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‘Get Ready’: Improving the Transition Experience of a Diverse First Year Cohort Through Building Student Agency

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Abstract

A great deal has been achieved in recent years in understanding how universities can best support the transition to higher education of an increasingly diverse student body (Kift, 2015). Numerous studies have identified transition program elements that correlate with improved success and retention for commencing students. Lizzio’s ‘five senses’ model (2006) rationalises these diverse features into a framework consisting of five affective domains that need to be developed in students to ensure successful transition. To assess how well a program based on the Lizzio model supports transition in practice, we evaluate our Get Ready transition program, developed for a large-enrolment first year Human Physiology subject with a highly diverse student cohort. We conclude that embedding the development of Lizzio’s five senses in a performative way is the key to building students’ agency and nurturing their identity as thriving members of a new academic community.

Keywords: Transition; first year experience; orientation; Lizzio’s Five Senses; undergraduate.

Introduction

Over the past few decades, it has become clear that broadening access to higher education requires much more than merely extending entry to ‘non-traditional’ cohorts: significant resources must also be invested into ensuring that the transition needs of an increasingly diverse student body are met. In particular, students with low tertiary admission scores are less likely to complete their degrees (Norton & Cakitaki, 2016). Edwards and McMillan (2015) have found the same to be true for students from low socioeconomic (SES) backgrounds, though other periodic studies have consistently concluded that attrition rates are no higher for low SES students once tertiary admission rank is taken into account (Krause, Hartley, James, & McInnis, 2005; Norton & Cakitaki, 2016). Nevertheless, it is clear that this demographic is still greatly under-represented in higher education (Norton & Cakitaki, 2016). Kift (2015) also draws attention to ‘hidden’ attrition, over and above officially reported levels, by which she means students who ‘don’t take up their offer, don’t make it to Orientation Week or don’t make it to the official week 4/5 census date’ (p. 53). Studies have shown that students with low tertiary admission scores or from low SES backgrounds are more likely to feel ‘insufficiently academically prepared for university’ (Baik, Naylor, & Arkoudis 2015, pp. 69).

At the same time, a discourse of more 'underprepared students' entering university has gained currency amongst university staff. An Australian study published in 2000 found that about one third of academics surveyed believed that the calibre of their students had decreased over five years (McInnis, 2000). In the UK, according to the 2016 Times Higher Education University Workplace Survey, over 50% of lecturers felt their university had 'compromised on student quality' (Times Higher Education, 2016). Associated with the 'underprepared student' discourse is the trend towards place offers being based increasingly on overall performance in the final year of high school, rather than on academic achievement in certain prerequisite subjects. In particular, the phenomenon of students attempting to maximise their university entrance scores by choosing 'easier' subjects in their final year of high school has been observed (Nicholas, Poladian, Mack, & Wilson, 2015). Others have noted a discrepancy between what university teachers believe is a necessary pre-entry level of achievement in a subject area and what is actually prescribed by institutions (Galligan & Hobohm, 2015).

These changes have coincided with a major shift in the conceptualisation of how issues such as transition and 'preparedness' are theorised. Lawrence (2005) describes a 'deficit-discourse shift' away from a construction of students themselves as lacking in certain competences and thus in need of remediation (p. 243). There is now increasing recognition that 'higher education institutions themselves are underprepared for meeting the needs of the changing student body' (Smit, 2012, p.374), and that characterising certain student groups as deficient only results in perpetuating inequality and exclusion (O'Shea, Lysaght, Roberts, & Harwood, 2016).

By the same token, it has also been recognised that responsibility for bridging gaps cannot lie solely with the institution. Devlin and McKay (2014) contend that there must be movement from both directions. They note that the problem with the 'blame the institution' approach is that it negates student agency. Devlin (2013) rejects 'the rather simplistic approach of advocating that either students try harder or institutions make expectations more explicit' in favour of one characterised as a 'joint venture toward bridging socio-cultural incongruity' (pp. 939, 946). Similarly, Kahu and Nelson (2018) call for a reconceptualisation of transition in terms of a dynamic 'educational interface' between the student's particular psychosocial situation and the institution (p. 59).

In the following section we summarise some of the major findings in the literature concerning effective transition program design. Of particular interest to us is Lizzio's Five Senses for Success model (2006), which provides an overarching structure for the many elements of good practice in transition program design that have been identified in studies over the years. Lizzio's model interprets transition to university in terms of five affective domains which must be developed in students to increase the chances of transition success. We put forward the *Get Ready* program, a successful pre-commencement transition program developed for a large enrolment first year Human Physiology subject at a multi-campus Australian university, as a practical realisation of Lizzio's model.

Our research question is:

To what extent, and under what conditions, can a transition program based on the Lizzio model (2006) meet the needs of a highly diverse student cohort commencing Health Science studies with this Human Physiology subject?

We find, based on preliminary evidence, that a transition program which aims to develop Lizzio's model performatively appears to have met with success in supporting the transition to university study of certain 'non-traditional' cohorts (those with low tertiary entrance rankings or identifying as underprepared in relevant science subjects). We contend that an essential factor in this success is a design which encourages students to enact key behaviours associated with each of Lizzio's five senses, and thus to begin to develop and identify as a functioning member of a new, first-year academic community, in possession of the skills and attitudes required for success.

