Large online first year learning and teaching: The lived experience of developing a student-centred continual learning practice

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Abstract

A large online first year management course has the potential to present the perfect learning and teaching ‘storm’. This journey, uses continual (action) learning as an action research methodology to develop and improve student-centred approaches (Biggs & Tang, 2011; Prosser & Trigwell, 2014). Qualitative student feedback and aggregated data are presented through the theoretical positions, of student-centred pedagogy and organization development theories to build social construction. Technology, the ‘shiny toy’ of online education is often emphasised in place of a balance between pedagogy, technology and content knowledge (Mishra and Koehler, 2009). This research demonstrates the regaining of balance across these dimensions through the application of action learning sets. The outcome of this research reveals the practical benefits of a student-centred focus that is underpinned by the student’s sense of belonging and overall satisfaction. These benefits improve students’ learning experience and theoretically advance the importance of continual learning and teaching in higher education.

Keywords

Continual learning, teaching philosophy, action research, PDSA, online learning, first year experience

Acknowledgements

The action research approach of this research was supported by Griffith Business School and Vikki Ravaga our Educational Designer. For recognition of this work the Griffith University Learning and Teaching Excellence (Online) Award, 2015 was conferred which has been extended into this current research.

INTRODUCTION

Student-focused teaching in the online environment is challenging and unique. Combining the online context with large first-year classes with the incumbent issues of culture shock, retention, diversity, and alternative entry creates the perfect higher education storm (Lizzio and Wilson 2013). There is substantial research on the separate issues of first-year students (Nelson and Clarke 2014), large classes (Prosser and Trigwell 2014; Snowball 2014) and the online experience (Cochran et al. 2014; Snowball 2014; Whitaker et al. 2016) yet there is minimal understanding of the intersection between these two areas. In the highly competitive and dynamic context of higher education, it is essential to improve understanding and extend knowledge about the intersections of the online and first-year remit. In the management discipline, scholarly attention is needed within these dimensions of the perfect storm (Arbaugh 2016). Through honest observation and reflection of emergent issues and innovations experienced by individuals involved in this mode of delivery, insight is extended. We socially constructed through action research to address the research questions: *'How can the first-year online management student experience be improved?'* and *'Why is continual learning a driver for student engagement?'*

The relevancy of building a sense of belonging and enhancing the social construction of learning has an impact on whether a student succeeds in their higher education (Lizzio and Wilson 2013). This sense of belonging contributes to retention of online and first-year cohorts (Atchley et al. 2013; Lizzio and Wilson 2013) as does the transitioning into university (Brinkworth et al., 2009). The application (Hindle et al. 1995) is from the first author's (my) learning curve in assuming the convening role of a large, online, first-year management unit, Management Concepts (MC), that has four offerings in a 12-month timeframe (back to back). University administration targeted redevelopment of this compulsory foundational unit within the Bachelor of Business, Griffith University/Open Universities Australia (OUA). My discipline knowledge of organisational development theories fostered a teaching philosophy centred on continual learning for the research basis. Figure 1 depicts the focus of this through the adaption of Checkland's framework, methodology and application (Checkland and Holwell 1998; Hindle et al, 1995; West and Stansfield 2001). Checkland (Hindle et al. 1995) proposes the application (A) or area of interest (West and Stansfield 2001) as the real problem. In this research the A was the development of MC, a large online first year management unit taught non-stop with no downtime. The framework (F) of continual learning is in consideration of prior understanding of the problems and the development of a my teaching philosophy. In the

development of my teaching philosophy, the epistemological and practical connection of A and F was synthesised through an action research methodology (M) (Symon and Cassell 1998; Hindle et al. 1995).

Figure 1: Framework, application and methodology for this study (adapted from Checkland and Holwell 1998; Hindle et al, 1995; West and Stansfield 2001)

An action research methodology was used to extend knowledge through a spiral of reflection and reflexivity (Carr and Kemmis 1986:201; Cunliffe 2002). Through the social construction within the action learning sets continual learning and improvement was embedded. Making sense and deriving meaning from multiple sources and contexts is the idea behind gaining socially relevant knowledge and learning for practical applications (Scaratti et al. 2014). SUM The enhancements and improvements are demonstrated through aggregated data and students' qualitative feedback (through an embedded unit link, chat board, emails and Yammer). As the first author and convenor, I worked with the second and third author who have been long-term mentors in my scholarly pursuits. This relationship provided the reflective and lived experience of the action learning positioned in the action research (Dick 2017; Kember 2000). We conclude that a student-centred approach supported by continual improvement provides substantial gains in an individual's teaching practice, therefore, extending wisdom and ultimately improving the student experience. The simplicity of continual learning is challenging for educators with complexities of resources, technology, workload and pedagogical understanding, however, as demonstrated in this study, if followed through there are rewards for educators, unit improvements, and institutional development.

