNamara, Karina Riggs, David Santandreu Calonge & David Wilson The University of Adelaide

The University of Adelaide’s Strategic Plan 2013-2023 recognises the changing higher education environment as a landscape being ‘reshaped by globalisation and the digital revolution’, with prospective students increasingly interested in ‘flexible delivery outside the traditional academic calendar’. As such, its objectives include a strong commitment to ‘providing flexible learning and e-learning to meet new student needs’, so that ‘learning will be better supported by digital learning resources’ and ‘high quality content can be effectively delivered online with demonstrable pedagogical integrity’.

Foundations of Wine Science (FWS) is a core course in the University of Adelaide’s postgraduate Wine Business offerings, during which, students learn the fundamentals of grape and wine production and wine sensory evaluation. Until 2015, FWS was taught concurrently with a core course in the first year of the Bachelor of Viticulture and Oenology, in Semester 1. However, from 2016, the Wine Business program transitioned from semester to trimester format, presenting an opportunity for the traditional face-to-face lectures presented during FWS to instead be delivered online. In 2016, course content was presented via audio recordings of lectures, whereas video lectures were developed for use in 2017; with additional resources, including online study guides, tutorials, discussion boards and interactives, used to engage, stimulate and support student learning, and to enhance the student experience.

Learning analytics from the Canvas Learning Management System (LMS), together with student grades and online student experience of learning and teaching (eSELT) responses, were compared from 2015 to 2017, to evaluate the impact of transitioning FWS from face-to-face to online delivery on student performance, engagement and satisfaction. The use of audio recordings negatively impacted course eSELTs, with scores for course organisation, learning strategies and resources supporting learning outcomes dropping from 91% in 2015, to 80% in 2016, but the introduction of e-learning designed video lectures in 2017 returned scores to 90%. eSELT scores for satisfaction with course quality, being 87%, 79% and 93% in 2015, 2016 and 2017 respectively, further indicated e-learning designed video lectures were considered superior to audio recordings. Interestingly, student learning outcomes (i.e. final grades) were not different between FWS cohorts – in agreement with previous research which found similar student outcomes for in-class vs. online video lectures – but student engagement was equal or better than face-to-face delivery, when content was specifically designed for an e-learning environment.

This presentation will outline the approach to course design and development implemented in the transition of FWS to online delivery. The use of descriptive learning analytics for (i) the evaluation of student engagement with course content and (ii) the identification of learning patterns that can inform subsequent iterations of FWS, will also be presented. Finally, the time and resources invested in the development of video lectures, and their anticipated longevity, will be discussed.

Keywords
learning analytics; learning outcomes; online learning; student experience; student performance

REFERENCES
Flexibility: adapting to the needs of international learners.

Robyn Davidson  University of Adelaide

This session provides an account of how an international student need was identified and quickly acted upon to provide students with an enhanced learning experience. “Accounting Concepts and Methods” is the first course students experience in Accounting Master programs. The majority of students are of Chinese origin (>90%) with the remainder mostly from other Asian countries and Australia. As such, these programs, like those in other Australian universities, provide an important source of revenue as they tap into the huge, lucrative international market (Austrade, 2017).

There has always been an unwritten policy within the School of Accounting and Finance that, in line with the communicative language teaching pedagogy (Nattinger, 1984), we must not speak to students in any language other than English, with the hope that learners will incidentally acquire communicative skills (Celce-Murcia, Dornyei & Thurrell, 1997) via immersion in learning Accounting; we are, after all, an English-speaking university. However, in semester 1 2017, it was clearly apparent that, due to language difficulties, students were struggling with key Accounting concepts. Two events bought this to a head: (1) advertisements on campus from an external provider who, for a fee, would coach my Chinese students in key accounting concepts in Mandarin, and (2) Chinese students struggling to understand a key accounting concept, and yet when it was explained by a fellow Chinese student in Mandarin, it becoming almost immediately clear.

I had serious concerns about these events. First, it was unsettling that my students felt the need to pay an external provider to give them instruction when that was my duty to undertake. Clearly there was a gap in what I was providing and what they felt they needed. Second, an external provider was proposing to teach my students and making claims that they could ‘prepare them’ to pass my exam, a situation over which I had no control. This, and students teaching each other, made me realise that maybe it is not so important how a student obtains key concepts in accounting, so long as they could demonstrate their understanding when required in assessment tasks. Is it such a bad thing to engage in providing help in a student’s mother tongue so that they can understand key concepts, better converse with me in English and demonstrate their understanding in assessments?

This situation led me to organise intensive revision sessions in Mandarin and English during the mid-semester break and Swot Vac. These were heavily attended with every class fully booked. A special ‘mini SELT’ held after the mid-semester sessions, comments on the course SELT and final results (where ‘Fail’ rates in the exam decreased from 30% to 13%) were all very positive and indicated that this was a worthwhile endeavour.

