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Addressing student attrition within higher education online programs through a collaborative community of practice

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Abstract

Student retention is a key strategic issue in higher education affecting student experience, university funding, and reputation. It is critical for institutions to identify factors that impact upon student success, build effective strategies to enhance student outcomes, and respond to the emerging evidence-base of distance student engagement. The University of Tasmania has one of the highest attrition rates in Australia, at 28 percent for commencing bachelor students. Studying by distance is a known risk factor affecting attrition and it is vital that we understand the challenges that 'at risk' distance students face when they engage in higher education and how to best support them for success. This study describes a Community of Practice approach that identified four key challenges to reduce student attrition in online degree programs: (i) the importance of knowing your students, (ii) the difficulty in getting reliable data, (iii) the need for 'belonging' for online students and early, meaningful engagement, and (iv) student access to known academics. With no magic bullet to reduce student attrition rates, we present a range of targeted and connected early interventions designed to support students to succeed and enhance their learning experience.

1. Introduction

In the current competitive and globalised higher education (HE) market, student retention and success are key strategic issues for higher education institutions with retention rates affecting a university's reputation and long-term financial security. While overall student load is one measure of an institution's success and attractiveness in the market, today's performance indicators are increasingly about student outcomes; in particular, student retention and completion. One measure, 'adjusted student attrition' has recently been directly linked to ongoing funding in Australian Higher Education. Adjusted student attrition describes students who commence study but don't progress in the same or a different course in the following year.

The University of Tasmania has for many years implemented a range of both curricular and co-curricular initiatives and programs to decrease student attrition rates. However, with the rise in popularity in distance learning, primarily online learning, student cohorts are shifting. This shift means that retention and attrition strategies need to be refocused to take into account the diversity of the student cohorts, and the modes of learning (particularly distance education) and breadth of curriculum that are offered. This study describes how a nascent Community of Practice (CoP) challenged with addressing student attrition in online programs has been able to learn from each other, has resulted in cross-fertilisation of ideas and strategies, and has started to inform change at the institution level.

2. Literature review & theoretical framework

General context of higher education in Australia

The last five years have seen a significant transformation in the higher education landscape in Australia. This has been due primarily to the 2012 lifting of government-prescribed 'caps' (limits) on the number of government-subsidised students that universities can enrol each year (Kemp & Norton, 2014). In effect, this policy change has meant that higher education institutions, until only recently (due to the re-introduction of a capped system), have had the freedom to set their own enrolment goals and limits. In addition, there has been a strong global and national push to increase the participation of groups currently under-represented in higher education (Mok, 2016) resulting in the increased number of students from not only culturally and ethnically diverse populations, but also from disadvantaged and minority groups (Calderon, 2018). Consequently, student enrolments across Australia have increased as has the diversity of student cohorts, particularly those from non-traditional backgrounds. However, with the re-emergence of the capped system and introduction of a performance-based commonwealth funding model, Australian universities have been directed to "take responsibility for the students they choose to enrol and ensure they have the capabilities and support to succeed" (Birmingham, 2017). Student attrition represents a loss to government, institutions, and students themselves and there needs to be a sustained effort to improve retention and completion rates. It is therefore critical for Australian higher education institutions to identify those factors that impact on student retention and attrition and build effective practices and support strategies to enhance student outcomes.

Retention and attrition

In broad terms, retention refers to students who continue in higher education from one year to the next, to the point of course completion, whereas attrition is about students who leave higher education prior to completion of their studies. Specific definitions and calculations of retention and attrition rates are slightly more complicated, and methodologies vary around the world. In Australia, the Government Department of Education and Training (DET, 2018) defines retention rate as the proportion of commencing students who were enrolled in a course in a given year and did not complete in that year and continued in their course the following year, while attrition rate is defined as the proportion of students commencing a course of study in a given year who neither completed the course in that year or the following year, nor return to study in the following year. More recent DET calculations have also used 'adjusted' retention and attrition rates, which takes into account student transfers between courses and institutions (DET, 2018).

One approach to understanding student retention and attrition focuses on 'at risk' student cohorts that have a higher likelihood of failure and the identification of demographic and personal factors that contribute to the likelihood of students dropping out, for example: having a low socio-economic background (SES), living in regional and remote locations, being members of Indigenous populations, having a disability, being of mature age, and being first in the family to attend HE study (e.g. Roberts, 2011; Rose-Adams, 2013; Yorke & Longden, 2008). Personal factors, often related to one or more of the demographic factors, that place students at high risk of withdrawing from their studies, include: financial difficulties, family and caring responsibilities, paid employment commitments, low self-confidence, and mental health issues. Certain enrolment characteristics have also been identified as risk factors, including students who study part-time, those who study via distance or external education and enrolment choices (i.e., degrees, subjects) that students make when in higher education (e.g. Bawa, 2016; Lee, 2017).

