A successful strategy for supporting low socioeconomic and accelerated students studying Biosciences in their first year of study

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Abstract

At our regional University low socioeconomic status (SES) campus, enrolled nurses can enter into the second year of a Bachelor of Nursing. These students, hence, have their first year experience while entering directly into the degree’s second year. A third of these students withdrew from our Bioscience units, and left the University. In an attempt to improve student retention and success, we introduced a strategy involving (i) review lectures in each of the Bioscience disciplines, and subsequently, (ii) “Getting started”, a formative website activity of basic Bioscience concepts, (iii) an ‘O’-week workshop addressing study skills and online resources, and (iv) online tutor support. In addition to being well received, the introduction of the review lectures and full intervention was associated with a significant reduction in student attrition. This successful approach could be used in other low SES areas with accelerated programs for Nursing and may have application beyond this discipline.

Introduction

One of the primary strategies of increasing participation in nursing education is the introduction of accelerated nursing programs. Students entering these accelerated programs receive academic credit for prior learning in an unrelated field or recognition of an equivalent learning in the form of prior work place or life experience (Commonwealth of Australia, 2002; Seldromridge and Partridge, 2005). These accelerated programs provide many advantages including a shortened study time and a reduction in university expenses.

Our university, Queensland University of Technology (QUT in Brisbane, Queensland, Australia), offers a three-year undergraduate Bachelor of Nursing degree. This degree is offered at a large inner-city suburban campus and at a smaller rural secondary campus in a low SES suburb. An accelerated version of this course is also offered, excluding introductory units in nursing theory and practice and anatomy, physiology and microbiology. At the secondary campus, the only accelerated students allowed to enrol are those that have completed a non-University course for enrolled nurses (e.g. nurses required to work under the supervision of a registered nurse). At this campus, the accelerated students undertake a unit in Pharmacology and an advanced level unit in Anatomy, Physiology and Microbiology (Bioscience 3), in their first semester, without prior-University teaching of anatomy, physiology, pathophysiology or microbiology.

Although the accelerated students are having their first year experience of University, they are in the same second year classes as continuing students who have already completed their first year experience. When it became obvious to us that the accelerated students at our low
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SES campus were having problems adjusting to University, as evidenced by high withdraw rates early in the course, we wanted to help these students.

In the design of our strategy, we chose to consider our accelerated students as first year experience students, as there was no literature available, to our knowledge, on the first year experience of accelerated students. The planned intervention should also consider the challenges faced by low SES groups, as our accelerated students were from a low SES area. Kuh and colleagues (2007) have considered all the aspects that contribute to student success, and made recommendations as to how these can be improved. Of these aspects, the one that directly relates to us, as University teachers at QUT, is that students who start University with two of more characteristics associated with premature departures/persistence (eg. low socio-economic status, time lapse between high school and university etc), benefit from early interventions and sustained attention at various transition points in their educational journey (Kuh et al, 2007; Ishler & Upcraft, 2008).

Given our student cohort, we developed a multi-faceted intervention to foster the success of accelerated students from a low SES area to address. This strategy involved intervention on a number of levels, based on factors that have previously been shown to have a positive impact on the retention of low SES students and their subsequent success (Yorke & Thomas, 2003). These included (i) an institutional climate supportive in various ways of students’ development i.e. perceived as ‘friendly’; (ii) an emphasis on support leading up to, and during, the critically important first year of study; (iii) an emphasis on formative assessment in the early phase of programmes, and this assessment should have feedback from the teacher (Yorke, 2001); (iv) recognition of the importance of the social dimension in learning activities.

The study we describe here is an evolving study, where in 2010 we intervened with Review Lectures to support the accelerated students. In 2011, we obtained a Teaching & Learning Grant from QUT’s Faculty of Science and Technology, and were able to offer the accelerated students more support. Throughout the project we surveyed the students about their impressions, interest, and evaluation of the interventions.

**Methods**

*2010 and 2011 Review lectures and their evaluation*

In 2011, the review lectures were evaluated by questionnaire immediately upon their completion, as a part of the O-Week workshop. The questionnaire, in both instances, was a 5-point Likert scale: ranging from ‘strongly agree’ to ‘strongly disagree’.

*2010 Establishment of Community website and student recruitment*

A Community website for accelerated students in Biosciences and Pharmacology was established on Blackboard and all of the students in the Bioscience 3 and Pharmacology Units were enrolled. This included accelerated students and continuing (cont, those students that had completed first year) students. When the students received access to the website, they were welcomed and have access to five buttons: Information, Getting Started (the formative website activity), the O Week Workshop, Resource Lectures, and Ask Your Tutor.
Recordings of the Resource Lectures and O Week Workshop were added to the Community website after these ‘live’ versions had been completed.

2011 Formative website activity

In the weeks before the start of semester, formative website activities in the form of eChapters were posted on the Community website, “Getting Started”. These eChapters including basic concepts common to the science units (eg. medical and anatomical terminology, binding sites – the keys to pharmacology etc) and were specifically prepared for the accelerated students. These were supported by self-help quizzes, consisting of MCQs posted on the Community website, with feedback for each correct and incorrect answer. This formative website activity was evaluated by a questionnaire given to the students in week 10 of the 2011 semester (2011 survey).