This scenario demonstrates the need to be flexible and adapt pragmatically and quickly to student learning needs. Based on this experience, I am now making a series of reusable video resources in different languages, including Mandarin, Bahasa and English, which will help to overcome language difficulties and enhance student learning experiences.

Keywords
International learners; communicative language teaching; accounting education; flexible learning

REFERENCES


Blended learning in health: are nursing students ready to be flipped?

Marc Gladman and Ian Johnson The University of Adelaide

A long-running compulsory second year nursing course had previously been delivered in the traditional format but student feedback indicated a lack of direct relevance to nursing practice. Consequently, we redesigned the course, drawing on theories of situated cognition\(^1\) to emphasise clinical relevance, adopted thematic organisation of content delivery to maximise constructional alignment\(^2\) and introduced a flipped classroom to allow more time in class for scaffolding\(^3\). Without robust data to support these changes in this particular cohort, we guaranteed flexibility during the change process. Outcome measures included: (i) student experience and engagement; (ii) subjective evaluation of learning and teaching (SELT); and (iii) student performance.

To facilitate repetitive learning at the student’s discretion and consistent with the flipped approach, all pre-class content was available online. Formal lectures were replaced by weekly 2 hour in-class exercises comprising clinically-orientated readiness assurance tests (RAT) in the LMS completed in the following sequence: (i) individual readiness test (IRAT); (ii) small group discovery experience with access to learning resources and tutors followed by team RAT; and (iii) as the whole class led by the analytics provided by the LMS and driven by the tutors. Immediate, ‘formative’ assessment was available. The individual and group marks accounted for 4% and 1% of the final mark, respectively. Using ‘speed grader’, tutors were able to review performance and select low scoring / poor point biserial questions for further discussion aimed at providing scaffolding to help students solve the problem. The mid-semester and end of semester assessments comprised 40 and 100 MCQs / EMQs, respectively, with focus on pertinent clinical scenarios. Assessment was aligned with learning outcomes using ALOA model.\(^4\)

The cohort comprised 165 students. Overall, attendance/participation in the weekly in-class sessions was near 100% and the small group exercises promoted good discussions and peer learning. Whilst there was almost universal weekly access to online pre-class material, there was major concern initially reported by a minority due to the loss of face-to-face lectures. This prompted the supplementation within the first 2 weeks of online material with key concept / TED-Ed style face-to-face lectures. Ultimately, these were attended by approximately 10-15% of students. End of semester course SELTs (pre-overall grade release) revealed that overall satisfaction with the course was 81% compared with 44% in 2016. However, written opinions were very polarised with 41 glowing comments and 41 highly critical comments, mostly surrounding the temporal imposition of reviewing the pre-class content, a lack of face-to-face lectures and a dislike of the ‘pressure’ associated with weekly exercises. The mean overall student course score increased from 72% in 2016 to 78.5%; the number of high distinctions quadrupled whilst the number of fails halved. Re-evaluation of the student experience following publication of final examination grades revealed an overwhelming support of the weekly in-class assessment exercises over written assignments (115 versus 1 against).

This exercise demonstrates the feasibility of adding elements of educational theory to a long-running, mandatory nursing course with very positive effects on student SELTS and learning outcomes. Student experience was initially polarised but re-evaluation following publication of final grades was much more positive. Accordingly, the timing of the current SELT process should be reviewed to determine if completing the processing after publication of examination grades changes student evaluation. Future strategies to involve students in co-creation of learning outcomes and materials are planned in light of subsequent student feedback.

Keywords
Flipped classroom; blended learning; health education

REFERENCES
Providing student teachers with a practical skills learning space to better equip them for the classroom environment. 

