

Engaging, supporting and retaining academic at-risk students in a Bachelor of Nursing: Setting risk markers, interventions and outcomes

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Abstract

Student attrition from nursing programs impacts on sustainability of the profession. Factors associated with attrition include: lack of academic capital, extracurricular responsibilities, first generation tertiary students, and low socio-economic or traditionally underrepresented cultural background. Successful Australian government reforms designed to advance equity in higher education have increased student population diversity, which is accompanied by a rise in the incidence of risk factors for attrition (Benson, Heagney, Hewitt, Crosling, & Devos, 2013). This prospective study examined commencing nursing students in their first semester to track critical risk markers associated with attrition, and implemented timely interventions to support subject completion or enrolment perseverance in the event of subject failure. Students who attended orientation, accessed blended learning, attended early tutorials, submitted and passed first assessment items, and studied part-time were significantly more likely to pass the subject overall. Interventions based on good practice principles for student engagement and support resulted in increased retention.

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Introduction

Student attrition from university nursing degrees is a global concern, which attracts much attention in nursing and higher education literature. Degree non-completion has adverse outcomes for both the university and the student. For the university, there are associated and significant financial losses if student enrolments are not achieved and retained, resulting in pressure to recruit students who may be less academically prepared for university. Diminished admission standards impact on organisational reputation and rankings of tertiary education providers. For the student, there are also likely to be negative economic and social consequences related to non-completion (Crosling, Heagney, & Thomas, 2009; Taylor, 2005), and for nursing students' specifically, non-completion impacts upon the sustainability of the profession. Ultimately, this contributes to the burden of workforce shortages in healthcare facilities, which can influence the quality of patient care (Mulholland, Anionwu, Atkins, Tappern, & Franks, 2008; Taylor, 2005).

The Australian Government's agenda for widening participation in higher education (Australian Government, 2009) has increased representation of non-traditional students in undergraduate nursing programs (Jeong et al., 2011; Salamonson, Everett, Koch, Andrew, & Davidson, 2012). Within this policy, the Australian Government has determined that by 2020, at least 20% of undergraduate students in higher education must come from low socio-economic (LSES) backgrounds (Gale & Parker, 2013). The response by higher education institutions (HEIs) to successfully operationalise these targets has been strengthened by funding incentives that are contingent on equity-

based performance indicators, namely: target group access, participation, retention and success (Gale & Tranter, 2011; Nelson, Clarke, Stoodley & Creagh, 2014). Non-traditional students are defined as individuals who come from socially, culturally or educationally disadvantaged backgrounds characterised by their LSES, use of English as a second language, gender (mainly female), age (usually older adults) and/or limited experience in formal educational contexts (Gale, 2012). These students typically have carer and employment responsibilities that reduce both time spent on campus and time engaged with study (Munro, 2011). Nursing degrees attract a large number of non-traditional students (Salamonson et al., 2012) which is seen as critical for nursing to meet the cultural needs of diverse patient groups (Jeffreys, 2012).

Some non-traditional students require specific and additional support in order to engage effectively in their studies and to achieve success. Further, it is acknowledged that students from disadvantaged backgrounds have equal if not better academic outcomes over time when compared with traditional student peers (Whiteford, Shah, & Sid Nair, 2013). Therefore, university-wide approaches that seek to enhance engagement and retention for all students are recommended (Nelson et al., 2014). Transition pedagogy is crucial for an effective first year experience and is defined by Kift (2008) as "a guiding philosophy for intentional first year curriculum design that carefully scaffolds and mediates the first year learning experience for contemporary heterogeneous cohorts" (p. 5). The study site has adopted the work of Lizzio as an overarching theoretical approach to transition programming. Lizzio (2011) discusses student success in terms of the "coordinated integration of both curricular

and co-curricular activities and a consistent and mutually reinforcing set of messages and values” (p. 7). His lifecycle-informed program design acknowledges that as students mature through their tertiary experience, they encounter a series of transitions characterised by different identity-related tasks and needs requiring a corresponding match in the design and culture of the learning environment (pp. 1-2). Lizzio’s (2006) *Five Senses of Success* (evolving identity in relation to academic and professional culture, capability, connection, purpose and resourcefulness) integrates with the lifecycle framework to provide a focussed, intentional and practical strategy which responds to and promotes student maturity.