BACKGROUND TO THE PERFECT STORM – APPLICATION (A)

In comparison with face-to-face classrooms, online learning attracts students from diverse backgrounds (Whitaker et al. 2016). The minimal personal connection with teaching staff is an issue in large classes that amplifies the misalignment between students' assumed versus actual skill sets (Comer et al. 2015). A lack of connection can manifest in feelings of isolation and insecurities that negatively impact motivation and engagement in learning strategies (Snowball 2014). In this research, the student cohort included pathway or alternative entry students, who may not have completed high school, belong to lower socio-economic groups, come from remote geographical locations, or all three groupings. In all these cases, the basic requirement of the students' access to internet was often limited and unreliable.

Based on scientific insights into how humans learn, a universal design for learning optimises teaching and learning (National Centre on Universal Design for Learning 2016). This design for learning is important for the real world problem of first-year students' due to their inherent lack of preparedness and need for accessibility to relevant, applicable learning material (Hindle et al, 1995). A balance of effective technology, pedagogy, and content is needed to establish a positive online experience (Koehler and Mishra 2009; Tee and Lee 2011). While employing the latest technology may be a new and exciting adventure, it can be misaligned when it drives the learning and teaching experience at the expense of an appropriate pedagogical lens.

Large online classes provide the opportunity to reconceptualise learning and teaching strategies, as this mode of delivery requires going beyond scaled-up versions of smaller or on-campus offerings (Snowball 2014). Previous understandings of large class experiences have shown them to be undesirable and ineffective when compared with smaller cohorts (Cuseo 2007). Although a definitive interpretation of a large class is elusive, most literature in this domain examines student cohorts of 100 or more (Maringe and Sing 2014). With over 2000 fee-paying students across four study periods the unit under study is differentiated from a massive online unit (MOOC) (Zemsky 2014). Of relevance to the online space is the explicit need to provide a safe environment in order for deeper learning to occur (Kisfalvi and Oliver 2015). The online space is challenged with the diversity, which while is enriching can also be difficult to accommodate due to cohort size and reduced human interaction impacts (Snowball 2014). Despite the traditional asynchronous delivery of online teaching, deeper learning or metacognition can be realised through the engagement of students (Prosser and Trigwell 2014; Snowball 2014) and

the cognitively balanced integration of technology, pedagogy and content knowledge (TPACK) (Koehler and Mishra 2009). Understanding how to integrate these factors within the perfect storm of MC generated opportunities, challenges and the potential to extend understanding of the growing online higher education sector.

Scholarship in the management discipline is an area in need of considerable attention (Arbaugh 2016) which is exacerbated by the existential growth of online offerings (Whitaker et al. 2016) and should not be up-scaled versions of smaller units (Snowball 2014:823). The online offering of Management Concepts is a flagship of the business school, therefore, needed to showcase our learning and teaching capabilities. Challenges in providing a quality pathway management unit included enrolments of students from other disciplines such as accounting, finance, and humanities. Students can also enrol in the unit as an elective or non-award unit. The diversity of the student cohort is heightened through alternative entry (no prerequisites needed), geographically remote including incarcerated students, those deployed in the military, elite athletes, and those who opt to study online for a range of reasons.

The initial unit was an upscaling of the on-campus offering, however, it has taken its own form and shape to become an exemplar and has been recognised by a teaching excellence award. It is this journey which forms the basis of this research. The normative reeducative organisational development lens of continual learning (F) in conjunction with educational theory is positioned around student-centred learning. In the application (A) of MC, the learning objectives of ‘introducing management’ and ‘developing academic writing skills’ were assessed through formative tasks where there is low-risk, and capabilities are encouraged through low-risk (low-mark) tasks. These formative assessments led to a summative written report and exam. High student numbers presented a requirement for a stable teaching team consisting of the convener, five tutors, and an educational designer who along with the mentors (co-authors) acted as sounding boards for reflection and insight on initiatives. The tutors were allocated a tutorial group that they monitored and interacted with through Yammer, an online social media platform, and email contact. As a lived experience, the qualitative methodology of action research (M) proved appropriate to engage in the redevelopment while maintaining the goals and aims of the unit, and institution.