Hannah Harvey University of South Australia

Teaching requires a range of skills yet universities often fail to address some of these skills. Universities work on developing and producing highly skilled teachers through research based course work, placements and exposure to technology. Courses at university need to transform to ensure that all the students acquire measurable, transferable practical skills for employment. This initiative builds on the University of South Australia’s (UniSA) Crossing the Horizon Strategic Action Plan which guarantees classroom-ready graduates. For instance, Action set 1 declares that UniSA will design and deliver curriculum that is relevant and of a high quality, delivering excellent outcomes for graduates in an educational environment that allows graduates to make the most of their student experience (University of South Australia, 2013). Currently pre-service teachers graduate from a bachelor of primary education only being exposed to their future teaching environment on placement in schools. Their first year is very much a trial and error experience as they put their knowledge into practice and start to work out methods that work best for them in delivery, classroom management and the class environment (Putman, Greenberg & Walsh, 2014). To address this gap in knowledge, UniSA have established a practical learning space that provides students with opportunities to experiment, explore and practice skillsets needed to be classroom ready. This space was created with the purpose of helping graduates prepare for their future working environment by providing them with a flexible classroom on campus that allows them exposure and the opportunity for skill enhancement. Simulations and learning spaces are considered best practice in nursing programs and have been integrated after positive student feedback (Garrett, 2014). Research has indicated that this process promotes critical inquiry, applicable learning and allows students to demonstrate their competence which previously was only determined through written assessment (Beattie, Koroll & Price, 2010). The learning space exposes students to a flexible classroom set up and provides opportunities to interact with this space through the use of the SMART board, rearranging furniture, creating displays and developing practical skills thus enabling them to make links between theory and practice while experimenting with their own initiatives. The classroom learning space was created in 2014 with quantitative surveys conducted in 2016 of 53 current students, 4 recent graduates and 15 local school and Childcare leaders. Nearly all (96%) of the students and graduates indicated that the use of the room helped them to develop skills that better prepared them for placement and employment. Some (18%) offered suggestions on other resources that could be implemented in the learning space such as Jolly Phonics, Aboriginal displays and mathematic posters. The majority (94%) of local leadership stated that they noticed a distinct difference in these graduates commenting that they appeared more relaxed and organised when setting up the room at the beginning of the year; something that could increase their employability. Overall it is argued that the classroom learning space aided the development of practical skills needed to be classroom ready.

Keywords

Tertiary education; classroom ready; practical skills; teachers

REFERENCES


Learning analytics has been defined as the measurement, collection, analysis and reporting of data about participants and their learning environment (Siemens, 2012). Learning analytics can provide an impactful insight into Massive Online Open Courses (MOOCs) in particular how participants engage with online material and the design of the course. While learning analytics is used in many MOOCs to report on student retention, behaviour, participation and performance (Coffrin et al, 2014), active strategies to diagnose and monitor achievement of learning outcomes are often lacking. Learning analytics not only provides information about participant interactions which can be regularly reviewed at pivotal points in a course, but is also a mechanism for providing feedback that can be used to reflect, refine, adjust or improve a MOOC by closing the feedback loop (Clow, 2012) and feeding forward what has been learned to new iterations. This feedback creates the way for much needed “flexible learning paths” which are often overlooked in the development of MOOCs (Santandreu Calonge and Shah, 2016, p.71). Therefore the crucial actionable intelligence gained through learning analytics can help academic staff and learning designers to devise agile interventions to increase participant engagement and success in an online course such as a MOOC.

The aim of this investigation was to explore two iterations of the Essential Human Biology MOOC (instructor-led and self-paced) within the AdelaideX initiative (Australia) using descriptive learning analytics to answer the research question; “To what extent might participant activity data in the Essential Human Biology MOOC provide insights to help improve MOOC learning designs.” A comparison of completers and non-completers in the MOOC revealed differences in age of participants, peer interaction, engagement, attrition and navigational patterns which are critical to participant success in a MOOC. Learning analytics data indicated that instructor facilitation, social presence and peer interaction through posts on the discussion board at regular intervals during the course, were necessary to maintain participant engagement. In both iterations of the course the participants engaged with videos and quizzes with non-completers watching and attempting half as many videos and quizzes as completers. Participants navigated through the online materials in a variety of ways therefore the learning paths for the MOOC need to be diversified to appeal to the target audience for which the MOOC was designed. Comparisons between age, completion rates and digital capabilities of participants indicated that older participants were more likely to complete and achieve certification in both iterations of the MOOC.

From this reflective study, recommendations were identified for academic staff and learning designers on how participants interact with online content in two different delivery modes of the Essential Human Biology MOOC. Feeding forward the recommendations discovered in this investigation could potentially enhance participant completion rates in future versions of the MOOC as well as identify key elements in the development and future implementation of MOOC learning designs. The main findings from this investigation also parallel to the online learning space. The use of learning analytics to answer questions about how individuals learn in an online environment, highlight opportunities for actionable interventions to provide feedback at critical points in the learning path. This information can be used to feed forward into future assessment tasks or course iterations to increase student engagement and success.

Keywords
MOOCs-Massive Online Open Courses; Learning Analytics; Learning Design; Feedback; Feed-forward; Adelaide X

REFERENCES
Rapid technological changes combined with the recognition of the importance of a “student-centred” approach to learning has resulted in a range of new teaching methods and formats (e.g. Roehl et al., 2013; O’Flaherty and Phillips, 2015; Tucker, 2012). In the flipped classroom format, course content is delivered outside class time, through a range of technologies, and engagement with that content takes place through interactive and group work, in the class slots. This study examines changes in both student performance and student perception between traditional teaching and a flipped style method across successive years in a single course.