2011 Workshop in O week

Accelerated students commencing at 2nd year in Semester 1, 2011 were invited to a special workshop in O week. Scheduled events included: (i) an introduction to why the intervention was set up; (ii) an introduction to the Community Blackboard Site, and the Blackboard site for the individual units; (iii) an overview of library resources available to the students; (iv) study skills for active learning as well as specific advice on studying bioscience and pharmacology; (v) study experiences presented by a previous Nursing accelerated student; (vi) review lectures, consisting of material normally given in the first year of the course on anatomy, physiology and microbiology. These latter lectures were also presented to the accelerated students in Week 1 of semester in 2010. A transcript of the meeting was then posted on the Community website for students wishing to go through the material again or for the students unable to attend the workshop. The workshop was evaluated by the students immediately after its completion with a 5-point Likert scale.

2011 Extra tutor for Weeks 1 – 3 of semester

The individual students had extra tutor support for weeks 1-3. This was administered by a tutor using the Blog/Discussion part of Blackboard. Thus, students were able to post questions or problems relating to the lectures, and these were dealt with by the tutor or other students in the group on Blackboard. Evaluation of the extra tutor activity was included in the 2011 survey.

Results

2011 Evaluations of interventions

In 2011, the Review lectures and O week workshop were evaluated on completion, and Getting Started and the Online Tutor were evaluated in the 2011 Survey. In 2011, there were 21 students enrolled as accelerated students, and 19 attended the Review lectures. Most students strongly agreed or agreed that the “The information I have received prior to the week has been timely and informative”, “These orientation sessions were scheduled at a suitable time”, and “The facilities and locations were appropriated and satisfactory”. There were no “disagree” or “strongly disagree” responses.
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The 2011 Review Lectures in anatomy/physiology and microbiology, delivered by the same lecturing team who presented them in 2010, were evaluated very well with strongly agree or agree and no disagree or strongly disagree to the following statements (i) “The printed and online material were presented in a clear and organised manner”; (ii) “The presenter responded to questions in an informative, appropriate and satisfactory manner” and; (iii) “Overall, the session was informative and valuable.” The accelerated students also positively reviewed the Library Resources and Active Learning for Success components of the O workshop, with the responses being very similar as for the Review Lectures (data not shown).

In 2011, an in-class questionnaire was used to evaluate the Getting started website and the Online tutor, and 10 of the 20 accelerated students responded. There was little awareness of the Getting started website, with 7 students being unaware of the site, and only two students having used it. The responses for these two students were very positive, however. Similarly, only two students were aware of the online tutor, and neither of them had used the facility.

Withdrawal rates and pass and percentage marks of retained students

The main aim of the project was to have a positive impact on the retention of accelerated students, and this was achieved (Figure 1). In 2009, the withdrawal rate for accelerated students in the Bioscience and Pharmacology units was very high (~30%). Upon initial intervention in the format of the Review lectures, presented in 2010, a dramatic drop in the withdrawal rate was observed (Figure 1). This decrease in student attrition across both units was continued in 2011 when the full intervention was introduced (Figure 1). Over the same time period, 2009-2011, the withdrawal rates for the continuing students (i.e. students who had completed the first year of nursing) were zero or lower than the withdrawal rate for accelerated students (Figure 1). A high and similar proportion of the continuing and accelerated students that were retained in the Units passed the Pharmacology and Bioscience 3 Units in 2009 (data not shown).

Discussion

While a lot is known about the factors that lead to first year students not persisting in their University studies, providing an intervention which addresses these factors to improve retention in a low SES community campus, has not been tested to the best of our knowledge, let alone for students who are not normally considered to be traditional first-year students. In this project, we devised an intervention based on the factors of Yorke & Thomas (2003) to determine whether this would improve the retention of our students from low SES backgrounds. By doing this, we have demonstrated a successful strategy for supporting accelerated students into Pharmacology and Biosciences units.

In 2010, the only strategy to support these students was the Review lectures in anatomy, physiology and microbiology, and this intervention was associated with an increased retention rate. In 2011, the full strategy for supporting accelerated students corresponded with a further increase in the retention of this student cohort. It is unlikely that these four components contributed equally to student retention, however, as most students were unaware of the Getting started website or the online tutor. Thus, the combination of the Workshop in O week and the Resources lectures, without the Getting started website and the
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As stated by Tinto, “it is one thing to identify effective action, and another to implement it on an ongoing basis” (Tinto, 2007). We intend that our strategy should be ongoing.

The interventions are probably not the only factors that contributed to improved accelerated student retention. In 2009, both study authors were new to teaching at this campus and little information was available on the status and background of these students. Most of the accelerated students that withdrew, withdrew early so no special consideration were given and we never met them. In 2010/2011, in addition to the interventions described, we were also aware of these students, and directly addressed this in the classroom with comments to allay the initial apprehensions of these accelerated students. Presumably, this change of attitude on the part of us as University teachers, may have contributed to the success of our strategy.

As stated by Tinto, “it is one thing to identify effective action, and another to implement it on an ongoing basis” (Tinto, 2007). We intend that our strategy should be ongoing.

Key questions: Would this approach be applicable to other Advanced Standing students and other students in low SES areas? What other factors would need to be addressed?

References