This paper reports on a two-part pilot study aimed at engaging, supporting and retaining a cohort of non-traditional Bachelor of Nursing (BN) students in Queensland, Australia.

Literature review

Retention in tertiary and hospital-based nursing programs, has been a challenge for more than 60 years (Taylor, 2005; Wray, Barrett, Aspland, & Gardiner, 2012). In the United Kingdom (UK), estimates for some universities have reported attrition rates of up to 50% in some programs with a national average of around 20% across nursing degrees (Mulholland et al., 2008). In the Australian context, attrition rates in nursing degrees are similar. In 2008, it was estimated that between 9.7% and 41.8% of students would be lost prior to completing their nursing degree (Gaynor et al., 2008).

Researchers have sought to investigate why students leave university prior to degree completion (Tinto, 2009; Yorke & Longden, 2004). The predominant theme in the literature is associated with

expansion in higher education to attract students from diverse backgrounds with non-traditional qualifications, and then failing to appropriately support students (Jeong et al., 2011). There are however challenges in engaging with and supporting non-traditional students to successful completion and which relate to nursing students, most notably: lack of academic capital (Jeffreys, 2012; Mulholland et al., 2008; Pitt, Powis, Levett-Jones & Hunter, 2012; Salamonson & Andrew, 2006; Wray et al., 2012), mode of enrolment (full or part-time), employment commitments outside of study, first in family to attend university (Jeffreys, 2012), carer responsibilities and LSES background (Cameron, Roxburgh, Taylor & Lauder, 2011; Willcoxson, Manning, Johnston & Gething, 2011). It has been suggested that the university experience for non-traditional students is similar to culture shock (Krause, Hartley, James & McInnis, 2005).

Some authors suggest there are additional factors that play a significant role in degree completion for nursing students. These include English as a second language and cultural diversity (Porter, 2008; Taylor, 2005), inappropriate degree choice and personal issues (Barrett, Aspland, & Wray, 2014; Bowden, 2007; Halliday-Wynes & Nguyen, 2014; Hamshire, Willgoss, & Wibberley, 2013). Nursing students also cite workload, particularly around independent study expectations, as having a major impact on their decision to leave (Hamshire et al., 2013; Wray et al., 2012). This is particularly true of students’ first year experience in university.

In contrast, emerging research has found that nursing students who are conscientious, have high degree of self-efficacy and have a supportive family are more likely to remain enrolled and

complete their program (McLaughlin, Moutray & Muldoon, 2008; Rudel, 2006; Shelton, 2012). However Tinto (2006) points out that integration of academic systems and particularly a supportive academic team, is also an important factor in the successful completion by non-traditional students (Bowden, 2007; Hamshire et al., 2013; Shelton, 2012). Additionally, the ethos, culture and tradition of universities are important for non-traditional students to understand in order to enhance a sense of cultural connection (Jeong et al., 2011). The availability of support networks for non-traditional students is also important, although students are often reluctant to utilise these (Barrett et al., 2014; Jeong et al., 2011), as they may view them as an admission of failure (Cameron et al., 2011). Jeffreys (2012) and Pitt et al. (2012) also highlight the important role of academic staff in students' decisions to remain enrolled. Whilst students often find it difficult to reach out for support, Cameron et al. (2011) report that students appreciate academics who make themselves available to help.

Yorke (2008) asserts that more work needs to be done to facilitate students' successful transition into university to drive their potential for success. There is ample evidence to suggest that engaging in supportive activities such as orientation and skills building are key to retaining nursing students and building academic capital (Crosling et al., 2009; Yorke & Longden, 2004; Zepke, Leach & Prebble, 2006). Indeed, early engagement of students that aims to develop academic capital (such as literacy skills workshops) and social capital (such as orientation and mentorship programs) (McIntyre, Todd, Huijser & Tehan, 2012), is considered crucial to supporting transition into university (Tinto, 2006).

Informed by the literature on student engagement and retention (Lizzio & Wilson, 2013) and as part of a university-led initiative, this study aimed not only to track critical risk markers believed to be associated with failure and risk of attrition, but also to implement timely interventions to support nursing students and provide academic skills and study guidance to remain in, and successfully complete their BN.