An introductory geology course was taught in a traditional lecture format from 2002-2010, flipped for two years from 2011-2012, then reverted back to the traditional lecture format from 2013-present. The traditional lecture format involves three 50 minute lectures per week over 12 weeks. The flipped classroom style included 10-minute pre-class recordings and formative assessment online questions out of class with two lecture slots per week most weeks devoted to workshops with group and/or single person activities and practice quizzes. Quizzes were collected randomly and used as an attendance proxy. Lecture assessment during both styles of course delivery was through three 50 minute lecture tests during the semester.

Overall, student performance as measured by final average lecture mark did not improve, as has been documented in other student performance studies (e.g. Koo et al., 2016; Ryan and Reid, 2015; Weaver and Sturtevant, 2015). What did change was the distribution of the marks, from a normal unimodal distribution typical of a large introductory course to a bimodal distribution. In the flipped classroom years there were more High Distinctions, but less Credits than traditional years. By using the practice quizzes as a proxy for attendance, it was possible to document a 10% difference in average final mark between those who attended most of the weekly workshops and those who did not. With the exception of attendance and participation, the students with the higher average final lecture mark share no other feature, including: age, gender, time since Year 12, average Australian Tertiary Admission Rank, or degree program. Subtle changes in final lecture marks based on mode of entry (school leaver vs Mature Age Special Entry), low vs high socio-economic status and female vs male were seen in the flipped classroom years compared to the traditional teaching years.

Student perception as documented in Student Experience of Learning and Teaching surveys (SELTs) has always been mostly positive during both styles of teaching. The most significant variation during the flipped classroom years was an improvement in the score for the statement concerning feedback (I receive adequate feedback on my work). The percent Broad Agreement with that statement went from around 50% during the traditional lecture format prior to 2011 to 65% in 2011 and 89% in 2012, the second year of the flipped classroom style. For the flipped classroom years, open-ended comments in SELTs were varied and voluminous, and with quite polar responses.

Keywords
Flipped classroom; Large class teaching; Student feedback

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Retirement not overload: lessons learned on the journey to implement open-book exams in level II biochemistry

Beth Loveys, Hayley McGrice & Christopher Ford The University of Adelaide

Open book exams are not a new concept as a method of assessment in university courses. It has been argued in the literature that a conventional, closed book exam tests the students’ ability to memorise and recall information (Bloom et al. 1956; Feller et al. 1994) while an open book exam encourages broader reading, creative approaches to study and a deeper understanding of content (Theophilides and Koutseli, 2000). The perceived value of open book exams therefore is improved critical thinking (Brightwell et al. 2004) and higher order cognitive skills such as problem solving, conceptualising and reasoning (Feller et al. 1994). It is also relevant to consider that, as many types of assessment no longer require students to sit for three hours with a paper and pen, the consideration of using the power and convenience of technology for delivery of summative examination is worthy of discussion (Williams and Wong, 2009) in the context of open book exams.

As educators we hope that students undertaking our courses retain the core concepts to then build on them in future years of study or employment. This is often a challenge with complex and content-heavy courses such as biochemistry. Animal and Plant Biochemistry II is a core course for students enrolled in several diverse degree programs at the University of Adelaide (Bachelor of Agricultural Science, Animal Science, Applied Biology, Viticulture and Oenology and Vet Bio Science). Traditionally this course has been challenging to a large proportion of the cohort and a 40% exam hurdle has proven problematic, resulting in an unacceptable percentage of students requiring additional summative assessments at the end of the semester. In an attempt to reduce student stress (Feldhusen, 1961; Zoller and Ben-Chaim, 1989) at exam time while increasing retention of knowledge gained in the course (Weber et al. 1983), and to decrease the number of students requiring an additional summative assessment, an open book exam format was introduced in 2017, a format that applied to both the mid-semester and final summative examinations. Students were permitted to bring any notes created by them during lectures, tutorials and practicals, along with printed lecture slides and a maximum of 10 photocopied pages from text book or online sources. In order to scaffold students through this new approach to summative assessment, the students were provided with example mock examination questions during the face to face teaching sessions and given guidance on how an open book question is different to a closed book question. Emphasis was placed on understanding and applying knowledge rather than simply remembering, thus engaging students at higher levels of Bloom’s Taxonomy (Anderson et al. 2001). This presentation will include comparative quantitative analysis on exam performance data from previous closed book exams and the new open book format, and qualitative data gained from student surveys gauging their thoughts on the open book format. Data from the mid-semester examination suggested that students struggled with style of questions in the open notes format, therefore further support and scaffolding was implemented prior to the final exam. The lessons learned through the transition process from the closed book to the open book summative examination format will also be discussed.

Keywords
Open-book; retention; summative; assessment; biochemistry

REFERENCES
Application of text analysis and content analysis to better understand student learning

Mark Mackay, Don Houston & Ian Walton Flinders University, Peter Balan University of South Australia

INTRODUCTION
An important aim in teaching health care management is to ensure that students develop the practice of reflecting on their learning. We have found that a good way to encourage reflection is to ask students to do so at the end of subjects and include this as part of their final assessment. We have collected reflections in two subjects that are offered in Australia and Singapore for several years.