TEACHING PHILOSOPHY

In redeveloping this unit, I recognised the importance of coming to terms with my teaching philosophy. Through self-reflection, collegial discussions and mentoring, it became clear that a student-centred approach would

encourage students to socially construct their own meaning in the dynamic world of business management (Cunliffe 2002). Social construction emphasises the interactive nature of learning (Carroll et al. 2013; Scaratti et al. 2014) to reinforce engagement with knowledgeable others to form new understandings (Koris et al. 2016; Kuusisaari 2014). New beliefs develop from practical experiences which add to the ‘store of practical wisdom’ (Carr and Kemmis 1986:94). The continual learning philosophy underpins the action learning sets that feed into and extend understanding, therefore, increasing the opportunity for student success (Dick 2017; Dick and Dalmau 1999).

Continual learning through social construction forms knowledge from the experience of reading, seeing, hearing, and feeling; and is used in the broader context of one’s environment (Maringe and Sing 2014; Kolb and Kolb 2005). The previous experiences combined with the transformation process of critical thinking is taken beyond the repository of our minds to increase sense-making for new forms of reality. Social construction emphasises this sense-making and reflection of the individual’s experience as the process, production, and output (Checkland and Holwell 1998; Ramsey 2011). Social construction emphasises action and the continual nature of learning (Jackson and Chapman 2012; Kuusisaari 2014). Through co-construction with colleagues, students and the cyclical approach to improve my teaching, the student centred approach shifted to a knowledge-building process and subsequent embedded learning (Kolb and Kolb 2005; Kuusisaari 2014). The extension of understanding through the social construction of knowledge takes students from the unknown to the known and practised, bringing thought and action into existence (Kolb and Kolb 2005; Kuusisaari 2014). Given the diversity and number of students in this first-year online offering, attention to continual learning through a student-centred method (see also Houghton and Stewart 2017) presented the opportunity to improve the learning experience (Arbaugh 2016; Maringe and Sing 2014).

CONTINUAL IMPROVEMENT – FRAMEWORK (F)

The declaration of the continual learning framework of planning, doing, studying, and acting (PDSA) is for sense making of how to develop teaching abilities in the context (A) of MC (Checkland and Howell 1995; Deming 1994). In turn, teaching students to work independently and with others through talk and action develops deeper levels of learning that facilitate sense-making and the student-centred approach (Ramsey 2011). This sense-making leads to a transformation in the students’ conceptual understanding, and hence the realisation of social

construction. Overlaying a continual learning approach onto teaching practice embeds good practice with the potential to influence the students' learning style. The PDSA cycle (Figure 2) shows the attainment and expansion of knowledge for both innovation and continual improvement (Deming 1994).

Figure 1. Plan, do, study, act (PDSA) adapted cycle for learning and improvement Deming 1994:132).

The *plan* phase is where new ideas or innovations are identified and developed as a conceptual framework. In the *plan* phase the two components of determining goals and process are directed at answering the how and why questions of our research. The *do* phase is the enacting of the *plan* phase, aimed at the improvement process itself, where activities can range from a small-scale or pilot project through to a large-scale intervention, depending on the education and capabilities of the participants and the organisational context. The *study* phase is the reflective process of learning for the actions taken to improve and enhance the initial intervention. As the PDSA cycle continues, the individuals, groups and process involved are used to inform and enhance the project under development. The *plan* phase is an essential and often under-developed phase, as it highlights problematic or undiscovered areas, enriching the project, and providing greater understanding and rigor. The *act* phase involves acting on the findings from the study and the adoption of successful outcomes. These occur through the identification of new or improved inclusions to the *plan* and *do* phases. It is also the documentation and uptake phase for the new processes of learning. At this point PDSA informs the action and process, allowing it to cycle again with a higher level of understanding and improved output (Gapp and Fisher 2008).

The PDSA quality cycle framed continual learning and improvement for the acquisition of knowledge and education (Deming 1994). Through studying the change results, planning and predicting

are improved. Many support the ongoing relevance of PDSA as a model for managing quality, change and continual improvement in the learning and teaching environment (Deming 1994; LeMahieu et al. 2017; Sharabi 2013). Implementing PDSA supports an evergreen commitment to learning and the importance of acquired knowledge through questioning, feedback and reflection (Cunliffe 2002). Continuous cycles promote learning and action research within and across individuals for implicit understanding (Bendermacher et al. 2016; Kemmis 2009).