Method

Research has identified effective student retention interventions that enhance students preparedness to study, create an effective orientation experience, increase personal communication with and advice to students, provide early detection and intervention for students at risk, enhance the quality of the learning experience, and increase student engagement and quality of the campus experience (Scott et al., 2008; Tinto, 2006). Through the use of Lizzio's lifecycle-informed approach to student transition, Griffith University (2012) implemented a coordinated institution-wide retention strategy. This strategy built on the earlier successful trial involving embedded student academic success advisors (SSA) in first year programs (Wilson, 2009) which demonstrated enhanced student engagement and retention. Six key risk markers were identified for early detection and early intervention of students at risk of attrition: attendance at orientation; accessing the subject blended learning site by week 2 of semester; attendance at on-campus tutorials in the first 2 weeks of semester; first assessment submission; passing first assessment item; achieving a final pass grade for the subject.

This prospective study involved 223 nursing students who commenced into the

first semester of the first year of the BN in 2012. Data collection included: hard copy and electronic attendance lists, "retention centre" feature on *Blackboard* for automatically identifying student access to

15% of students identify as coming from LSES backgrounds.

In stage 1, data were collected around three core subjects related to *Communication, Health Assessment* and

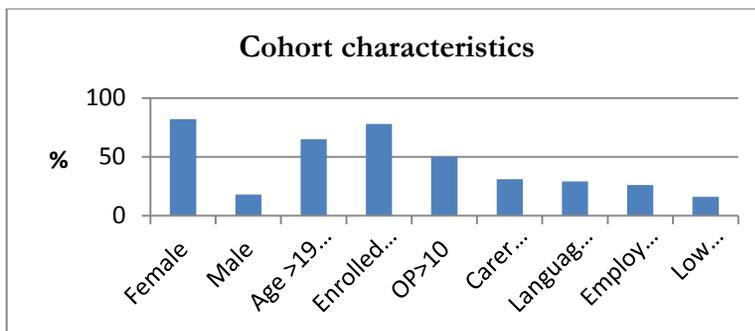


Figure 1: Cohort characteristics for BN program students (First in family status not available)

online resources; and online "Marks centre" results posted by academic staff via *Blackboard* in order to examine the five critical risk markers. The data collection strategies are further outlined below in a discussion of the staged implementation.

Figure 1 presents the demographics of the cohort of students. Of note, there are a significant percentage of students who have high overall position (OP) scores¹, and study full-time. Around 30% of students have carer commitments outside of university, speak a language other than English at home, and work in paid employment during study, while more than

Psychosocial Care, to examine the relationship between critical risk markers and student failure. A fourth subject was not included as it was subject to review and evaluation at the time of the study. Table 1 provides an overview of the subjects. Each subject was supported by on-line materials and all had early, low-stakes assessment items (for example, one subject required students to complete an on line academic writing tutorial worth 10% of overall grade), plus two other assessment items that contributed to overall grading.

Table 2 describes the enrolment status of the cohort. Almost 78% of students were enrolled in a full-time study load (3 subjects).

In stage 2, interventions were developed around the risk markers for students who were believed to be at risk of failure. These were based on good practice principles for

¹ An OP is a student's position in a state-wide (Queensland, Australia) rank order based on overall achievement. Students are placed in one of 25 OP bands from 1 (highest) to 25 (lowest). Forty-eight percent of students achieve an OP of >10 (see https://studentconnect.qsa.qld.edu.au/downloads/about/qsa_op_fast_facts.pdf)

Table 1: Subject overview

Subject	Teaching strategies	Assessment	Weighting %
Communication	Lecture to provide theoretical content Tutorials and laboratories focussing on developing skills through role play Blended learning support	1. Written assessment item	40
		2. Written assessment item	40
		3. Role play assessment	20
Health assessment	Lecture to provide theoretical content Laboratory focussing on developing clinical skills Blended learning support	1. Written assessment item	20
		2. Mid semester examination	30
		3. End of semester simulated clinical examination	50
Psychosocial care	Lecture to provide theoretical content Tutorials to further develop understanding of concepts Blended learning support	1. Examination	20
		2. Group presentation	40
		3. End of semester examination	40