Design of Transition Programs

Improving the student transition experience and increasing retention rates have become major priorities in universities worldwide. Understanding the issues facing students with increasingly diverse transition needs, and learning to provide effective institutional support for them, have attracted a great deal of scholarly attention in recent years. A cross section of some of the key findings are presented here.

In her final report for the UK Higher Education Academy project *What Works? Student Retention & Success*, Thomas (2012) provides a long list of criteria for successful transition programs, including: ensuring students form realistic expectations, nurturing peer connections, opening lines of communication with academic staff, inculcating a sense of belonging, and developing study skills. Significantly, Thomas notes, '[e]ffective interventions start pre-entry, and have an emphasis on engagement and an overt academic purpose' (p. 15).

Wilson et al. (2016) concur with Thomas on a number of points: they identify the first half of first semester, in particular the first few weeks, as 'the period of greatest risk of discontinuation' (pp. 1024). They find that students require assistance in learning to locate the resources they will need in order to be successful in their studies, including online and library resources; that instilling realistic expectations of the time commitment required for success in study is necessary; that opportunities for peer interaction should be provided; and that individuals' sense of 'inner resourcefulness' typically needs building and reinforcing (p.1037).

At the same time it is clear that while students should not be daunted by the content they are expected to master at university, it will be equally demotivating for them if they feel they are not learning anything. Tinto (2017) contends that students must 'find the material within [their] courses sufficiently challenging' (p. 5) and argues that '[h]igh expectations are a condition for student retention' (2002, pp. 2-3). Tinto (2017) also underlines the importance of developing help-seeking behaviour, which is construed by some students as 'an admission that they are not cut out for university', and urges institutions to promote a sense of belonging 'at the very outset of students' journey – indeed as early as orientation if not before' (p. 3).

One stream of this literature has sought to understand the particular transition difficulties faced by 'non-traditional' student cohorts. Devlin and McKay (2014) argue that students from low SES backgrounds are likely to experience 'socio-cultural incongruence' in their transition to university, arising from a lack of familiarity with the social practices, norms and discourses of academia, with which high-SES students are much better acquainted. Margolis, Soldatenko, Acker and Gair (2001) describe the difficulties experienced by 'non-traditional' students in terms of a 'hidden curriculum', by which they mean the 'skills, knowledge, and cultural grammar middle-class students from the dominant culture acquire', and observe that by 'taking for granted such knowledge and treating it as equivalent to "talent" or "intelligence," schools perpetuate an uneven distribution of cultural capital' (p. 8). Similarly, Hutchings (2006) observes that:

> Students who have prior acquaintance with the language and conventions of the institution are immediately enabled, both in their learning and their sense of identity at the institution. Widened 'access' has, however, meant that not all entrants have this familiarity and that those that do not are, therefore, vulnerable (p. 259).

Compounding such barriers, Willans and Seary (2018) report that 'feelings of trepidation upon their return to study, and low self-confidence/self-worth' coupled with a 'sense of "feeling engulfed"' (p. 53) typically characterise the experience of 'non-traditional' students commencing tertiary study.

As an overarching framework for the many and diverse criteria that have been found to characterise good practice in transition program design, Lizzio (2006) has proposed a series of five affective domains, or 'senses', the development of each of which is crucial for successful student transition. These are: a sense of *capability*, a sense of *connectedness*, a sense of *purpose*, a sense of *resourcefulness*, and a sense of *academic culture*. Students with a sense of capability have an understanding of what is required of them as first-year students, demonstrate a 'mastery of basic academic skills' (p. 2), and are actively involved in the local academic community. A sense of capability can be nurtured in students by making assumed knowledge clear and providing scaffolding and formative feedback during the learning process. A sense of connectedness refers to contact with other students, group-work skills, knowing how to access staff, but also valuing diversity and possessing a sense of belonging to the department, school or university. Under a sense of purpose, Lizzio means that students can see the relevance of what they are currently doing, both from a curriculum and from a vocational point of view, but also that students feel challenged, stimulated or even excited about what they are studying. Role models that students can identify with are an important element in developing this sense. A sense of resourcefulness refers to the 'ability to navigate the university system to get the help and information they need' (p. 2), including knowing how to access information and support services, and understanding university procedures, academic calendar milestones, and the roles and responsibilities of staff. This sense thus covers help-seeking behaviour, but also includes the ability to strike a balance between study and other activities. Lizzio understands his fifth sense, a sense of academic culture, as serving to tie all the above behaviours together, but also to include an understanding of independent learning, collegiality and academic integrity, as well as valuing critical thinking, enquiry, and 'a spirit of curiosity and openness' (p. 11).

It can be argued that the majority of the transition program design elements described above are expressed in terms of outcomes. How to achieve these outcomes is still a question of empirical trial and error. As a practical example of what it means to incorporate Lizzio's five senses into a transition program, we put forward the example of the *Get Ready* program. In particular, we focus on the aspects of its implementation which we believe led to its success, both in terms of uptake amongst target cohorts, and the improved transition experience that participants enjoyed.