Another approach to understanding student retention and attrition is to focus on the student experience, the quality of students' institutional experiences, and their level of integration into the academic and social systems of the institution. Lizzio and Wilson (2010), for example, identified five areas of student need that contribute to students' satisfaction, engagement, and persistence in higher education, what they termed the 'five senses of successful transition': a sense of capability, connectedness, purpose, resourcefulness and culture. Students well prepared in this regard are more likely to be successful learners and persist with their studies compared to their counterparts. Related to this approach is Tinto's (1993) Student Integration Model which addresses institutional conditions for student success and proposes that the more engaged and assimilated a student

is in their institution's academic and social environment, the more committed they will be to the institution and to their own academic goals and study. These commitments, in turn, are perceived to have a strong positive influence on student persistence and retention. These approaches provide useful lenses through which to understand and analyse the higher education student experience and to conceptualise factors that may act as enablers or barriers to student retention and success.

Growth in distance learning

Distance learning in HE has seen significant worldwide growth in recent years as HE institutions seek to extend their reach to students located outside of local geographic areas and students seek more convenient, flexible, and self-paced options for study. In the United States, for example, Seaman, Allen & Seaman (2018) report that the number of distance students increased by roughly 17 percent across the years 2012 to 2016, with the year-to-year percentage growth also increasing over this period (3.3 % for 2012/2013 to 5.6 % for 2015/2016). A total of 6,359,121 students commencing study in 2016 engaged in distance education in the USA, which was 31.6 percent of all student enrolments. Nearly half (47 %) of those students took exclusively distance education courses, while 53 percent engaged in blended study, a combination of distance and campus-based courses. A similar pattern of distance education growth has been reported across many countries in Asia, Africa and the Middle East (Zawacki-Richter & Qayyum, 2019), Australia (DET, 2018; Stone & O'Shea, 2019), Canada (Donovan et al., 2018) and Europe (Carlsen et al., 2016). Further, recent statistics in Australia (DET, 2018) and the US (Allen & Seaman, 2010), indicate that growth in the number of higher education students engaging in distance learning is increasing faster than for those studying on-campus. This rapid growth in distance education, while extending the possibility of higher education to more diverse student groups, presents many transformational challenges to institutions in the ways in which they strategically plan for, develop, resource and deliver education that meets the changing needs and preferences of today's higher education students.

Technology and distance education

Unlike the traditional campus-based, classroom model, in which learning typically occurs in a specified location and fixed timeframe, distance learning affords students flexibility with respect to both space and time. The contemporary paradigm for distance education is e-learning (also known as online or digital learning), which uses online tools and networking mechanisms to "create, foster, deliver and facilitate learning, anytime and anywhere" (Liaw, 2008, p. 864). Email communications, videoconferencing, whiteboards, chat rooms, blogs, wikis, and podcasts, are all part of today's distance education, providing students with opportunities for both real-time (synchronous) and asynchronous learning experiences outside of a physical classroom. The increasing use and range of available online technologies can provide high-quality distance learning that is engaging, interactive and increasingly personalised.

The distance education student population

Distance education has been an important mechanism for widening access and participation in higher education for a diverse range of students, particularly those previously under-represented. Many of these students are juggling multiple responsibilities such as employment commitments and/or caring responsibilities, in addition to pursuing their education. Students who live in rural and remote areas, from low socio-economic backgrounds, living with a disability, Indigenous, mature-aged, and students who are first in their families to enter HE are all strongly represented in online distance courses (Stone, 2016; Stone & O'Shea, 2019). There is a large body of evidence showing that non-traditional students often lack the academic persistence to persevere with their studies and tend to drop out of academic programs prior to completion at a greater rate than their mainstream counterparts (Brubacher & Silinda, 2019; DET, 2017; Simpson, 2013). In Australia, distance education students are around two and a half times more likely to withdraw from higher education than campus-based students (DET, 2017a, 2018), which has been related, at least in part, to the composition of the distance education student cohort (Stone, 2016).

Challenges

Distance education is both an enabler and a challenge to both higher education institutions and students. While it enables universities to reach widespread and diverse student populations, it also affords many challenges, particularly in relation to creating a culture and providing infrastructure that enables and supports distance education, and adjusting curriculum, pedagogy and academic policy to meet student needs and expectations and provide equitable learning opportunities across the different delivery modes (e.g. Moore & Greenland, 2017). Other significant challenges for higher education institutions include keeping pace with technological advances in e-learning, providing effective and equitable curricular and co-curricular support and development opportunities to students who rarely or never connect on-campus, and accommodating and retaining the diverse student groups that are attracted to distance education.