METHODOLOGY (M)

For clarity, we used action learning (PDSA – the identified framework for continual learning) as the method and action research as the methodology as we explored and presented our experience and data in the context of action learning (Rigg and Coghlan 2016; Zuber-Skerritt 2001). This draws on Revans' wisdom and foundations in action learning (i.e. 1983; 2011), to create a hybrid approach (Dick 2017; Zuber-Skerritt 2001) that assumes PDSA as the action learning set to embody the social constructivist paradigm of action research (Deming 1994; Rigg and Coghlan 2016). As individuals, we go beyond thinking and talking about our teaching to reflect, improve, understand, learn and build knowledge thus enrich our wisdom or 'true common sense' (Revans 2011:92). At the project level, the unit enhancements position a richness aimed at the development of practical knowledge leading to wisdom regarding teaching (Carr and Kemmis 1986; Statler 2014). The second and third authors were mentors and co-constructors in the action research process (Checkland and Holwell 1998; Heracleous and Marshak 2004; Kemmis 2009; Snoeren 2016). These mentors or helpers, allies, confederates, accomplices, mates, conspirators or simply, friends (Revans 1983:46) facilitated my self-reflection through a Socratic relationship that supported my philosophical approach (Carr and Kemmis 1986). In gaining students' insights, my mentor's offered curious questions that were instrumental in the co-construction and reflective approach.

The action research methodology was a meta-practice (Kemmis 2009), and a hybrid approach to our action learning (Dick 2017; Dick and Dalmau 1999) with the conceptual aim of continual learning and improvement as depicted in Figure 3. This co-construction is positioned within our research to gain thick and reflexive learning and teaching episodes over a period spanning 12 months and four terms.

Figure 2. Methodological stages taking the philosophical underpinnings to social construction of continual improvement

Action research holds many possibilities with the potential to emancipate people's actions and behaviours leading to change and transformation (Carr and Kemmis 1986; Kemmis 2009). The long history of action research in education circles is often dependent on teachers to learn and develop new learning frameworks with little support (Kemmis and Wilkinson 1998). The focused efforts here were taken from self-reflection to improve the quality of the learning experience for the student and to augment our teaching (Cunliffe 2002; Raelin 2009). Action learning and research is advocated for long-term enhancements and continual improvement through innovation, in a constructively aligned curriculum that is based on scholarly teaching (Biggs and Tang 2011). Initially, I applied self-reflection on my understandings to explore and review my personal experiences with the aim of improving the social construction and meaning through in-depth practical understanding of the teaching episode (Raelin 2009; Statler 2014). To ensure that this reflection took a profound approach, which did not rely on personal biases, student feedback was collected outside of the standard institutional practices. These sources of qualitative feedback (embedded unit link, chat board, emails and Yammer) obtained in Stages 1 and 2 informed improvements to enhance the student experience. These 'learning cycles' (Checkland and Holwell 1998) or 'action learning sets' (Dick 2017; Kember 2000) were the foundations for continual learning and improvement.

Blending the personal review into the action was directed at the improvement of the methods and approach involved in this teaching episode, with students' experience targeted. The continual improvement and iterative process of PDSA within our action research approach ensured a high level of trustworthiness and credibility to secure rigor (Stewart et al. 2017). Although an array of data-collection (reflectons, mentoring and consulting with colleagues, tutors and the educational designer) were employed, the student feedback is the primary source used here to demonstrate the transition from ideas to reality.

STAGE 1 – TERMS 3 AND 4

Plan – Teaching Philosophy

Through continual improvement (PDSA) and connecting with students, there is potential and opportunity to extend student understanding (Kuusisaari 2014) by enhancing the learning experience (Carroll et al. 2013). Improving students' learning experience leads to an improvement in knowledge, with conceptual change resulting (Jackson and Chapman 2012). As the unit convenor, my teaching philosophy for social construction through a student-centred learning approach emphasised the need to balance technology in support of a positive experience in the MC experience (Mishra and Koehler 2009; Prosser and Trigwell 2014).

It was necessary to develop pedagogical knowledge when stating what quality teaching is, and this process began by gaining a greater understanding of the educational perspective. As scholars, the emphasis on content knowledge is inherent through our research and postgraduate studies. The increasing demands of the neo-liberal education systems in western countries pressures teaching skills and abilities that often lack professional development. Although this is not the focus of this research, there was an impetus to gain postgraduate studies in higher education that provided a base to increase my pedagogical knowledge. During these studies and in conjunction with this research, I developed my teaching philosophy (Korn 2012) through research and reflection (written and oral). These studies and the remit of improving MC, called for me to explore my philosophy of continual learning (and teaching), and to extend my student-centred focus. I was keen to use technology and effective pedagogy to enhance the online experience but not at the expense of content knowledge. The *plan* stage focused on learning outcomes with TPACK reinforcing my teaching philosophy to create a balanced and practical approach.