The *Get Ready* Curriculum

The Human Biosciences A subject is core for some 14 Health Sciences degrees and has a total enrolment of over 1500 students per year (pre-census[1]). Over the past five years, the subject leadership group has progressively refined the curriculum, presenting the learning activities in a blended mode to expose students to a variety of learning resource formats (academic video presentations, prescribed textbook readings, figures, tables and quizzes), such that it caters to diverse learner needs. In addition, a range of support services is provided to students including subject revision seminars, additional learning resources, and check-your-knowledge quizzes with feedback that directs students to further supports depending on their performance. A particular challenge for the subject is that it is core for a very diverse student cohort. Students with low ATARs enrolled in a generalist Health Science degree sit alongside those studying Allied Health disciplines with very high entry requirements such as Physiotherapy or Speech Pathology. Furthermore, students who have studied little or no prior Biology or Chemistry share workshops with those who have completed Year 12 in those subjects. Although the unit has been designed to accommodate the absence of science subject prerequisites, inevitably there are many students who feel they are underprepared and disadvantaged compared with their peers. Additionally, we know institutionally that many of our students come from low SES areas, are first-in- family, mature-age, or otherwise from diverse backgrounds according to which they may be considered non-traditional students. The National Centre for Student Equity in Higher Education (NCSEHE), for example, lists our institution as having the highest number of low SES enrolments, both commencing and continuing, in Victoria, Australia in 2017 (NCSEHE, 2019). Additionally, tertiary entrance cut-offs for our university were ranked by the University Reviews website as equal second lowest in the country for STEM degrees in 2019 (University Reviews, 2019). The combination of these factors results in a large number of students experiencing anxiety and low self-efficacy as they commence their studies. These challenges led to the development of the subject-specific transition program, *Get Ready*.

Several weeks prior to the commencement of the subject students receive an email from subject coordinators inviting them to participate in the *Get Ready* program. This email contains a welcome letter outlining the details of the program structure, and step-by-step instructions on how to access the learning management system (LMS) site containing the *Get Ready* learning activities. We reach out to students via an email prior to their commencement on campus as we are aware that the fast-paced nature of the subject can be overwhelming and cause students to doubt their ability to manage their studies. Through this easily accessible, initially low-stakes connection with students, we set expectations for the subject early, and allow ample time to access the program well before the semester begins. We also guide students through how to access both the LMS and the learning activities by providing written, step-by-step instructions.

The *Get Ready* program itself is delivered to students primarily via an LMS site containing a suite of online learning resources which includes four five-minute videos presented by subject coordination and teaching staff, illustrated pages of content, readings from the prescribed textbook, and check-your-progress quiz questions. The online component of the program is also supported by a teacher presence in discussion forums where students can clarify concepts, and where staff are able to pose questions to stimulate peer discussion about the content and develop a community of practice in the online space. This is a similar format to that delivered during semester and allows students to gain experience in the mode of subject delivery. Students are also able to navigate the LMS in their own time and familiarise themselves with the mode of learning in the subject prior to commencement.

Before commencing the program, students are encouraged to complete a 'How ready are you to study Human Physiology' diagnostic test. This allows students the opportunity to self-assess their prior knowledge of Physiology concepts and their confidence regarding certain learning objectives. Students who obtain an overall score of at least 80% are considered 'ready' to study; however, if students obtain less than 80% it is recommended that they complete the *Get Ready* program. All students are nevertheless invited to participate in the *Get Ready* program regardless of the result obtained, thus creating an overall sense of inclusiveness in the program.

[1] In the Australian higher education system, the census date is the date by which students must withdraw from a subject to avoid fees.

The *Get Ready* program also offers students the opportunity to attend a face-to-face workshop. The face-to-face component consists of a 1½-hour workshop in orientation week, with one synchronous online session available for those who are unable to attend on campus. During workshop sessions students are grouped in teams with their peers from a range of Health Science disciplines who present with varying background Biology and Chemistry knowledge. These workshops create opportunities for students to complete ice-breaker activities and commence building important social relationships and a sense of community with their peers. During these workshops students complete learning activities, building on the content of the *Get Ready* LMS, in a format similar to that which they will experience in facilitated workshops during the semester. The structure of the *Get Ready* program is depicted schematically in Table 1.

Table 1

Schematic outline of the Get Ready program

Invitation to participate with step-by-step instructions	Diagnostic test	LMS learning activities containing: • short videos recorded by key teaching staff • illustrated pages of content containing learning activities • readings from the prescribed e-text • discussion forums led by staff • check-your- knowledge quiz • registration page for the orientation workshops	Orientation workshop (face-to-face or synchronous online)	Survey

The *Get Ready* learning activities introduce or revise key terminology associated with foundational concepts in Biology and Chemistry, such as the structure and key components of cells, chemical movements, key classes of organic molecules and the structural organisation of the body from a chemical to an organism level. In this way, students gain a basic familiarity with the most important foundational concepts and new terminology they will encounter in the first weeks of study. Although students will revisit much of this information in the first few weeks of semester, the *Get Ready* program allows them to gain confidence in a well-scaffolded, low-stakes environment.

The workshops also give students an opportunity to use appropriate scientific language when discussing concepts with their peers. Students are exposed to a plethora of new specific terminology when studying Physiology, much like learning a new language. Encouraging peer-to-peer interaction via the *Get Ready* workshops enables students to practice and gain confidence in using these key terms. Furthermore, students who participate in the workshops have the opportunity to gain familiarity with teaching staff in a supportive and responsive environment. Students are introduced to key staff members via academic presentations in the LMS or in person in the face-to-face sessions, allowing them to build an early rapport with staff. The workshops present an opportunity for staff to share their knowledge as subject matter experts with students in a 'safe' environment, in which students can feel comfortable, the communication of ideas can be nurtured, and self-esteem can be strengthened. This also creates an opportunity for staff to inspire and encourage learners, as well as promote vital staff-student networks prior to the commencement of semester.