The development of low cost and open source software allows text analysis and content analysis of student reflections to be undertaken relatively easily to develop deeper understanding of student perceptions.

AIM
To develop insights into student perceptions of health care management subjects, using text and content analysis of student reflections.
To explore the relationship between text and content analysis, and student grades, and other student factors.

METHOD
A sample of historic text data was processed in RapidMiner to create a data term matrix (DTM) containing words and ngrams (2 or 3 word phrases) found in the reflections. The most frequently used words and ngrams were used to create social network graphs using Ucinet to show the relationship between students and the use of the text (Balan, Balan-Vnuk, Metcalfe & Lindsay, 2015; Borgatti, Everett & Freeman, 2002; Borgatti, Everett & Johnson, 2013).

Linguistic Inquiry and Word Count (LIWC) software (Pennebaker et al., 2015) was used for content analysis of the reflections. Apart from providing a word count, the software categories the content based on predetermined psychological categories.

The content analysis results and text analysis results were combined with student-related outcomes, such as grades for further analysis.

RESULTS AND DISCUSSION
The text analysis generated social network graphs that provide an insight into the main words and ngrams being recorded by students in their reflections (Balan, 2015; Mackay et al., 2016). The relationships between the nodes highlight the way in which students can be seen as groups. The groups are not isolated and students may be members of a number of groups. This information provides insights into student perceptions of subject content and delivery as well as the number of students sharing similar reflections.

The LIWC content analysis proved useful in identifying different groups of students based upon the psychological content of the reflections and is consistent with past studies (Pennebaker et al., 2014).

The reflections in and of themselves provided useful feedback to educators. The analysis methods allowed the reflection texts to be analysed quickly and provide greater insights about student learning and their perception of how their studies will relate to the world of practice.

FUTURE RESEARCH
Greater insights can be gained by expanding this analysis by using more data and including reflections from additional subjects. The opportunity to incorporate other student related factors also exists.

Keywords
class analysis; concept mapping; text analysis; student reflection

REFERENCES


First year student perceptions of group work

Thomas Wanner & Edward Palmer  The University of Adelaide

Group work is generally accepted as a worthwhile learning tool in higher education. Benefits include that students develop skills to work in groups, collaborative learning skills, communication, and social skills, and that it can help to reduce the marking load, particularly for large classes (Arumugam, Thayalan, Kaur, & Muthusamy, 2013; Berry, 2007; Grajczonek, 2009). Students may find team-based assessment involves them changing their approach to learning together, improves their skills in collaboration, cultural diversity and team unity (Volkov & Volkov, 2015). Some challenges that are identified by students include poor group attendance, and concern over group members receiving credit without completing the same amount of work (Hassanien, 2006, p. 28). School graduates entering university can feel overwhelmed by a lack of instructions and open-ended tasks, in particular when doing group work (Verenikina, 2012).

In this study, we report on strategies used to support group work in a first year Geography course where students needed to research a globalisation issue of their choice and produce a 5 minutes video. These strategies include training in group work in tutorials, collaborative setting of group work assessment criteria, and providing the opportunity for individual reporting after the group work process as part of the assessment. Results from 52 respondents from a post-course survey showed overall positive attitudes of first year students towards group work with only about 10% of the students having issue with the group work assessment. Students raised concerns of insufficient access to resources to support them with their group work activities.

These preliminary findings about first year group work show that students are not inherently opposed to group work and see the benefits of it but require continuous support from the teaching staff and faculty/university to help them to build the skills for effective group work. The key recommendation from this study is that there is value in providing some form of assessment of individual contributions to the group work.

**Keywords**
group work; first year students; collaborative learning; higher education

**REFERENCES**
The purpose of this paper is to examine issues surrounding language learning and nuanced language use in context for postgraduate engineers. The objective is to consider the designing of a solution(s), which accelerate(s) language learning to match postgraduate students’ engineering skills. The research seeks to enable the students to express their engineering knowledge fluently, confidently and accurately for the text types they will need as postgraduate engineers.

As Engineering Education becomes formally recognised as a discipline in its own right, building its own academic paradigm (Mann, 2006), a new set of integrated approaches to the discipline-specific socialisation of language use is needed, notably in writing, to build dynamic, fresh solutions to the specific language issues of engineering postgraduates. In order to be fully integrated with content instruction, the solutions need to be both distinct from, yet in dialogue with, broader ways of knowing, teaching and learning, as current pedagogies and approaches, whilst useful, are insufficient, particularly for international students. A potential solution is explored using the foundational metaphor developed by Levi-Strauss (1966) of the linguist who examines the complexity of the student bricoleur and moves forward alongside them to an engineered solution.