For students, the first challenge is often one of digital literacy – which can significantly add to the cognitive load of also learning a new discipline. Concurrently, distance learning means taking responsibility for your own learning and developing a strong sense of autonomy (Peters, 2010), without which students can struggle and drop out (Rush, 2015). One of the most reported challenges is the feeling of isolation, and the difficulty in developing a sense of belonging and connectedness to other students, staff and the wider institution, particularly for students from non-traditional backgrounds (Kember et al., 2019; Lambrinidis, 2014; Tinto 1975, 1987). This sense of isolation is directly related to the 'flexibility' offered by distance learning, rated in one study as the worst and the best aspects of distance learning respectively (Rush, 2015). Croft et al. (2010) importantly identify another form of isolation - intellectual isolation – occurring through a lack of real contact with staff and other students to progress ideas, explore and reflect on

knowledge. Students attracted to the flexibility of distance learning, often choose to study part-time, which is another known risk factor for attrition (Cherastidtham et al., 2018; Norton et al., 2018). The difficulty in balancing part-time university studies with other responsibilities is exemplified in the Quality Indicators for Learning and Teaching National report (QILT, 2019). For undergraduate students, after health or stress reasons, for which 45 percent contemplate leaving, the next most common reasons are study/life balance (30 %) and the need to engage in paid work (27 %: QILT SES National Report, 2019, p. 21-23). In undergraduate health programs, it has been demonstrated that paid employment of more than 16 hours per week is detrimental to academic performance, results in missing scheduled classes and correlates with poorer engagement (Reyes et al., 2012; Rochford et al., 2009; Salamonson et al., 2012). Students' abilities to manage these challenges can greatly influence their learning experience, academic achievement, and subsequent persistence in higher education (e.g., Greenland & Moore, 2014; Tyler-Smith, 2006).

In the Australian context, but applicable elsewhere, Stone (2016, 2019) published a research report that articulates 10 National Guidelines for Improving Student Outcomes in Online Learning, with the aim of improving the sustainability of online learning as a viable and inclusive model of education. The 10 guidelines can be thematically organised into four key areas: (1) purposeful online learning design (guidelines 4, 5 and 6), (2) tailored student support for and communication with distance students (guidelines 7 and 8), (3) comprehensive knowledge and understanding of the diversity of online cohorts (guideline 1), and importantly, a shift in (4) institution-wide change and adaptation for education delivery for distance students (guidelines 2, 9 and 10). Each guideline articulates key principles and includes practical examples of how higher education institutions can translate each guideline into action.

The University of Tasmania context

The University of Tasmania holds a unique and distinctive position in an Australian higher education context in that it is the only university in an island state of Australia. This has afforded the University certain benefits and also distinct challenges. Tasmania comprises a regional and dispersed population, with some 58 percent of the population living outside the greater capital city area. Recent estimates indicate that less than 60 percent of young Tasmanians complete the 12th year of secondary education, compared to the Australian average of around 80 percent (ACARA, 2019; TASC, 2017). These demographics have presented the University with the enduring and fundamental educational challenge of attracting and retaining students.

The number of students enrolled at the University of Tasmania has increased steadily over recent years, from just under 27,000 students in 2012 to 36,326 in 2019, concurrent growth has occurred in the number of courses (undergraduate and postgraduate degrees) and units (subjects) offered. Most significantly, the commencing student population increased more than 50 percent over this eight-year period and includes students from traditionally under-represented groups (as described above). Accompanying this is an increase in demand for distance learning. In 2015, for example, 39 percent of student course enrolments were via distance which increased to 46 percent in 2019. In some disciplines, distance education has now become the dominant form of learning. In 2019 for example, 72 percent of all course enrolments in the College of Health and Medicine and 52 percent of course enrolments in the College of Arts, Law and Education were via distance mode, with a further 25 percent of course enrolments in Arts, Law and Education being via blended learning (combined distance and on-campus study). Interestingly, and not surprisingly, this increase in distance enrolments has coincided with a progressive decline in the University's student retention and an increase in attrition rates that remain well above the national average.

Inevitably, institution-wide change and adaptation to trends such as distance learning can be slow to develop and implement, often associated with pilot phase testing and protracted, stepwise implementation. Indeed, with competing priorities and fixed resources, student attrition is but one priority amongst many, such as growth, research excellence and internationalisation. In the meantime, staff is presented with opportunities to respond to attrition in their own programs. These responses are often at a smaller scale and include targeted interventions to increase student engagement and retention in particular student cohorts. The challenge then becomes how to collect and coordinate this bottom-up approach, to inform institution-wide change. For the past decade, much has been written about the creation of professional communities of practice as a vehicle for establishing collegial relationships and for building capacity for change. Wenger-Trayner and Wenger-Trayner (2015) describe communities of practice (CoP) as "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (p. 1).

While the concept of community of practice has been around for a long time, in recent decades such professional learning communities have found a range of practical applications in business, organisational design, government, education, professional associations, and civic life. Across all applications, the CoP model has been promoted for its potential to bring together diverse groups of people, inspire cross-disciplinary learning, and to enable grass-roots level change in an institution or organisation. In the context of HE, the use of the CoP model has extended across academic teaching groups, research groups, organisational change initiatives, and professional learning and development (e.g., Pharo et al., 2014; Warr Pedersen, 2017). While sometimes represented by different terminology, including teacher networks, faculty learning communities and communities of interest, the sentiment of the CoP model as a collaborative learning experience has permeated the breadth of approaches used.