Finally, the *Get Ready* program exposes students to the LMS and subject structure prior to the commencement of semester. Through completion of the program, students are able to familiarise themselves with how to navigate the LMS, access learning resources, as well as gaining a sense of 'pace' of study in the subject.

We now describe how each of Lizzio's five senses (2006) is developed by *Get Ready* through the enactment of key behaviours associated with student success. Other relevant literature is also referenced in doing so. In terms of Lizzio's sense of *capability*), by taking the diagnostic test and participating in learning activities that are similar to those which comprise the subject proper,

students gain a sense of what is expected of them in first-year studies. Thomas (2012) and Wilson et al. (2016) also highlight the importance of realistic expectations. Equally as significant, students' sense of self-efficacy is developed. This is referred to by Wilson et al. (2016) as 'inner resourcefulness'. By working through the learning activities, and periodically testing their understanding, students gain the confidence that by engaging with the learning activities, they will be able to overcome the sense of under-preparedness which they may at first experience. By giving students an accurate sense of the pace and difficulty of the subject content, and demonstrating to them that with the appropriate support they are able to make progress, the program seeks to instill them with Lizzio's sense of capability.

Regarding Lizzio's sense of *connectedness* the importance of building peer networks and relationships with staff is broadly acknowledged in the literature (e.g. Thomas, 2012; Wilson et al., 2016). Relationship-building can be achieved through face-to-camera video clips prepared by academic staff, through participation in (or at least vicarious observation of) the discussion forums and by being guided through the use of the LMS, with introductory instructions for those unfamiliar with it. Interaction with other students both online and in the group-work component of the face-to-face workshops assists in developing a sense of connectedness. Significantly, early contact with a number of university resources, including the physical campus and the online learning environment – as participants and not merely visitors – allows students to establish a sense of place with respect to their institution and discipline of study. Once again, this sense of connectedness is developed in large part through actually experienced interactions.

Lizzio has also stressed the importance of a sense of *purpose*. The subject content that is presented in the *Get Ready* modules is carefully scaffolded, but it is not 'dumbed down' as it incorporates elements from the first few weeks of semester, and refers regularly to the prescribed textbook of the subject proper. Providing a sense of challenge and a genuine learning experience are essential elements of student success, as identified by Tinto (2002; 2017). Thomas (2012) likewise calls for transition programs to be granted an 'overt academic purpose' (p. 15). Additionally, the early introduction to teaching staff provides students with expert role models, as representatives of possible future selves in related disciplines or professions. In particular, female students are given the opportunity to identify with role models of women as discipline experts, as close to half of the teaching staff are women, including the subject coordinators. Providing role models and developing a future identity are important elements of Lizzio's sense of purpose.

Lizzio's fourth sense is that of *resourcefulness* (2006, pp. 2). Students are required to access the prescribed text and are stepped through its use as a resource to clarify key concepts and terminology. They are also encouraged to turn to their peers and teaching staff for further clarification, initially online via the discussion forum, and later in the face-to-face orientation workshops. Thus, the virtues of resourcefulness are not simply extolled, rather students are supported in acting out some basic elements of what it means to be resourceful as a first-year university student. As an important ingredient of self-efficacy, this sense of resourcefulness also reinforces students' sense of capability. The development of resourcefulness is also broadly acknowledged in the literature as a key aim of any transition program (e.g. Thomas, 2012; Tinto, 2017; Wilson et al., 2016).

The last of Lizzio's five senses is a sense of *academic culture* (2006, p. 11). Through *Get Ready*, students are given a taste, however introductory and incomplete, of what it means to be a 'successful student' commencing university studies. They gain first-hand familiarity with the spaces, both virtual and physical, in which they will be moving, they establish contact with the academic community they are joining, and they begin to use the new vocabulary and grammar of the subject content that might otherwise be bafflingly new to them in their first weeks of study. In this way, the program aims to support students in developing their identity as active members of their new first-year academic community, and in gaining an understanding of academic culture not as something that is 'out there', but as something that has meaning for them individually, and in which they play an active role.

Enactment is a crucial element in our approach. Rather than simply being provided with information that they are somehow expected to absorb, or given examples to follow or try out for themselves, students are guided step-by-step through acting out the identity of a successful student in a range of contexts. It is this performative approach to developing student agency, as much as the extent to which Lizzio's criteria are met per se, which we interpret as being at the crux of the program's success.

Methodology

The data informing this study were collected at a number of points. Firstly, participation in the LMS component of the program was recorded in 2017 by a range of indicators, including how many students took the diagnostic test, accessed the learning activities, or completed the final test-your-knowledge quiz. Secondly, participation in the orientation week workshops was also

documented (for the period 2014-2017). Thirdly, in 2016 and 2017 students attending these workshops were given the opportunity to complete a short, paper-based survey at the conclusion of the session, in which they could indicate the extent to which they felt the *Get Ready* program had increased their confidence to do well in the subject, as well as respond to a number of other questions. Fourthly, final grades at the end of semester were compared with participation in the orientation week workshops and the degree students were enrolled in (2014-2017). This study was undertaken with the approval of the La Trobe University Human Research Ethics Committee.