Do – Technology, Pedagogy and Content Knowledge (TPACK)

Mishra and Koehler (2009: 17) advocate the expert teacher as able to ‘orchestrate and coordinate technology, pedagogy and content into every act of teaching’. Combining the need to develop and support teachers in the art and science of teaching, TPACK intersects and synthesizes the critical areas of technology, pedagogy and content knowledge (Mishra and Koehler 2009; Tee and Lee 2011). Maintaining an active balance is core to creating a positive student experience. As in face-to-face offerings, the online teacher needs to consider and focus on the overall learning objectives (Biggs and Tang 2011; Wang 2013). Offering assessments or other resources without a considered balance of TPACK can backfire, resulting in poor student evaluations, students employing a surface learning approach, and overall poor unit design that lacks an evergreen approach.

During the first offering of the unit, I was conscious of ensuring that the technology did not drive pedagogy. As a management scholar with high content knowledge, moving into the technology space of online learning was one of my weaknesses as was the pedagogical understanding. Pursuing studies in higher education allowed me the scope to reflect, review and critique my own perceptions of learning and within the context of MC. An example of this was a discussion with my mentors about my professional development in shifting to an online teaching focus. Despite the increase of online education, there are perceptions of online teaching being easy or ‘not real teaching’ therefore impacting my teaching reputation. However, through mentoring and reflection, and an enhanced understanding of pedagogy I was able to envision opportunities within the unique setting of MC. Similarly, after reflection and review with mentors (educational designer) of the ‘shiny new toys’ available (Koehler and Mishra 2009; Mishra and Koehler 2009) I started using ‘Collaborate’ (an online classroom platform) that comes with many bells and whistles. Through trial and error along with significant reflection of what worked and what did not work, as well as mentoring from the educational designer, I was able to optimise the experience for students. Other interactive online tools, were incrementally introduced across the ten Collaborate sessions of the unit. This included an informal 30 minutes prior to the formal recorded session which provided a safe environment for students to experience the whiteboard tools including the use of emoticons, chat board, and talking. Throughout the Collaborate sessions, the chat board was a mode of gaining insights into students on a personal and practical level. At students’ request, the use of video in the Collaborate sessions was important as students could see me which fostered a sense of community and increased both the effectiveness of the general communication. Only when students were on the microphone talking did they have the option to show themselves on the video – with

most opting out. The pre-session facilitated the interaction during the live sessions. Employing useful technology requires time and effort, where the art and science of technology is in balance with the expertise (content) and good practice (pedagogy) (Koehler and Mishra 2009; Mishra and Koehler 2006; 2009).

Study – Reflection on Feedback

Through a collective approach, knowledge was sought for social construction (Kolb and Kolb 2005; Kuusisaari 2014). To gain insights to the student learning experience, three open-ended questions were posed as a voluntary ‘health check’ (embedded link on the unit site). Students were asked: What works? What does not work? and Any ideas for improvement? Before this intervention, feedback was reliant on the formal process, which did not provide insight to the teaching team until six weeks after the end of the term (aggregated data). With back-to-back study periods, the next offering was half completed before relevant information and possible improvement of teaching and delivery processes was received. The ‘healthcheck’ provided 30 mid-term student responses. The subsequent manual content analysis highlighted three key areas for improvement. First, students asked for more interaction with the teaching team to build the sense of belonging, community, and enhance the social construction of learning (Lizzio and Wilson 2013). Students’ comments emphasised the need to increase the feeling of belonging: ‘More student involvement is needed’ and ‘It took me a long time to connect.’ This was of interest with as a sense of belonging is central to retention, especially in online and first-year cohorts (Atchley et al. 2013; Lizzio and Wilson 2013).

Second, several students offered suggestions for checklists, summaries and reminders. Comments such as ‘If there was a way to highlight/cross off everything we have done per chapter/task/every video we watch I think that would be great’ and ‘Accessing information and submitting tasks on the unit site is far from intuitive’ exemplified the students’ perspective. This aspect was of significant interest, so I started creating a checklist. Then with further reflection and review, the students’ feedback revealed a need for reinforcement about available resources – for example, the weekly planner and task alignment with the learning objectives could also act as a checklist however this feedback highlighted that this needed to be communicated to students.