3. Method

We applied a CoP approach using semi-structured discussions (context, challenges, approaches/interventions, evaluation) to probe different case studies that address student attrition in online programs across the University

of Tasmania. Members of the CoP came from different disciplines (Nursing, Dementia Care, Education, Arts, central academic division), campuses (four), and held a variety of appointment types and levels in both professional and academic roles. Over 10 weeks a series of 90-minute discussions were held, using Skype for Business software, to probe the context and challenges of addressing student attrition in different academic and professional capacities, across diverse degree programs. Thematic analysis (Braun & Clarke, 2006), was used to theme data to identify key challenges and potential solutions that could be shared institution-wide, to address student attrition. This was followed by several workshops and meetings with academic and professional staff across the university, including key senior leadership staff, to disseminate our findings, with the intent to drive institutional change to reduce student attrition in online degree programs.

Case studies were drawn from fully online and blended (mixed mode) programs including the Bachelor of Education, Bachelor of Dementia Care, Bachelor of Arts, Bachelor of Education, and a collection of Postgraduate Nursing programs. Within specific case studies, data included were drawn from large, de-identified student cohorts across multiple programs and offerings. Student numbers and/or demographics are identified at the time of discussion of each case, where relevant. Bachelor of Dementia Care and Bachelor of Education student progression data has ethical approval for research purposes, via the University Social Sciences Ethics Committee (Reference numbers H0013822 and H0017932).

4. Analysis and Discussion

Historically, in the second half of the University's academic and calendar year, strategies are implemented to support the return and engagement of un-enrolled students who commenced their studies in the previous year. Depending on the size and nature of the degree program, 'attrition lists' of students can be of variable length. In one undergraduate health degree, one such list contained 511 names. In June one year, all 511 were emailed and encouraged to enrol in Semester 2 offerings. The list was triaged and the 128 students who had successfully passed a subject in the previous calendar year were also phoned. Three contact attempts were made, and unsuccessful contacts followed up with a final email. This activity took four full days for one staff member to carry out; most students did not answer the phone on the first call, 25 students thought they had withdrawn from the program, 100 appreciated the contact but there was no clear outcome. Reasons cited for no further enrolment included illness, change of employment, or not the right degree at the right time. In all, 10 students went on to enrol in Semester 2 of whom only 5 were actively engaged in their study half-way through the semester (Figure 1).

This approach, whilst targeted in nature, proved to be an inefficient, ineffective strategy to reduce attrition in the degree program. By the time students had their names added to this 'attrition list', it was too late. This case exemplified the collective thinking of the CoP – student attrition needs to be reframed as an early intervention activity. Using case studies across the institution, we identified four key challenges to reduce student attrition in online degree programs at our University that can be used to inform institutional change and direction: (1) the importance of knowing your students, (2) the difficulty in getting reliable data, (3) the need for 'belonging' for online students and early, meaningful early engagement and (4) student access to 'known' academics.

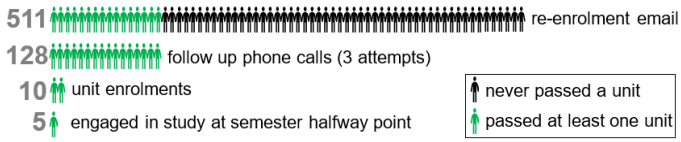

Figure 1. Communication strategy to target students on an attrition list in an undergraduate degree program.

Knowing your students

Established models of retention and progression in university study highlight the importance of a range of measures including personal and family characteristics, academic performance measures, institutional and course factors, and factors associated with student engagement with study. Most attrition models focus on known factors at the time of commencement of study, however, it is becoming increasingly appreciated that 'in semester' factors also contribute to attrition, with acknowledged complexity of associations between these factors (Cherastidtham et al., 2018; Kember et al., 2019).

Recent business intelligence strategies to probe attrition at the University of Tasmania, have involved institution-wide analytics of student progression and retention (Nathalie Henning, personal communication, August 2019). Five key indicators of attrition were identified in undergraduate students who had recently left the university: studying by distance, part-time enrolment, increased age, low or no ATAR (university entrance score based on school completion) and being enrolled at a smaller, regional campus on the northwest coast of Tasmania. However, at the degree program level, the apparent risk profile of students may differ markedly from national or institutional averages. For example, within the Bachelor of Arts (BA) cohort at the University of Tasmania (2015-2017), higher ATAR on-campus students consistently had an attrition rate of approximately 21.5 percent in the first year of study, as compared to a rate of 9.3 percent for the mixed-mode cohort. Responding to the phenomenon of attrition for this cohort requires exploring the particular pressures faced by fully on-campus students in this course, the specific teaching framework in place in first year Arts units, and tailoring engagement programs to these very local factors as much as to generally recognised factors of higher risk. Another example is provided by the Bachelor of Dementia Care (BDemCare) at the University of Tasmania. This course was designed with the non-traditional learner at the fore, is front-ended with foundation level 'skill building' units, included student-led curriculum development from the outset to identify skills and knowledge gaps, contains flexible assessment strategies including both soft and hard