For the purposes of this study, we define the target cohort as comprising students enrolled in degrees with low-ATAR[2] entry requirements (50-70), who traditionally struggle with the subject. We recognise that this is only a crude representation of at-risk students, however in the absence of detailed demographic data, it was a necessary approximation (to be improved upon in a future study). While participation in *Get Ready* was measured in a number of ways, for the purpose of determining whether participation correlated with improved final grades, we adopted the somewhat restricted definition of having taken part in the orientation week workshops. This is because it was only for the workshop attendance data that we were able to determine at-risk status (through degree of enrolment). Therefore, in the final grade comparisons presented below, *Get Ready* attendees are defined as those who attended the orientation week workshop. We acknowledge that many more students could have benefited at least partially from *Get Ready* without having attended the face-to-face workshops, and that not all workshop attendees had completed the LMS learning activities, but once again this was a necessary approximation which will be improved upon in a future study.

Results

Over the course of 2014-2017 the *Get Ready* transition program has been made available to approximately 6000 students (approximately 1500 students per-year, pre-census). LMS analytics for 2017 show that 65% of students completed the diagnostic test, and just over 50% of the full cohort accessed the learning activities. Attendance records for 2014-2017 show that some 23% of students attended the orientation week workshops. In a survey completed by students at the conclusion of the 2016 and 2017 workshops, 64% reported that they had completed 'all' or 'nearly all' of the *Get Ready* activities on the LMS. Some 77% reported that they found the program easy to use. In this survey, students were also asked about the degree to which the program increased their confidence going into the subject. Self-assessments of confidence are frequently used in measurements of the effectiveness of transition programs (e.g. Abdullahi & Gannon, 2012; Boelen & Kenny 2009; Thalluri, 2016), as confidence is understood as a measure of self-efficacy, which has been widely linked to successful retention (Bandura, 1978; Lawrence, 2005). On a five-point Likert scale from 'not confident at all' to 'very confident', 43% of students selected the top two categories, which we interpret as a very favourable result. In 2017 surveys, students provided feedback through Likert responses (1-5) to a range of statements, with an average rating of 3.95 for the statement 'I feel less anxious about my transition … after attending'; 4.18 for the statement, 'This session helped me have a better understanding of the services and resources available' and; 4.19 for the statement, 'This session introduced ways that will assist me to create a successful experience at university.'

We were particularly interested in the impact of *Get Ready* on targeted at-risk cohorts. As noted, for the purposes of this study we define target cohorts as comprising students enrolled in degrees with low-ATAR entry requirements (50-70), who traditionally struggle with the subject. Very close to 50% of the overall enrolment each year belonged to this target cohort. End-of-semester data indicate that students who participated in the *Get Ready* workshops were more likely to receive a higher grade (A or B) and less likely to receive a lower grade (C, D or N) than their fellows who had not taken part (Figure 1). This result is even more pronounced when considering the target cohorts (Figure 2). These results are consistent with our assertion that *Get Ready* provided an improved transition experience for at-risk students.

[2] Australian Tertiary Admission Rank

Figure 1

Overall performance of Get Ready attendees vs. non-attendees (2014-17)

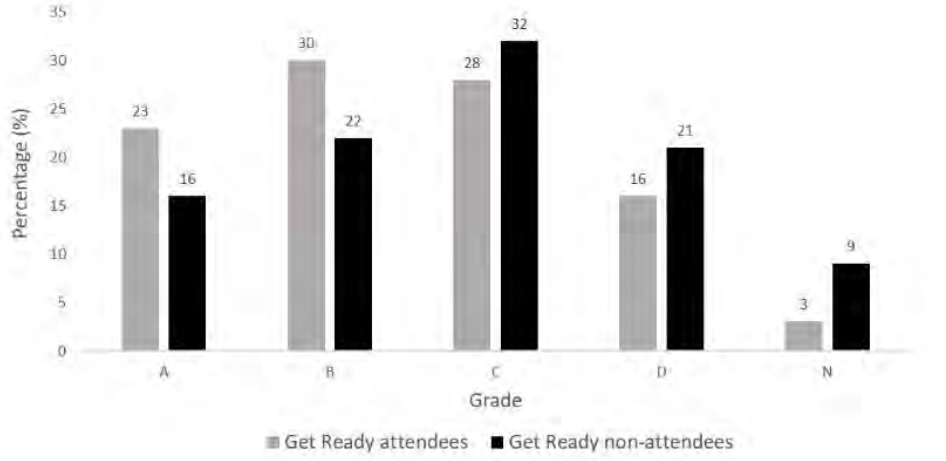
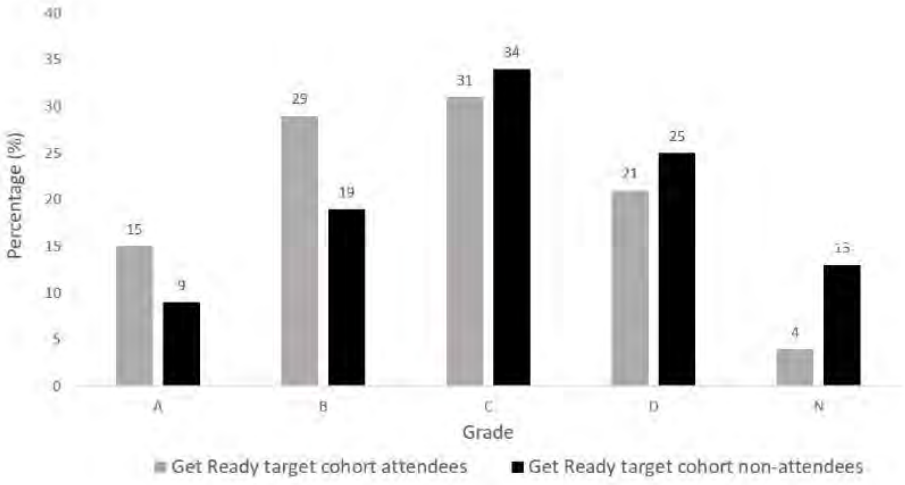