Table 2: Enrolment status of study cohort

Number of Subjects Taken	Number of Student	Percentage
1	28	12.6%
2	22	9.9%
3	27	12.1%
4	146	65.5%
Total	223	100.1%*

* - Error due to rounding

first year engagement and retention (Kift, 2009; Dumbrigue, Moxley, & Najor-Durack, 2013; Yorke & Longden, 2004) and included non-attendance at orientation, no access to the blended learning platform,

non-attendance at tutorials in the first two weeks of study, non-submission and/or failure of first assessment items, and/or overall subject failure. Data were recorded onto an excel spread sheet for the duration

Table 3: Critical risk markers

Marker	Activity
1	Attendance to orientation
2	Accessing blended learning platform
3	Early tutorial attendance
4	First assessment item submission
5	Passing first assessment item
6	Overall academic outcomes

Notes:

Marker 1: This one day session is held prior to commencement of semester and orients students to academic and social aspects of university education.

Marker 2: Every subject delivers critical support through blended learning – for example lecture notes and recordings, tutorial activities, subject readings, on line activities and learning resources.

Marker 3: All subjects have an associated small group tutorial of 1–2 hours face-to-face contact.

of students' first semester. For orientation, data were collected using sign on lists on entry to the venue and names cross-matched with enrolment lists. Access to the blended learning site was tracked via the on-line platform which has the capacity to record students' activity and usage of blended learning. All academics developed attendance lists of students enrolled in tutorials and were completed each week to identify if students had attended. Assessment submission was tracked using the on-line platform. On completion of marking and uploading of results, academics forwarded students' results to the program director and inclusion onto the spread sheet. At the end of semester, on ratification of results, students' overall outcomes were entered into the spread sheet. This was cross-checked by two academics to ensure completeness and accuracy of data.

Risk markers at various critical points over the course of first semester were developed, based on the university retention strategy (Griffith University, 2012) (Table 3) to enable identification of

students deemed to be at risk of non-completion.

Interventions were designed around these critical risk markers and delivered by subject coordinators, the BN first year coordinator² and student success adviser whose roles were to support commencing students with academic advice and guidance. Support was given via individual consultation and support as well as group activities (Table 4).

Results

Results were analysed using SPSS version 21 personal computer version. Collected data was reviewed for completeness and consistency and screened for normality and outliers using the Kolmogorov Smirnov test. Results were normally distributed for each subject indicating that a parametric analysis approach could be used. Standard multiple regression analyses were used to determine if there

² The first year coordinator is an academic role, responsible for engagement and support of commencing students.

Table 4: Risk markers and interventions

Marker	Activity	Intervention	Responsibility	Timing
1	Attendance to orientation	Students who did not attend orientation were contacted by telephone and invited to an alternate orientation session. If unable to attend students were directed to essential information and / or information was posted or emailed.	Student Academic Success Advisor (SSA) and first year coordinator	End of orientation week
2	Accessing blended learning platform	Data was tracked weekly regarding students who had not accessed the blended learning platform. Students were emailed, encouraging them to make contact and explaining the importance of accessing the blended learning site. This was followed up with a telephone call to offer support.	Subject coordinators (emails) SSA (telephone calls)	End of week 1
3	Early tutorial attendance	Attendance records were monitored for the first 2 weeks of each subject. Students who did not attend were contacted and offered support and individual academic guidance.	Subject coordinators and tutors (monitoring) Subject coordinators (emails to offer support and guidance) SSA (follow up telephone calls to offer support and guidance)	Weeks 1 & 2
4	First assessment item submission	Low stakes assessment was introduced into all first year, semester one subjects. Students who failed to complete the first assessment task were contacted and offered support and individual academic guidance.	Subject coordinators developed assessment schedule Subject coordinators (emailed students who failed to submit to offer support and guidance) SSA (follow up telephone calls to offer support and guidance)	Between weeks 1 - 4
5	Passing first assessment item	Students who failed to achieve a passing mark in the first assessment task were contacted and offered support and individual academic guidance.	Subject coordinators (emailed students who failed to achieve a passing mark to offer support and guidance) SSA (follow up telephone calls to offer support and guidance)	Immediately following mark finalisation for subject
6	Overall academic outcomes	Students who did not achieve a passing grade in one or more subject were contacted and offered support and individual academic guidance.	First year coordinator (email and call to offer progression advice) SSA (follow up telephone calls to offer support and guidance)	End of semester

was a significant predictive relationship between the independent variables (critical markers 1-5) and the dependant variable (critical marker 6) and include an assessment of the mean differences between critical markers 1-6 to assess the overall fit of the linear model using ANOVA.