assessments, and multiple exit points (Diploma, Associate Degree) to support this cohort in the transition to Higher Education (Canty et al., 2015; Goldberg et al., 2015; Kelder et al., 2013). This large enrolment course has a predominantly non-traditional student cohort - markedly different to school leaver demographics – with 77 percent aged over 40 years, 93 percent female, 91.2 percent studying part-time, 21 percent of student from low SES backgrounds and 41 percent from regional/remote areas. Despite considered learning design and tailored approaches, attrition remains above the institution average in this program. Analysis of student progression in foundation level units found a 'critical path' phenomenon with a particular unit in the first semester of study, with 90 percent of students passing that unit then continuing to pass the remaining seven first year units, as compared to 7-30 percent completion for students who failed that unit. Here general risk factors are much less important as guides to action than close examination, revision, and support of that pathway.

Even where local results reflect the patterns of risk identified in wider studies, care has to be taken in interpreting and acting on this. The courses considered by this CoP have online cohorts (and in some cases are entirely online), and many have significant mature age student cohorts too. Study mode and age are regarded as factors of higher risk both in national studies (DET, 2017) and our own institutional analyses, but in our experience of these students, their difficulties do not necessarily stem from trouble with time management, difficulty with technology, trouble with integration, or other commonly cited factors that broadly point to a loss of agency in dealing with university and online study. In conversations, including some structured interviews with selected students in the BA, it is clear that students are often well acquainted with tertiary study, yet lead busy lives, and consider current studies as a form of enrichment akin to other forms of social or personal engagement. In such cases, withdrawal from the course need not be accompanied by a subjective feeling of failure or dissatisfaction, but rather is simply an act of autonomous decision. Similarly, for BDemCare students, personal motivation to study is high - most often attributed to current employment in the aged care industry, or as unpaid family carers. Students in this course tend to select individual study pathways, and when personal circumstances change, or a sense of fulfilment for study is reached, they no longer continue to study, irrespective of defined completion points in their degree. For these, and similar cohorts, it becomes important to consider the definition of 'success' in HE – where success is more closely linked to learning, unit completion, and personal satisfaction rather than reaching defined exit points or degree completion. We note that this phenomenon is acknowledged in some national studies of attrition (e.g., Norton et al., 2018), and it suggests some caution about moving immediately to a deficit model to explain the causes of higher risk cohorts. In this case, for instance, courses with especially large numbers of students fitting the profile of the autonomous learner are likely to see limited improvement in attrition statistics if measures focus on teaching design and skill development; instead, it would appear that a focus on true flexibility of online study (including flexibility in semester dates and due dates) would be more likely to enable students to remain engaged in Higher Education.

In 2019, professional staff in the central academic division 'Student Success' team paired with academic staff to deliver a coordinated early intervention program across the institution. Using Business intelligence reports to identify units with large numbers of 'at risk' students, or units with high failure rates, professional staff met with relevant academic staff to hold conversations to identify critical points or 'hotspots' in the unit. Working together, professional and academic staff generated a suite of phone interventions for targeted units, aimed at students considered 'at risk' due to behavioural factors such as non-attendance, failed assessment, failure to submit. As such, the nature and timing of the phone intervention were tailored for specific cohorts within defined units and courses. A total of 11 interventions across 75 units of study targeted 3 715 'at risk' students, with 52 percent of students being successfully contacted by phone to offer supportive advice and appropriate referrals. More students (11.2 % more) who engaged with the Student Success Unit Interventions passed their unit and fewer (11.0 %) failed their unit compared to students who did not engage with the interventions ($\chi 2$ (1, 3,799) = 69.63, $p < 0.01$, $\varphi = 0.135$). This forms a good example of a collaborative intervention between professional and academic staff that is student-centred, and finely tuned to distinct student groups.

Difficulty in getting reliable, institution-wide student data

Central to the clear need to understand individual student cohorts is the need to be able to easily and efficiently access reliable data to inform interventions. The University of Tasmania is not atypical in that a collection of bespoke software programs are used to collect student data across the student life cycle – stretching from separate software used to receive and process applications for study, student management systems that house course progression data, client relation managers (CRM) used to electronically track and monitor communications, the learning management system called 'MyLO' (My Learning Online) through which students access their course materials with embedded learning analytics functionality, and then an array of email correspondence with academic and professional staff and teaching records that may exist offline in word or excel files on individual staff computers. In general, it would be fair to say that these systems are not well integrated, and whilst fit for purpose in some ways, institution-wide data becomes siloed where better integration of all systems if connected, could better inform the puzzle of student retention.