Figure 2

Performance of target cohort Get Ready attendees vs. non-attendees (2014-17)



Further research is required to confirm this conclusion, and indeed a subsequent study of the 2018 iteration of *Get Ready*, which included more comprehensive demographic data and the expansion of the program to two other large first year science subjects at the same university, will be reported on in detail at a later date. Preliminary results of this study are, however, consistent with the above conclusions, even if they are not directly comparable. In the 2018 study, the degree of LMS access is used to measure participation, and the availability of demographic data means that more specific target groups can be investigated, and enrolment in a low-ATAR degree no longer needs to be used as a proxy for being an at-risk student. Defining a target cohort as consisting of students with low personal ATAR (less than 70) and/or coming from a low-SES postcode and/or being first-in-family at university, and participation as accessing at least some of the *Get Ready* LMS, provides the following grade

distributions for the whole cohort (Figure 3) and the target cohort (Figure 4). Perhaps owing to the broader definition of participation, the differences between attending and not attending *Get Ready* are not as stark as those described above. Nevertheless, the correlation of higher grades with participation, and lower and fail grades with non-participation, is still apparent, particularly in the case of the target cohort. The 2018 data refers to an overall cohort of 1443, of which 561 were identified as being in the target cohort.

Figure 3

Overall performance of Get Ready attendees vs. non-attendees (2018)

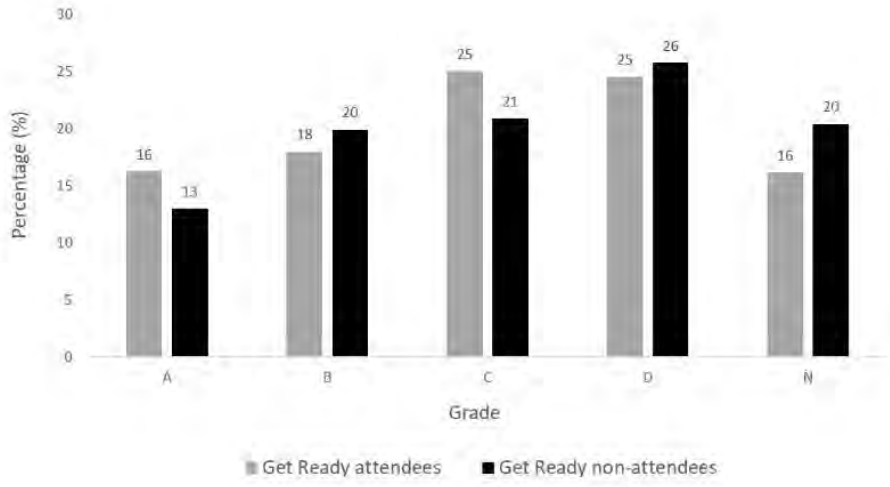
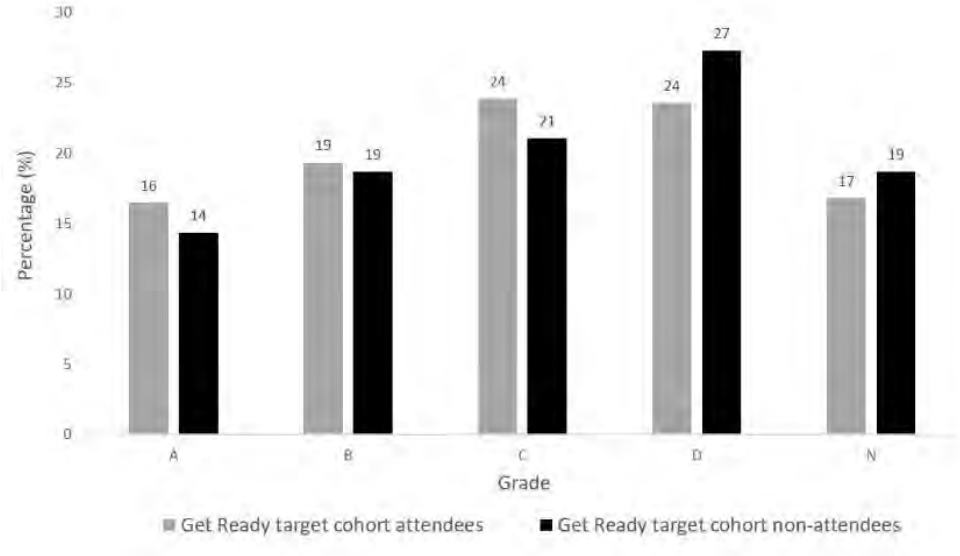


Figure 4

Performance of target cohort Get Ready attendees vs. non-attendees (2018)



Discussion

These preliminary results are encouraging and support the proposition that *Get Ready* has succeeded in engaging and facilitating the transition to higher education studies of certain at-risk students: those with low tertiary entrance rankings and/or with little or no prior study in Chemistry or Biology. Because the program design corresponds closely to the recommendations of the Lizzio five senses model our study is an evaluation of a practical implementation of the Lizzio model.