From this, a number of approaches are drawn together in order to create a framework for a specialist, dynamic system, which can be exploited by Engineering postgraduates to edit their writing appropriately and effectively.

The solution, which has been engineered both physically and virtually, is a tri-partite solution, including play theory (Brabazon 2016), high concept learning for gifted students (Gagné 2010) and other approaches encompassing Engineering Modes of Cognition (Lucas, Hanson and Claxton 2014). All three elements of the tri-partite solution will be introduced: the Language Trees, which encourage playful, social, visual-kinesthetic learning of language in context; the Mechanical Engineering Corpus, which supports accuracy and detail, particularly for collocations; and the MOG TREE app, which offers web-based, engineering-orientated grammatical support. The MOG TREE app is itself supported by face-to-face workshops, which teach how to get the most personalised learning out of the app and offer testing of learning through a series of structured activities. The MOG TREE app is a dynamic, robust set of learning pathways covering all important aspects of grammar, syntax and punctuation in an Engineering context, enabling the EH HDRs to nuance their understanding and use of language within an academic framework. All three elements of the tri-partite solution are currently being trialled through the language learning short courses in Mechanical Engineering, as well as by a small cohort of EH HDRs throughout ECMS. Results of the small-scale, early testing will be presented, which suggest that there is strong engagement with this tri-partite solution, which has been driven by the EH HDRs’ own requests, concerns and modes of cognition.

### Keywords
Accelerating Language Learning; Visual-Kinaesthetic Learners; Engineering Modes of Cognition; Play theory; Bricolage

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What matters? Students and staff collaborate in a self-study to explore the utility of the eportfolio to demonstrate scholarly activity and support doctoral becoming

Nicola Parkin & Ben Wadham Flinders University

In 2010 a substantial UK research project into the nature of doctoral learning (Wisker et al., 2010) found that doctoral students experience epistemological, emotional, ontological, intellectual and professional development shifts. Such is the depth, breadth and character of doctoral and scholarly becoming, where the experience of ‘learning’ at this level can be personally transformative (Barnacle, 2005; Wisker et al., 2010).

What supports this work? An earlier government-commissioned report into doctoral supervision by Australian researchers (Cullen, Pearson, Saha, & Spear, 1994) pointed out that one of the factors was simply making these shifts explicit, and reflecting on them. The eportfolio is a device that has the potential to support these processes of ‘making visible’ these shifts over time. It is a private, user-controlled electronic space in which to record and reflect on activity and experience and which, being authored by the student, occupies a wholly different space to institutional platforms for managing or reporting student activity. The eportfolio is also a tool that easily facilitates the opening up of work to a community of scholars for debate (Lyons & Freidus, 2004), or for sharing elements work in progress with supervisors and significant others. For some, the very act of being ‘witnessed’ through their portfolio is also important (Burrows, 2011). The point is that the eportfolio is for the student, and for each, the value and utility of the portfolio will be different.

With these potentials in mind, doctoral education students and staff in Flinders University’s College of Education, Psychology and Social Work have initiated a pilot study exploring the use of the Mahara eportfolio platform to see how it might add value to the doctoral process in ways that matter to them, be they personal or practical. The collaborative self-study methodology is used as a device to structure and focus the inquiry. Research group members ‘show-and-share’ how they are using the platform, and together reflect on their experiences and imagine what else might be possible. In particular, the study looks for how the eportfolio might be used to support and complement periodic institutional candidature milestone reviews, academic career building, scholarly community-building, doctoral learning, and personal development, as well as acting as an integrative space where the many worlds of the doctoral student might come together.

This presentation will report on early findings from the study and discuss implications for practice.

Keywords
eportfolio; doctoral learning; self-study

REFERENCES


Bend, break or MELT: Fluid pathways for learning and teaching

John Willison The University of Adelaide

Australian universities’ increased flexibility for students highlights the need for conceptual connections between learning elements that students encounter. Flexibility is provided by mechanisms including a variety of pathways into and through degree programs, badging/credentialing and student choice of learning media, times-to-engage and capstone experiences. One risk of this increased flexibility is of diminished coherence of learning, where for example students enrol in subjects that require a knowledge base and skill set learned in a subject they complete subsequently. A model where students access information just as they need it may maximise learning in some cases; in other cases fundamental understanding may be elusive, or require skillful scaffolding of information, such as threshold concepts for a discipline (Meyer and Land, 2003).

Flexibility requirements bend university programs of study however, they may break in terms of the successful facilitation of student learning of desired course outcomes, including knowledge, skills and attitudes expected of graduates. A risk of increased flexibility is compartmentalisation and piecemeal learning, where there is a proliferation of offerings, platforms, media, content and skills required, in which the range of choices, terminologies and orientations may become bewildering. In such a proliferation there is the risk, that Adcroft discerned in regards to assessment, where each learning activity may be: ‘…something which is too specific to a single episode … rather than generalisable to the learning experience as a whole’ (Adcroft, 2011 p. 417).