Significance was determined via an alpha level of .05 or less for all tests.

Table 5 presents an overview of data for each risk marker.

Results indicated critical marker 4 (First assessment item submission) and 5 (Passing first assessment item) were

significantly related to overall academic outcomes ($p = <.001$) for all three first semester, first year subjects examined: *Communication*, *Psychosocial Care* and *Health Assessment*.

correlation ($p = .002$, $r = -.209$) between the number of subjects a student was enrolled in and the probability of failing as least one subject.

Table 5: Percentage of student cohort with successful risk marker completion

Critical risk markers	Overall	Communication	Psychosocial Care	Health Assessment
	Percentage of student completion			
	N=232	N=180	N=172	N=188
1.attendance at orientation	87.9%			
2.accessing blended learning	43.2%			
3.early tutorial attendance Week1		85.9%	87.6%	93.7%
Week2		71%	96.7%	94.7%
4.first assessment submission		93.3%	95.9%	87.2%
5.passing first assessment		56.9%	77.2%	89.9%
6.overall positive academic outcome		88%	88.4%	81.4%

For subject *Communication*, attendance to tutorials in the first few weeks of commencing university (particularly in week 1) was an important indicator for overall academic outcomes ($p = .031$).

Critical markers 1-5 (attendance to orientation, accessing the blended learning platform, early tutorial attendance, first assessment item submission and, passing first assessment item) predicted 61.4% of the dependant variable (critical marker 6 – overall academic outcome) for subject *Communication* ($F(4, 105) = 421.47$, $p < .001$, $R = .614$), 58.0% for *Health Assessment* ($F(4, 181) = 659.75$, $p < .001$, $R = .580$) and 40.6% for subject *Psychosocial Care* ($F(4, 83) = 936.56$, $p < .001$, $R = .406$).

A full-time study load was also associated with the predictor of failure of at least one subject. Correlation analysis examined if there was the strength of the relationship between the number of subjects a student was enrolled, and the rate of failure and identified an, association significant

At the end of the study intervention, the retention rate was again examined and compared to the retention figure of the same time in the previous year (cohort demographics are similar across years). Retention had increased from 80.57% to 83.82% over the course of one year. That is, there was a 3.25% increase in the number of students who returned to year 2 of study in the BN. Although not significant, this result suggests a positive trend which warrants further longitudinal examination.

Discussion

Tracking the cohort of nursing students across several risk markers revealed particular points at which academic and professional staff might intervene in order to support and retain students. A significant finding was that nursing students who submitted and passed their first assessment item were significantly more likely to pass a subject overall. The importance of assessment cannot be

underestimated as it has a profound effect on student motivation (Grainger, Purnell & Zipf, 2008) and is a powerful predictor of student performance and program effectiveness (Bennett, 2010; Brown & Knight, 1994). An important intervention in the study was the introduction of early, low stakes assessment items into all year one, semester one subjects. Early, low stakes assessment, scaffolded to ensure students' continued academic success, is discussed in the literature and receives widespread support as an important factor in building students' academic capital and self-belief (Crosling et al., 2009; Kift, 2009; Sambell & Hubbard, 2004; Wilson & Lizzio, 2008). When setting assessment, student characteristics such as culture and diversity are important factors to consider (Forbes & Hickey, 2009; Leathwood, 2005) and requires academics to consider students' experiences of learning as well as their outcomes (Bennett, 2010). Bennett emphasises that assessment achieves the best outcomes when it is ongoing and cumulative rather than episodic and highlights the importance of tracking the performance of individual students, and cohorts of students, from assessment item to assessment item and subject to subject.