We now revisit Lizzio's model, with the aim of evaluating the effectiveness of the *Get Ready* program in developing each of the five senses. We begin with the sense of *capability*. Two important components of Lizzio's sense of capability are realistic expectations and self-efficacy. Through the provision of the diagnostic test at the commencement of the program, the use of content from the first few weeks of the subject proper, as well as the approximate replication of the subject's learning design (LMS, group-work in workshops), students are given a range of opportunities to develop realistic expectations about the level and pace of the subject delivery. We know that nearly two-thirds of the full cohort took the diagnostic test, and just over half accessed the LMS learning activities. Some 23% of students attended an orientation week workshop. Anecdotally, many students testify that they found *Get Ready* useful in setting expectations. In the 2017 survey, for example, one student commented, 'Today[']s class was great to get an idea of what the workshops will actually be like and it was a good way to meet/work with fellow peers.' Another reflected that s/he had, '[f]ound [the] course helpful in building knowledge of what to do in [the subject]'. In particular, we wanted students to experience first-hand that by completing the learning tasks developed for them, they are able to make progress, and overcome perceived deficits. Some 39% of students completed the test your knowledge quiz and would thus have had the opportunity to experience this sense of progress. While the workshop attendance rate, and some other indicators, may appear somewhat low, it should be noted that *Get Ready* was targeted at certain at-risk groups (though available to the entire cohort), and that in-act anyone scoring over 80% in the diagnostic test was advised that there was no need to proceed to the LMS learning activities, or to come to the orientation week workshops. We are therefore confident that these participation rates are a good indication that the program is meeting its aim to impart realistic expectations to students.

In any case, a more telling indicator for the development of Lizzio's sense of capability, we argue, is increased confidence. As mentioned, some 43% of students surveyed between 2014 and 2017 selected the highest or second highest Likert category in response to a question about the degree to which the program had increased their confidence about being prepared for the subject. This is reinforced by student comments. In the 2017 orientation survey one student observed: 'As someone who has never studied biology or chemistry, this program has helped heaps.' Reflecting the role of realistic expectations within the sense of capability, another commented that 'I'm confident that I can learn, but currently I'm pretty much terrified'. As has already been noted, the *Get Ready* program was developed primarily to support students who felt underprepared in Chemistry and Biology, and thus were anxious about commencing their Health Sciences degree with a 'difficult' Human Physiology subject, as well as those with low tertiary entrance rankings, who would likewise typically be experiencing low self-efficacy in grappling with the unit. The strong results for increased confidence are therefore a good indicator that *Get Ready* has been successful in developing students' sense of capability.

Lizzio's sense of *connectedness* is addressed by the program in three ways. Firstly, students are encouraged to build relationships with their peers, primarily through the group-work in the orientation week workshops, but also by participating in or just observing interactions prior to that in the LMS forum. Secondly, relationships with staff are fostered through short face-to-camera content videos in the LMS featuring key teaching staff, via staff reactions and prompting on the LMS forum, and finally through staff facilitation of the orientation week workshops. Thirdly, the program is designed to develop in students a sense of place, by bringing them onto campus and into classrooms pre-commencement, but also by familiarising them with the online space of the LMS, the 'place' where much of their learning will take place. As noted, in 2017 nearly two-thirds of all students accessed at least one element of the LMS, some 24% of the total enrolment accessed the discussion forum, and slightly fewer came to an orientation week workshop. These are clear indications that students are engaging with those elements of the program aimed at building their sense of connectedness, especially as it is only a subset of the cohort that the program targets. While online or on-campus presence does not necessarily equate with a sense of connectedness, anecdotally we can report that students who come to the orientation workshops are very active, and rapport with staff is good. By the same token, improving participation rates is potentially an area where more could be done in the future to enhance the program. Furthermore, while students' sense of connectedness is difficult to measure directly, publicly available QILT (Quality Indicators for Learning and Teaching) data may provide at least some indication in this regard. QILT data from 2015 and 2016 show that on the engagement scale, aggregated over a number of Health Science fields of education, our institution performs significantly better

than the national health sector average (by 5.9 percentage points), but also that our Health Science disciplines outperform the institutional average (by 4.2 percentage points) (Naylor, 2017). While the contribution of a transition program in a single subject (albeit one that is core to nearly all health science degrees in our institution) to students' overall sense of connectedness can only be small, these figures are nonetheless consistent with our assertion that the program nurtures connectedness.

In terms of addressing Lizzio's sense of *purpose*, *Get Ready* has a clear academic objective in providing assistance to students who feel underprepared for and/or anxious about commencing the study of Human Physiology in their Health Science degrees. The program maintains a sense of challenge by appropriately scaffolding, but not 'dumbing down' material that students will encounter in the first few weeks of class. As demonstrated by the relatively high participation rates in what is after all an optional program, we argue that the short-term purpose of *Get Ready* is clear for students. On reflection, however, it is possible that more could be done to develop a longer-term sense of purpose. As a generalist subject embedded into many specialist Health Science programs of study, the relevance of its content to specific disciplines or degrees may not always be obvious for students. Although *Get Ready* is only a short program, more could possibly be done in the curriculum to highlight to students why the selected topics are of relevance to their chosen degree programs. This might be expected to improve the development of a sense of purpose in students, in the context of their Physiology studies.