Third, students found navigating the first weeks of the unit confusing and frustrating, through comments which included ‘a little hard to manage the blackboard Yammer and Collaborate (online) classrooms but i put that down to being new’ and ‘At first I was struggling where to find things in this unit’. In contrast, other students

provided positive comments on the unit organisation, support, and communication during this time: ‘I am impressed with the quality of the learning tools and resources provided. I will let you know if I discover any future barriers to my learning – great job.’ Through mentoring and further curious questions posed by my mentors that probed into the context, it was recognized that in the OUA environment, students experience multiple learning management systems, as their respective universities can host their units. The students in this unit are mostly first-year, and anecdotal experience shows that these nascent experiences are daunting when starting university study (Nadelson et al. 2013). Although diversity can bring depth in sense-making and understanding; ability, technological experience, along with the peer and social pressures (Whitehead 2012) increases the chance of failure (Lizzio and Wilson 2013). The educational design platform for this unit is an institutional choice. In reviewing, reflecting and consulting with my mentors and the educational designer, I targeted the first two issues, and the third issue of unit site navigation was recognised as an aspect that could be enhanced through clarity in communication.

Act – Learning Strategies of Interleaved and Distributive Practice

Attention and memory are necessary for enhanced learning (Vorhauser-Smith 2011). To increase knowledge using cyclical approaches, the redesign of the students’ experience began. Starting with interaction with my mentors and teaching team including an analysis of students’ comments followed by curious and at times challenging questions, the reflective process continued. Through my postgraduate studies, I explored the learning strategies of interleaved and distributive practices (Dunlosky 2013). The effectiveness, applicability and relevance of interleaved and distributive practices aligned with the continual learning approach (F) speaks to the issues of student–teaching team interaction (belonging) and resource awareness (Kuusisaari 2014; Dunlosky 2013).

Interleaved practice is an alternative to blocked practice (abcabcabc versus aaabbbccc), as learning is improved through non-consecutive, repeated and intermittent strategies that replicate life experiences (Taylor and Rohrer 2010). The many concepts presented in this unit, can be challenging for students. In contrast to isolating ideas, interrelating topics avoids students confusing related concepts (Szpunar et al. 2013). The learning outcomes of this unit are about developing students’ ability to critically evaluate the concepts of contemporary management through problem identification and argument resulting in a practical application. To do this, the students need to demonstrate an understanding of how the concepts relate to one another, and an awareness of when one concept may be more appropriate or effective than an alternative – critical thinking (Koris et al. 2016).

New concepts, terminology, theories and the transition to academic studies have an intrinsic potential for confusion. For example, transformational and transactional leadership are opposing concepts, when introduced together in this unit, misunderstanding can follow due to both being leadership theories and beginning with ‘trans’. An interleaved approach, where terms are presented, practised and applied discontinuously, can achieve better results in memory, retention and recall (Szpunar et al. 2013). An indication of improved cognition through utilising interleaved practice has been recognised (Dunlosky 2013; Roediger and Pyc 2012). Despite promising results and low cost (Roediger and Pyc 2012), interleaving is time intensive compared with blocked techniques (Dunlosky 2013). Opportunities for improved levels learning where students can collaborate, problem-solve and apply critical thinking are believed to increase understanding in the interleaved processes.

Interleaved practices include various problems with a mix of material within a single study session and have a natural affiliation with distributive practice (Dunlosky 2013; Roediger and Pyc 2012). Encountering material on several occasions over the term of a learning episode improves long-term retention compared with mass learning, cramming or close succession (Dunlosky 2013). Spacing or distributive strategies are suggested by Szpunar et al. (2013) to refocus students when they are distracted, thereby increasing attention, memory and recall for learning. Distributive methods offered the opportunity to present and interact with the student and unit material in different ways (Hattie 2013) and the opportunity to increase understanding (Kuusisaari 2014). Distributive practices have positive results (Cepeda et al. 2006; Hattie 2013) and Dunlosky (2013) rates this practice as highly effective for student-centred approaches to active learning. Despite these strategies taking more time, they are simple, effective, low cost and do not require sophisticated technological implementation (Cepeda et al. 2006; Dunlosky 2013; Taylor and Rohrer 2010). Distributive strategies used with interleaved practices provided academic support and benefits for student-centred approaches (Dunlosky 2013; Roediger and Pyc 2012) to target the issues of interaction, unit navigation and access to resources.

STAGE 2 – TERM 1, 2015

Plan and Do – Interleaved and Distributive Practices

Following further reflection and mentoring, an improvement strategy in the second stage combined distributive and interleaved approaches (DIA) to focus on the issues of student–teaching team interaction, and resource awareness (Table 1). First, to increase student-teaching, team interaction, and strengthen the sense of

belonging, topics were introduced each week through lectures, then DIA was embedded through a tutorial guide providing tutors with interactive exercises, discussion questions and video links to be posted in the respective tutor's Yammer (social media) group for each week. Students were encouraged to discuss this material in the chat-based forum while the tutor facilitated the group. Another DIA was a Yammer Drop-In Session, which was analogous to the on-campus tutorial. In this weekly online session, each tutor was 'live' for an hour to discuss the weekly topic and assessment items. Drop-in session attendance indicated the success of the approach, however, depended on student commitment with higher participation noted around assessment time.