A second major finding was that nursing students who collectively attended orientation, accessed the blended learning resources, attended early semester tutorials and submitted and passed their first assessment items were significantly more likely to pass. This was particularly true for students enrolled in the *Communication* and *Health Assessment* subjects. This suggests two things. First, the more engaged a student is with their learning, the more likely they are to pass a subject. The second is that nursing students may see these subjects as relevant to their professional selection and therefore find it easier to engage if they

identify a relationship between the subject content and the role of the nurse.

With regard to *Communication*, nursing students who attended orientation, accessed the blended learning resources, attended early semester tutorials and submitted and passed their first assessment items were significantly more likely to pass the subject than students in *Health Assessment* or *Psychosocial Care* who also engaged with these activities. This may be due to the structure of the *Communication* subject which has an early and very strong emphasis on academic writing, nurse-patient interactions, and from week 1 engages with the first assessment item. It also requires students to connect with blended learning resources in order to complete the first assessment item. Likewise, the subject *Health Assessment* may be viewed as important for nursing students as it relates directly to gaining the psychomotor skills associated with being a nurse, and students are assessed on their competency with these skills. Added to this, the blended learning platform is focussed on supporting those skills in a focussed way with videos and supporting resources.

There is ample evidence to suggest that developing supportive activities that engage learners in their learning and enable them to 'fit in' is key to retaining students (Crosling et al., 2009; Yorke & Longden, 2004; Zepke et al., 2006). Successful strategies to develop academic and social capital include orientation and mentorship programs and literacy skills workshops (McIntyre et al., 2012; Nelson & Kift, 2005; Yorke & Longden, 2004).

Finally, students' enrolment status (full or part-time enrolment) was found to be a significant predictor of potential success. Although 80% of students were enrolled in

full-time study, a full-time study load was a predictor of failure of at least one subject. This is significant given that the demographics of the student cohort are complex with interwoven factors such as paid employment outside of study, carer commitments, age and gender. In this study, 30% of students worked more than 17 hours per week and more than 30% of students had carer commitments. Both factors are well recognised in the literature as impacting on students' ability to be successful at university (Munro, 2011; Salamonson et al., 2012). Indeed, employment of more than 9 hours per week outside of university has been found to negatively impact on the likelihood of a student progressing into year two of study at university (Moreau & Leathwood, 2006). For nursing students with carer commitments, the challenges are numerous as they attempt to manage the demands of family with subject requirements. This often results in some students only being able to attend compulsory components of the subject considered essential to pass (Hockings, Cooke & Bowl, 2007).

Also of note is the high percentage of female students (more than 80% of the student cohort) and mature age students (65% of the student cohort). Hockings et al., (2007) describes the experience for mature aged students commencing at university as traumatic and isolating and suggests that the challenge may be exacerbated for mature age students who cannot build the same social and academic lives around their study experience and therefore lack support.

At this university, students in the BN are tracked routinely and any nursing student identified at risk of failure within the semester is contacted by email or by telephone and offered academic

counselling through subject coordinators and /or the SSA, and progression advice through first year coordinators. Additionally, strategies are put in place during orientation week to engage with non-traditional nursing students. Whilst orientation is associated with social activities, for non-traditional students there is value in including activities that focus on professional identity, study skills and academic achievement (Moreau & Leathwood, 2006). Such activities can minimise the distance between academics and students which might encourage non-traditional students to feel more confident to seek help (Wilson, 2009). For example, orientation into the BN now includes advice on forming study groups, managing potential academic problems, developing information technology literacy and academic writing skills, developing professional identity as well as campus tours and student mentor support.

Conclusion

Student attrition from university nursing degrees is a major professional concern which contributes to the burden of workforce shortages and influences the quality of patient care. Increasingly, nursing students have been recruited from non-traditional backgrounds. These students are culturally diverse, academically unprepared and socially isolated with considerable carer and/or employment responsibilities, in addition to the requirements to successfully complete a degree.

This paper reported on a two-part pilot study aimed at engaging, supporting and retaining a cohort of non-traditional Bachelor of Nursing (BN) students in a Australian university. Risk markers were identified that indicated academic points at which students struggled to complete

successfully and supportive strategies were developed based on research literature around these markers, to engage with and retain students. At the completion of the project, retention of students had increased from 80.57% to 83.82%.

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