There are established and emerging models of student retention that can calculate a student's risk profile for success, all of which depend upon reliable data collection. One example is at the Open University in the United Kingdom, where OU-Analyse software has been developed that integrates over 70 identified 'key factors' – both static factors (identified at the time commencing study) and changing factors during the academic year that can predict, with alarming accuracy, the outcome for students in different programs (Herodotou et al., 2020). Efforts at the University of Tasmania to achieve a similar, nuanced approach to understand specific student cohorts, that aim to significantly

impact university retention rates, are also understood and need to be institution-wide in scope, probing all levels of collected data. They need to be informed by hard data in both the detection of students at risk and in evidencing impact. To realise this efficiently, interventions must be underpinned by (1) quality, early risk indicators, deliberately structured into the curriculum; (2) large scale, centralised, real-time data collation at the student level to facilitate proactive, holistic intervention of those at risk of attrition or poor academic progress and (3) a common means of viewing previous and recording current interventions across all staff undertaking them, to facilitate coordination and enable consistent evaluation and quality improvement.

An example of where methodical data collection from a range of data sources has proved fruitful is in the analysis of student cohort success in the BDemCare. In this example, large spreadsheets were collated using data from the student application systems (demographics) student management (course progression) and MyLO (learning management system) which was then mapped to a database housing student consent to participate in research. The purpose was to establish if there was any evidence for the accessibility in learning design of the online degree in catering to a diverse cohort of students, with and without previous learning experience. The success of 65 students from the first student intake into the program was investigated after completing 15 units of study (approaching the completion of year two of a three-year degree). All students resided in Australia and were evenly spread between major cities, inner regional areas, and outer regional areas. All but two were female and most were over the age of 40. These students formed two even groups – those with experience of University study and those without. All students passed each of the units they completed on their first attempt, some making use of soft assessments offered in their foundation units (a second chance to meet the learning outcomes). There was no statistically significant difference in final unit grades between students with previous university-level experience compared to those with no university experience in 12 of the 15 units. Students with university experience performed statistically better in three units (in units 7, 8, and 13 in sequential order, final grades 5.4 ± 0.89 % higher). The equivalence of final grades for both student groups confirms a program of study that enables success for non-traditional students (Goldberg et al., manuscript in press).

In the absence of more streamlined data collection and access, the efforts of our CoP have been to short circuit the wider institution, and to design and present early, meaningful activities that are used to welcome students and generate a sense of belonging in their course, and which can also provide an early point for identification of struggling, or non-engaged students, within the context of the course that they are enrolled.

Early meaningful engagement and sense of belonging

Quality teaching practices in fully online courses include activities that promote engagement in the learning environment at a unit level, without ignoring what the broader university learning environment can offer. The learning approach supports student retention through 'constructions of capability to belong' (Burke et al., 2016, p.19) which builds confidence and competence (Carroll-Meehan & Howells, 2018). Capability attainment in online learning environments support a sense of belonging when students have greater awareness of their strengths within a curriculum, and social relations are established. Transition into a university is important in the student lifecycle and requires well-constructed orientation, teacher, and professional support linked to the psychological and sociological aspects of wellbeing (Vayre & Vonthron, 2016). First-generation university attendees may lack the cultural practices to successfully manage transition to higher education (Carroll-Meehan & Howells, 2018) with those beyond the transition period continuing to require human contact which may be lacking in fully online units of study. Learning designs, therefore, need to address engagement pre-commencement of the degree and during the semesters of study.

The School of Nursing, University of Tasmania provides a very successful distance orientation space for its postgraduate students. It is offered within the same learning management platform (MyLO) which students subsequently use to complete their studies. The unit is available two weeks before the start of the semester and is accessed by a proportion of newly commencing students. In this 'low stakes' space, free from formal assessment, the learning community is established early and continues through transferrable learning design activities embedded in core units across the semesters. The unit is minimally staffed, and interactive activities are provided, including social spaces for online discussion, academic writing development support, and the opportunity to submit a short, written assignment and receive feedback using online mechanisms typically used in the upcoming core units. Despite being very time-intensive in terms of 'staff hours', this space provides a valuable welcome to new students and provides the opportunity to meet fellow classmates ahead of the first day of study.

Similarly in the BDemCare, a year-long MyLO unit called 'Your Common Room', designed and run by student support staff, serves as both an orientation space and offers on-going student advice (course progression, discipline-specific how to guides, etc), learning skills resources (academic skills videos, quizzes, interactive activities, etc) and access to staff. Students are invited to access this space at the time of accepting their offer to study. Scheduled announcements and resources are highlighted at different times of year, such as online orientation webinars using virtual classroom software, enrolment advice, academic integrity games and videos early in the semester, help with essay writing skills prior to due dates for academic essay assignments and graduation ceremony dates. Resources and links from 'Your Common Room' are also embedded within the degree units during the semester, offering students relevant and timely assistance in their studies in line with the subject materials and assessments. Similarly, student support staff are sometimes 'embedded' within the teaching space, seated alongside academic staff in virtual classroom sessions where they contribute to discussions of assignment expectations and relevant skills development.

Both examples highlight the approach of using the learning management platform to offer relevant online orientation and support within the discipline, contributing to a sense of belonging for online students. What they don't offer is a more general sense of belonging to the wider University community. Orientation activities for campus-based students differ in that they are focused outside of the classroom spread across campus in the library, social spaces, clubs, societies, bars and eating areas with multiple opportunities to meet other students and staff. Without a designated 'distance or cloud campus', generating this sense of connection for distance students, to the University campus and community, is challenging.