Table 1. Interleaved and distributive processes applied practically and academically

A – Topics (introduced in Weeks 2–10)
B – Introduced in orientation video (Orientation Week)
C – Case study introduced and linked to topics (week 3)
A – Yammer (student) discussion on previous week's topic supported by video and weekly question
B – Highlighted examples of how to use Collaborate (Week 3)
C – Application of topics relative to case study – formative submissions (Weeks 4–7)
A – Drop-in session with the tutor
B – Attached to weekly announcement in Week 6
C – Application of topics relative to case study – summative assessments (Weeks 11–14)
<i>Legend: A = topics; B = weekly planner; C = practice</i>

Second, the weekly planner provided a summary of the unit assessments, topics, Collaborate sessions (online lecture), assessment dates, and other commitments that were immersed in the many other resources. To overcome this, the weekly planner was introduced in the orientation video (Orientation Week), highlighted in Week 1 through email, announcements and repeated with a follow up in Week 3. Collaborate sessions also reinforced the use of the planner with students recognising the benefits and encouraging the use with comments including: 'great tool'; 'have it on my desktop and cross off what I have done'. In addition, the unit's weekly announcement in Week 6 (Table 1) provided another reminder and link to the planner. The effectiveness of DIA was monitored through student feedback, and included the embedded 'health check' feedback survey.

Study and Act – Feedback, Evaluations and Continual Improvement

The feedback through evaluations evidenced the improvements across the 12-month study. In all four categories, the initiatives were embedded through the student-centred approach that enhanced the overall performance. Above-average results from the aggregated OUA feedback data in Term 1, 2015 exceeded expectations. The increased evaluation rankings within the unit compared with institutional disciplines of humanities and business in addition to comparisons with other OUA units. As an outcome of the DIA and the student-centred approach (Table 2) improvements were evidenced over the four areas of the student evaluation.

Table 2: Aggregated student evaluations over the 12 months in comparison with the institution and OUA with rankings ranging from 1 (lowest) to 4 (highest)

Category	Terms				Comparison - T1-2015	
Term and response rate	T2 – 2014 18.1%	T3 – 2014 20.8%	T4 – 2014 29.4%	T1 – 2015 37.6%	Institution 18.6%	OUA 17.3%
Tutor feedback	3.19	3.27	3.19	3.33	3.05	3.03
Unit design	3.25	3.21	3.15	3.29	3.10	3.10
Student skills and belonging	2.98	3.06	2.90	3.18	2.94	2.85
Overall	3.29	3.28	3.13	3.41	3.04	3.04

Although the feedback for this unit was consistently good, the outcome of 3.33 (out of 4) was 10% above all other OUA units for term 1, 2015. Resulting from the efforts put into student skills and developing a sense of belonging, a positive impact in this category resulted in a 3.18/4 ranking. From the initial continual improvement process in Term 2 through to the full implementation and feedback 12 months later, the 3.41 overall satisfaction provides evidence of marked enhancements over the time of this study.

To build on the success, Collaborate sessions were the next target for improvement. The *act* stage was to commit to the continual improvement philosophy. Several students commented on the need to tighten the

Collaborate workshops. These sessions are the primary ‘real time’ interaction between students and the convenor. For the convenience of working students, they are held in the evening and recorded for non-attendees. The ‘health check’ comments represented students’ thoughts, expressed in positive and negative views of the interactive

Collaborate sessions:

“The Collaborate sessions can be annoying as sometimes not a clear focus. Questions need to be moved to a more logical time so that the ISTJ people (just give me the info) are equally engaged in the sessions – otherwise I trail off and play on my phone.”

And in contrast, to this response:

“The standout for me was the Collaborate sessions. It was great (and the first time for me) that there has been any visual interaction with students and I found it extremely beneficial.”

These opposing comments show the challenges faced in large, diverse online units when the needs, personalities and learning styles of students push the boundaries of the educator’s TPACK. Further reflection and consults with my mentors and the educational designer, focused on the Collaborate session comments (see next section) which considered the balance of the learning objectives and our resources. As a result, PDSA provided further scope for ongoing incremental improvements into Stage 3 and the future.