This presentation will consider the conceptual connections between sometimes seemingly unrelated subject components, including content knowledge, laboratory work, field work, clinics, literature, problem/project- based learning, researching/ discovery-based learning. Providing a conceptual connection enables students and teachers to generalise all the individual parts to the learning experience as a whole. This includes providing conceptually coherent relationships between episodes of learning within and between different subjects in a degree.

This presentation will focus on how universities have begun to provide a coherent and flexible spine for learning (Willison & Parange 2016) by using an overarching conceptualisation, the Models of Engaged Learning and Teaching (MELT) that academics and professional staff adapt to their context. We will look at two inter-connected MELT, The Research Skill Development framework (Willison & O’Regan, 2006/2016) and the Work Skill Development framework (Bandaranaike & Willison, 2015) to explore how coherent learning connections can be made not only by academics, professional staff and casual staff, but also by students.

Keywords
coherent curriculum; flexibility; Models of Engaged Learning and Teaching

REFERENCES
How do electronic workshop activities and assessment influence our approach to teaching?

Sarah List & Bronwen Mayo  University of South Australia

Increasingly, universities are adopting electronic technologies for operating class activities and assessments. The drivers of this are three fold: need for equity for students enrolled into either online or on campus modes of study; desire for students to receive continuous and more substantial feedback; and, the dual pressures of increased teaching time pressures under reduced budget allocations.

AD Instruments for a number of years has operated an electronic lab strategy involving a powerlab (computerised lab in a box) that reduces the need for consumables while allowing students to create experiments, take measurements or utilise pre-existing data for analysis). Recently they have expanded to include a suite of customisable online activities that include clinical cases with real patients (LT KuraCloud).

KuraCloud has been implemented in several biosciences courses at the University of South Australia to replace a written lab book assessment, with positive feedback from the students. However, the casual teaching staff reported feeling limited in their teaching approaches, and under-utilised during the lab sessions.

This paper examines the impacts that the teaching staff reported on their teaching methodologies, and provides suggestions to how course coordinators may best prepare staff for a change to electronic resources such as KuraCloud, so that both students and staff together may experience engagement and satisfaction from the learning and teaching experience.
Social Media and Student Engagement: An example of Twitter as a learning adjunct.

Brad Mitchell Flinders University

This presentation outlines the promotion and use of social media to supplement learning and teaching within a practical-based topic of a paramedic science degree.

By introducing Twitter and a hashtag at the start of the semester, and encouraging students to post and take pictures of classroom activities, there has seen a sharp rise in the number of students with Twitter accounts. The creation of topic/subject specific hashtags means that certain content is directed toward specific cohorts, and a record of class-related tweets is created.

According to Greenhow and Lewin (2016), use of social media aligns well with Social constructivism and connectivism in terms of learning, with varying attributes of formality and informality. This use of Twitter has afforded the opportunity to supplement traditional teaching methods by providing resources in a platform which is extremely relevant to the cohort. Students are constantly on their PCs and smart phones, and so educational opportunities are right at their fingertips at all times of day. This emerging field of scholarship is cost-effective, instantaneous, easily accessible, and has been well received by the student cohort.

A Twitter feed was embedded into the online learning management system so that students who do not have a Twitter account, or those who are distance education students, can keep up with what is occurring locally in the classroom. Thus students are able to interact and collaborate with each other at their own time and within their own context, supporting the notion of informal learning as proposed by Billett (2002). “Social media is being presented not merely as a valuable way to participate in class, but as an essential part of preparing for a career” (Blankenship 2011, p. 41).

The ambulance industry is growing within the Twittersphere, with the state-based ambulance services, local managers and paramedics having a stronger online presence. This gives the students access to these individuals, networking, and self-promotion opportunities. It also aligns with the current movement of #FOAMed – ‘free open access medical education’ where medical resources, advice, and information are shared and discussed via the Twitter platform.

Anecdotaly the inclusion of Twitter has been received positively, with no negative aspects identified. The use of social media has resulted in increased student engagement, and an appreciation for the concept of a professional online identity. “Harnessing the learning attributes of social media could enrich experiences of learning within institutional contexts” (Greenhow & Lewin 2016, p. 25). The paramedic science experience of Twitter sees it as an effective adjunct to the current high-quality teaching and resources offered.

Keywords
Social media; technology; Twitter; student engagement; #FOAMed

REFERENCES


You scratch my back: Teacher-Lecturer collaborative partnerships fostering in-service Teacher research in an uncertain world.