In late 2019, the Student Success and Retention team developed an institution-wide online orientation site embedded within the university website, for all distance students at the University of Tasmania. The collaborative sharing from our CoP, ensured that this site embedded and linked to the degree- and College-specific online orientations that were already in place, and also provided examples for other disciplines to build similar offerings. This is an important first step to welcome and integrate distance student cohorts into the wider University community.

In 2017 the University of Tasmania mandated the use of two 'student engagement activities' in every subject by week 4 of the semester, for both on-campus and off-campus students. Completion of these activities needed to be recorded in the online grade book, with the intention that these activities could be monitored centrally, and across the institution. Teaching staff was responsible for implementing the activities and monitoring completion. Students who did not complete these activities were targeted for extra support and communication. This strategy has worked to varying degrees and can identify and proactively contact non-engaging students at risk of failure or dropping out. It is most successful when activities are meaningful and authentic and not perceived by students as hoop-jumping exercises. The main challenge has been in being able to centralise data collection in a systematic and standardised way. Other strategies that we have used as a CoP include personalising aspects of student learning within the curriculum so that students can retain their identities as individuals and feel connected to teachers and the broader community of learners. Examples that have been used include, contacting students who received low grades in assessment tasks or did not submit work offering support, using learning analytics to identify struggling students, and scaffolding early low stakes assessment task. Some staff offers flexibility in choosing assessment topics and even assessment formats, allowing students to work to their strengths whilst still meeting intended learning outcomes in both knowledge and skills. Others facilitate the process of sharing first assignments with a peer, for peer feedback ahead of final submission which helps to create a bond between students. Voice or video-recorded feedback against assessment tasks is also used to personalise learning, however, it is an example of unidirectional information transmission rather than dialogue (Mahoney et al., 2018).

One graduate of Education recounts her online learning experience, enjoying the flexibility to study around her life and work and importantly she describes her units as being "built around peer support, and people that I 'met' in that course, (they) were people that continued to work with me throughout the following units, and we built a community, we had a community of practice within the online platform. Those people became my peers, my friends, my colleagues." (Mackenzie; Life Matters, 28th February, 2020). This level of positive experience can be pivotal in making students feel welcome, part of a community, and motivate them through to degree completion.

Access to 'known academics'

Students need to feel part of an educational workplace culture that values them, their instructors, instructional designers, and administrators - all working together to facilitate a successful online learning experience (Roby et al., 2013; Stevens, 2013; Yoo & Huang, 2013). It is important therefore that online students feel a sense of connectedness with not only other students but also their teachers. Online students should be offered the opportunity to get to know teaching staff in a way that emulates drop-in sessions after on-campus lectures, or open-door appointment times. Generating a rapport in this way, between teacher and student, builds a relationship of trust and respect, and should be considered vitally important to maintain motivation and engagement with online study. One way to establish this relationship is by using video. As an alternative to in-class lecture recordings, or 'talking PowerPoint' lectures, a small investment in videography equipment and software can lead to the generation of laboratory, workshop, or 'on location' recordings of teaching sessions that allow students to see, hear and learn from known academic staff. For example, in a neuroscience unit in the BDemCare, a variety of filming sessions, including in laboratory and museum settings, were created to enhance the online learning experience (Figure 2). As effective representations of the live classroom (Smith & Boyer, 1996) these vignettes can elicit discussion, develop knowledge, challenge thinking, foster problem-solving, promote decision making, and initiate reflection (Herbst & Chazan, 2015). With careful planning, and avoiding reference to time and specific dates, these resources can be used across multiple offerings of the unit. Where units of study move between staff, short, regular 'talking head videos' can be used for 'housekeeping' announcements and reminders, audio feedback provided for assessments and live virtual classroom sessions offered to allow for interactive communication sessions – all of which offer opportunities for current teaching staff to establish a personal presence in the online space. Student advisors and learning skills staff can be invited to participate in these sessions, sitting alongside the discipline expert, giving students the impression of a team approach to teaching, making it easier to reach out for help to a familiar face when needed. Students respond positively to the inclusion of varied video formats"…the personal contact in the interview conversation seems to make learning very much easier for me" and "…very impressed with the museum visit! This especially cemented some of my learning as I could see the actual diseases/issues that we have been studying and hear these described in the

language we are learning…I felt like I was really there." (Canty et al., 2015). End of semester anonymous student surveys indicate almost unanimous agreement (via Likert scale) to the statements, including: 'the learning experiences (98.36 % agreement) and resources (98.33 % agreement) help to achieve the learning outcomes' and 'the quality of teaching helps to achieve learning outcomes' (98.33 % agreement; unit CAD004, 51 % student response rate, 61 responses).

Figure 2. Examples of different video formats that create a personalised learning space and effective teacher presence in an online subject about the nervous system. Examples include teaching with plastic models of the body, collegial discussions with potted specimens in a museum setting, outdoor 'on location' filming, discussion in the laboratory, sharing 'neuroscience art in pictures or in the gallery setting (top-bottom, left-right).