STAGE 3 – CONTINUAL IMPROVEMENT ... FUTURE

Plan and Do – Incremental Improvement and Embedding

The need to reflect on and respond to students’ comments strengthens the iterative scholarly improvement process to ensure that the student-centred approach continues. After considering student feedback, the PDSA under my leadership aims to target the Collaborate sessions as an immediate improvement process. The student feedback in Stage 2, indicated a polarisation in this area with some students stating the weekly workshops are the best feature of the unit: ‘love the Collaborate sessions and the informal approach’ and the sessions ‘enabled us to engage with the tutor’. Others wanted ‘more than one collaborate session as the scheduled was not always convenient’ and the one-hour ‘Collaborate sessions were too long’, with others asking to ‘limit the non-relevant chatter’.

The plan is to continue with the DIA approach and expand the content, but not the duration, of the Collaborate sessions to include interactive exercises linked to the weekly topics. In addition to this ‘tightening up’

of the sessions, there will be explicit comments about the collective nature of the live sessions and how they are aimed primarily at the students in attendance. Recommendations and instructions on how to view the recordings and fast-forward through the ‘chatter’ will be included in the weekly emails/announcements to reinforce the workshop intent of the live Collaborate sessions. With topic recordings and other resources available, Collaborate sessions are the prime time to connect with students and develop a sense of belonging and community that is key to large online first-year students’ engagement and success (Lizzio and Wilson 2013).

Study and Act – Feedback and Continual Improvement

The research questions ‘How can the first-year online management student experience be improved?’ and ‘Why is continual learning a driver for student engagement?’ emphasised the importance of the method of action learning as an ongoing and continual improvement philosophy that needs constant attention (Zuber-Skerritt, 2001). This continual learning framework (F) epistemologically underpinned my teaching philosophy and practical connection of MC (A) through an action research methodology (M) (Symon and Cassell 1998; Hindle et al. 1995). In contrast, ceasing a practice when there is success exhibits a surface approach, whereby the continual improvement process is not implemented nor completed (Biggs and Tang 2011). Founded on embedding quality, PDSA is a iterative approach that strengthened the teaching philosophy of continual improvement; it is a journey employing a never-ending practice (Deming 1994). There is no destination. It is a dynamic process with stopovers that provide time to think, reflect, review, and potentially enjoy the successes along the way as demonstrated in all the stages.

The future potential for growth and development is limited by the teacher’s scope and capacity but is also susceptible to change at the unit, program, and school levels. The PDSA improvement process will be ongoing under my convenorship. In saying this, the student feedback and teaching team practices are dependent on what, why, how, and when the momentum is maintained. Through the reflective stages of this learning and teaching process, the knowledge I gained in postgraduate studies of higher education extended my learning to reiterate the constructive alignment. This knowledge has spiralled into my teaching team, given credibility, and ultimately recognition that has the sense of a meta-practice in continual learning for teaching.

Despite TPACK providing a practical balance for the MC experience at the unit level, the learning objectives need to drive the process. Where the research question defines the inquiry process, the learning

objectives are the focal point and what the students need to take away from the unit. At all levels, the unit content, resources and assessment need to be appropriate, suitable and constructively aligned to the learning objectives (Biggs and Tang 2011; Trigwell and Prosser 2014). The balance of TPACK and the embedding of continual improvement (PDSA) in MC provided the opportunity for reflection, review and learning for myself that subsequently enhanced the students' experience. This action research study has extended my skills, increased awareness and understanding of higher education in the MC context and holds potential for others to explore possibilities whilst ensuring a balance of technology, pedagogy and content. As determined in the aggregated data, the students were the benefactors of the improvements, however, on an individual level this journey was recognised with an insitutional award for Teaching Excellence (online).

CONCLUSION

Over the 12 months of this qualitative action research study, with the help of my mentors, I have shared the lived experience of enhancements and improvements in MC (A). The perfect storm of the large online first-year context provided challenges, yet it also proved that when a continual learning approach is embedded, substantial benefits can be achieved for both the educators and the students. Using the continual learning approach from the organisational development lens of PDSA (F) was a familiar process for myself and my mentors. Adding the TPACK pedagogical view provided a meta-practice to gain a deeper understanding and implement technology through pedagogical decisions. The social construction of our sense-making was built in the action learning sets to support the action research methodology (M) (Carr and Kemmis 1986). In summary, the action research (M) methodology provided the scope to employ a continual learning (F) approach to the area of concern (A) which was the context of MC. Learning and teaching is about a journey with episodes indicating success or time to change, adopt or apply. Despite the systemic limitations and scope of time, resources and institutional support, the engagement of the teaching team led by myself substantiated the benefits of continual learning and subsequent improvements for students. In this research I have been able to go beyond what was believed to be an effective approach to evidence and demonstrate through aggregated and qualitative student feedback the positive outcomes underpinned by a student-centred approach.

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