We have also identified that the relationship with teaching staff has an important role to play in developing students' sense of purpose. Appropriately selected tutoring staff provide a positive role model of a more senior but not-too-distant member of the knowledge community that students are joining. As mentioned previously, one of the aims of the program is to develop early relationships with teaching staff. Being able to make a positive impression on and relate well to students are major selection criteria for teaching staff in the subject, and hence also in the *Get Ready* program.

The main *resourcefulness* behaviours that the program aims to develop in students are to overcome the misconception that seeking help is an admission of failure; to use the textbook as a resource for clarification and reinforcement of concepts, not as a daunting repository of 'everything I need to know'; and for students to be comfortable in turning to their peers and teaching staff to seek further explanation, test understandings, and receive feedback on their developing discipline expertise. In the 2018 orientation week survey, some 80% of students indicated that they already had access to the textbook. While the extent to which they used it was not measured directly, the exercises in the online learning resources could not be completed without retrieving key definitions and explanations from the textbook. It can thus be inferred that a significant proportion of students did make use of the textbook as intended. As already stated, we also know that 23% of students did participate in the orientation week workshops. These function similarly to workshops in the subject proper, requiring students to work in groups to solve problems, with teaching staff assisting as required. Participating students would therefore have begun to enact basic help-seeking behaviours which make up Lizzio's sense of resourcefulness. Anecdotally we can report that the workshops are very noisy during the group-work tasks, and students are active in seeking help from facilitators. This is an informal but nevertheless persuasive measure that students are exhibiting resourcefulness behaviour at this early stage of their academic lives. Finally, workshop participants also gave a high rating to the statement: 'This session helped me have a better understanding of the services and resources available'.

Lizzio indicates that his fifth sense, *academic culture*, brings together and is central to the other four. Like Wilson et al. (2016), we interpret this sense in terms of building a new identity as a student commencing higher education in possession of the skills and attitudes required for success and identifying positively as a novice member of a new academic community. As a summative indicator, the best measure for how well the program develops this sense is the final grade results. We have shown that participation in *Get Ready* is correlated with an upwards shift in the grade distribution.

In summary, we argue that each of Lizzio's five senses is developed, to varying degrees, through participation in the *Get Ready* program. Good results in increased confidence and final grade distribution are indicative of success with the senses of capability and academic culture respectively. High self-reported access to the textbook is one indicator that the program was successful in building resourcefulness behaviours, and good participation rates are indicative that the program spoke to students' sense of purpose. At the same time, this evaluation has led to the conclusion that more could possibly be done to encourage participation in the orientation week workshops (senses of connectedness and resourcefulness), and that learning activity topics could be linked more clearly to specific disciplines (sense of purpose).

While it might be tempting to think that our study could provide insight into whether some of Lizzio's senses are more significant than others when it comes to ensuring transition success, in fact that would require a comparison of multiple program

designs, which lies outside the scope of this study. In any case we would argue that Lizzio's senses are interrelated, and that it would be quite difficult to test them separately.

The most significant factor in the *Get Ready* program's apparent success is the focus on supporting the actual enactment of behaviours associated with transition success, as identified in the scholarly literature. We have used Lizzio's five senses model to illustrate how conclusions concerning best practice in transition program design can be integrated in a performative way into a transition program. Supporting students in building self-efficacy by acting out behaviours such as resourcefulness and connectedness can help form their identity as a functioning and valued member of a new academic community, and is the key, we believe, to designing a 'joint venture toward bridging socio-cultural incongruity' (Devlin, 2013, pp. 946).

This preliminary study clearly has a number of limitations. One is that these results were only measured in the case of a single subject in a single institution, albeit a subject with a very large enrolment with data collected over four years, and with a similar study finding comparable results in the fifth year. Another limitation is that there is no way to control for self-selection error, according to which more conscientious students, who would do well anyway, self-select into the *Get Ready* program. Relatively high participation rates, as noted above, go some way to mitigate against such a conclusion. Finally, defining our target cohort according to the degree students are enrolled in is at best an approximate measure of risk of attrition or failure.

Conclusion

Get Ready provides a compact, scalable, and (based on initial evidence) effective program for supporting the transition to university studies of a highly diverse cohort. Though subject-specific, once the initial resources have been developed its workload demands are relatively low (e.g. the 2018 expansion was achieved with 40 hours of developmental workload in each new subject, and subject coordinators manage their local *Get Ready* programs within their existing workload allocations). The program was designed to improve the success and retention of at-risk student groups, and we have argued that by staging it in the weeks before semester when commencement anxiety is likely to be high, by crafting a low-stakes, 'safe' participation environment which students can join without fear of social censure, as well as by incorporating a comprehensive range of best practice elements, and in particular by structuring the program to ensure that students engage in these elements performatively, it appears to be meeting this goal.

As we have been at pains to note, the fact that only limited data were available for this study means that our conclusions can only be considered preliminary. While the results of a more comprehensive 2018 study will be forthcoming, we nevertheless feel justified in concluding at this stage, in reference to our research question, that a transition program based on the implementation of Lizzio's five senses model has in our case led to improved transition outcomes for a highly diverse student cohort.

Above all, we have striven to design a program which approaches diversity not from a deficit point of view, but as a joint venture between institution and student (Devlin, 2013). While content is certainly a major component of the program, the emphasis is not on what students do not know, but rather on building self-efficacy and agency, demonstrating approaches to content that construct learners as members of a community, working collaboratively with their peers and teachers, and drawing on the resources that the institution makes available to them, to make the most of the opportunity provided by their entry into higher education.

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