At the conclusion of each semester, the University of Tasmania Academic Progress Review (APR) evaluates the academic results for all students providing a mechanism to reach out to underperforming students. Students are placed into one of four categories: Good Standing, Supported (as a first intervention point), Conditional (with enhanced support) and finally Exclusion. The University strives to have all students achieve and maintain Good Standing but recognises that factors such as life circumstances and unexpected events out of student control can impact study. In general, centrally managed professional staff manages the process of contacting students who have left Good Standing to offer an appropriate level of support. For example; in one undergraduate health degree, 31 students identified as 'Conditional' were emailed by student advisers and invited to complete a questionnaire to help inform a personalised support plan. In this example, only four students responded (12.9 %).

A more targeted approach, with evaluated positive effects, is used in the School of Education which focuses on 'Conditional' students with a 'four-step process', underpinned by the key elements of personalisation (Step One: Winters, 2014), mutual understanding and agreement (Step Two: Mercer-Mapstone, Marquis, & McConnell, 2018), accountability (Step Three: Carpenter, 2013; Cook-Sather, 2010) and monitoring of progress (Step Four: Lieutenant, 2018). Step One includes a personal email from an academic staff member known to the student, inviting the student for a conversation. This deliberate approach helps to demonstrate care for the student, increases the likelihood that the student knows who is making contact with them, and ensures staff has an in-depth understanding of the degree program (Crosling et al, 2009). If there is no response, a follow up email and personalised SMS text message are sent. A phone call is used as a final contact attempt.

Step Two includes a face-to-face meeting between student and staff, with a willingness of the academic staff member to travel to meet each student in person. Where this is not practical, phone or Skype meetings are arranged. The primary focus is to offer the student an opportunity to share their perspective and discuss contributing factors to their current academic status. Importantly, the meeting allows a supportive, educative approach to encourage the student to return to Good Standing. Through discussion, the student and academic work towards a realistic plan for the upcoming semester (i.e. reduced study load, monthly meetings, a period of leave, change from online to face-to-face study mode). The student is asked to prepare and share an individualised study plan that reflects their commitment and fosters positive study behaviour. This is the first stage of accountability and represents Step Three. In doing this, the student demonstrates willingness and commitment to their studies and improving their academic status - often the largest challenge (Lather et al, 2015). Step Four involves tailored, periodic monitoring of progression during the semester undertaken by the known academic staff member.

This four-step approach has been trialled, modified, and established between 2017 and 2019. A total of 350 students have participated in this process, with approximately 170 returning to either a Supported or Good Standing status (49 %), and approximately 35 being excluded. Overall the process has confirmed two critical components related to student engagement and retention: 1) students benefit from proactive invitations for open and professional discussion with a known academic in which they feel valued and respected, and 2) it is important to provide genuine assistance and support, to foster and facilitate approaches and strategies for students to use in their studies.

5. Conclusions and recommendations

Following the identification of the key challenges in student retention for our distance students, and discussion of case study solutions, we sought to reach out to the wider university community. Within 6 months of forming, our CoP shared our findings at a University of Tasmania 'Teaching Matters' conference and we arranged individual conversations with a number of senior academic staff in institution leadership roles. Despite these efforts, the more immediate impact has been in the organic transfer of practice and culture at the individual unit, School, and College level. By continuing our conversations within our own areas of the university, demonstrable transfer of practice has already occurred. New discipline-specific MyLO Orientation units are being built, and a new website-based Orientation for all distance students at the university is grounded in the successful principles of those in Postgraduate Nursing and Dementia Care. Similarly, a newly formed institution 'Student Retention Taskforce' has incorporated some of the principles

of including 'known academic staff' for student touchpoints during the semester and has also drawn on our collective experience of effective implementation of initiatives at the College or discipline level.

Clearly missing from our discussion of identified challenges, is the student voice. Whilst included in some of the case studies, additional student perspectives have the potential to further shape the success of initiatives and approaches to student engagement/retention for distance students. Another valuable addition to this work would be longitudinal data that could quantify the impact of initiatives over time.

In summary, we describe our experience of how a CoP approach can be used to inform and drive change in HE from below, in contrast to top-down implementation of initiatives at the institution level. Collectively, we did not find a single approach that could address student attrition in online programs. Instead, we describe a collection of case study examples that demonstrate (1) the importance of knowing your students, (2) the difficulty in getting reliable data, (3) the need for 'belonging' for online students and early, meaningful early engagement and (4) student access to 'known' academics all of which can be used to address student attrition in online programs across diverse cohorts. Whilst these four identified factors are specific for our own, unique student cohorts at the University of Tasmania, and emerged only after a 'deep dive' into understanding our student demographics and learning habits, they are relevant to other distance cohorts in both regional and metropolitan universities. Additionally, the value of the methodological approach used to understand and address the challenges faced by online students at this university could be successfully applied in the context of any other institution or distance cohort.

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