Linda Westphalen, The University of Adelaide & Jarrod Johnson, Pulteney Grammar School

Professionals at Pulteney (P@P) is a professional development ‘clinic’ which provides academic support for teachers writing for publication. This presentation is a theoretical review and reflection on the development of P@P, as well as a consideration of applications in other industry contexts.

The Beacon of Enlightenment Strategic Plan 2013 – 2013 has, as part of its aims, to rekindle the University of Adelaide’s importance to the community by creating ‘research partnerships with industry,’ and ‘communicating vividly the university’s successes in producing independent, educated leaders’ (Beacon 2013: 7). Forging an industry partnership with a school is difficult: teachers and academics are both time poor, and research is a time-hungry process. Additionally, the focus of a school is on teaching for learning rather than research. Yet education is also a contested space requiring that teachers maintain professional currency.

Two factors emerge from this scenario: first, that the need for professional currency has resonances in other workplaces; second, that large formal research articles for publication in peer-reviewed journals are unlikely to be produced in such contexts. While formal publications are preferred, the reality is that small-scale research at the local level is likely to have significant impacts on a community’s practice. Additionally, encouraging staff to expand on their own learning through research and innovation with university academics exemplifies a learning culture that both employers and academics expect from their respective workers/students.

P@P is situated in this context and underpinned by two principles. One, based on the work of Nel Noddings (2002; 2005), is the notion of Care in Education. This extends beyond the well-known legal focus of ‘duty of care’ to broader, more relational, psychological and ethical concepts of care. The second principle is taken from Humanistic Management (Melé 2003; 2012). Guided by the fundamental understanding of unconditional respect for human dignity and agency, Humanistic Management is an ethical stance on decision-making, where workers are co-agents in the running of workplaces.

These principles were central in the development of P@P at Pulteney Grammar School (Pulteney 2017). In early 2017, it was decided to formalise and expand an ad hoc one on one association to include other teachers. This began with the development of a Charter outlining the relationship’s purpose, benefits and the expected time commitments. Key in the Charter are two principles of practice: that mentoring is provided weekly, and that there is no pre-planned agenda. This is to ensure that what is addressed is topical, responsive and pragmatic. A Memorandum of Agreement (MOA) was developed and ratified in August 2017.

Benefits fit into three categories: the immediate, local and broader workplace community (whatever it is). The immediate benefit is to the teacher/worker and academic who contribute to their professional profiles and publish the process to the workplace and community. The local benefit is to the staff cohort who gain Professional Learning and academic profiles. The benefits in the respective wider institutional contexts are likewise profile and reputation.

P@P has tangible benefits and outcomes, including drafting a Pulteney assessment proforma, the establishment and ongoing development of the SoE’s ePortfolio, and three conference papers in 2017 alone. In August 2017, P@P includes about 20 teachers: this number is likely to further expand. Given this uptake, impacts on staff, students and industry will be a focus of future research.

REFERENCES


Preparation of health care students for clinical practice by innovative teaching and assessment strategies is important yet challenging aspects of education programmes (Kelly et al. 2016, p. 175; Sivertsen, McNeill & Muller 2016, p. 471). The manner in which simulation is offered to large cohorts, in particular how students perceive such simulated environments or simulation team assessments is not well understood (Kelly et al. 2016, p. 172; Nielsen & Harder, 2013, p. e510; Hutchinson, 2013; Teixeira et al., 2014, p. 272; Clarke et al., 2014; Rochester et al. 2012, p. 118). This paper is exploring the use of high volume high-fidelity simulation team assessments in nursing. The study is based on student evaluations from a voluntary and anonymous end-of-teaching survey. The review evaluates simulation assessments as a learning experience in a final year nursing topic. This paper explores student perceptions of undertaking a simulation assessment in teams, as well as how to prepare for such an assignment via scaffolded learning strategies from both student and educators’ views.

The study comprises 572 participants of a total cohort of 806 undergraduate final year nursing students. Likert ratings and open ended responses in the end of topic feedback survey enabled a thematic analysis of participant experiences with the simulation assessment.

The many responses provide interesting insights for why students found the simulation team assessment with its scaffolded preparatory learning activities, to improve their learning experience. The findings revealed that students felt better prepared for time in clinical areas, and felt better equipped to recognise and respond to deterioration of patient conditions in the clinical settings.

The purpose of this study was to review the usefulness of team based simulation assessments for student learning in nursing education. With solidified knowledge students will have more confidence with clinical reasoning when interacting with patients. The simulation assessment was by students perceived as a positive experience towards enhancing own learning and improving self for clinical work. Future exploration of students in clinical environments post simulation assessment, in particular in regards to deteriorating patients and clinical decision making processes, is warranted in order to determine whether the simulation team assessment with scaffolding activities is improving student learning in regards to actual clinical preparedness.

Keywords
Simulation scaffolding; simulation assessment; high-volume simulation; enhance learning; confidence; simulation in nursing education

REFERENCES


