

# **Admission and success for low SES university students**

**Report on a HEPPP 2018 National Priorities Pool Project**

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This report is in the format of an edited book. The whole report should be cited as:

Kember, D & Ellis, R. A. (Eds.) (2022). *Admission and success for low SES university students: Report on a HEPPP 2018 National Priorities Pool Project*. Canberra: Department of Education, Skills and Employment.

It will be more informative if citations refer to chapters within the report. For example, Chapter 1 can be cited as:

Kilpatrick, S. & Fischer, S. (2022). Literature review. In D. Kember & R. A. Ellis (Eds.). *Admission and success for low SES university students: Report on a HEPPP 2018 National Priorities Pool Project*. Canberra: Department of Education, Skills and Employment.

The final draft version of the report was submitted to DESE on 30/11/2020.

The Final Research Report was accepted by DESE on 26/2/2021.

The Final Research Report was approved for public release by the Acting Minister for Education and Youth, the Hon Stuart Robert MP on 25/1/2022.

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## Chapter 9

### **The model of higher education as a major factor in the admission and success of low SES students**

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#### **The traditional to contemporary spectrum**

The conceptualisation of a spectrum from the traditional to contemporary models of higher education is the major conceptual theme which brings coherence to the whole of Part B. The purpose of this final chapter in Part B is to discuss the implications of the spectrum of models on the overall topic for the project. The title of the project is *Admission and success for low SES students*. The chapters in Part B have examined the impact of a university's model of higher education on admission, retention, and success. They show that retention and success are complex phenomena in which a range of variables, including SES status, act in concert to play a part.

In this chapter admission is considered first. The previous chapters in Part B are reviewed to draw out conclusions about how the model a university adopts can enhance its ability to attract and admit low SES students. The conclusions are also relevant to other disadvantaged groups and to students facing what we call multiple associated challenges.

The latter part of the chapter examines retention and success. As universities move across the spectrum from traditional to contemporary models, modes of teaching and learning become more flexible, and a more diverse student body is recruited. The SEM modelling shows that shifts across the traditional to contemporary spectrum increase the complexity of the model of higher education. This means that more sophisticated and more holistic support strategies are needed to promote retention and success.

It is important to note at the outset that universities have differing missions. The chapter will conclude that the further a university shifts across the traditional to contemporary spectrum, the greater its ability to recruit low SES students. This does not, in any way, imply that all universities should shift to a contemporary model to admit as many low SES students as possible. It is entirely appropriate that universities adopt a model of higher education which is consistent with their mission. For those with a mission to attain a high international ranking, a more traditional model is entirely appropriate. This will tend to mean that they admit less low SES students than those with contemporary models.

#### **Increasing flexibility in mode of teaching and learning**

A key feature of the contemporary model is that the mode of teaching and learning is more flexible than the traditional model. The greater flexibility is necessary to enable a more diverse student body to be able to study. The flexibility is needed so that students have reasonable degrees of freedom over when they study, and flexibility to study where they choose.

#### ***Part-time study***

In the original traditional model, followed in the era of elite higher education, all students studied full-time. They were required to attend all classes deemed necessary for the completion of the requirements for their degree.

Full-time study prohibited many potential students from enrolling. It is notable that, in elite university systems, students are predominantly recent school leavers in the 18 to 24 year age range. More mature students are commonly unable to afford to study full-time due to employment, carer responsibilities, and the need to support families. Many low SES students in all age groups also find full-time study a challenge, as they need an income to support themselves.

The possibility of part-time study is, therefore, a necessary provision if universities are to expand their intake to encompass a more diverse student body.

### ***Online learning***

Online learning offers flexibility over when and where study takes place. Online learning is predominantly asynchronous, which permits study at times which suit the students. This means that students can study at times when they are not working or fulfilling carer responsibilities.

Online learning is a form of distance learning. This means that study can take place without the need to relocate to the proximity of a campus.

### ***Blended learning***

Nowadays forms of teaching and learning can be envisaged as a continuum from fully on-campus to fully online; in other words, there is a range of forms of blended learning. Greater proportions of material online tend to offer students more flexibility.

### ***Regional campuses***

Chapter 7, which discussed the Wollongong model, included three case studies of students at regional campuses. The case studies make it clear that the three students were unlikely to have enrolled to study at the main Wollongong campus. The regional campuses permit study at locations convenient to the students in the area. The case studies also suggest that the small regional campuses offer modes of teaching and learning, and a supportive environment, which cater well to mature students.

## **Permitting the enrolment of a more diverse student body**

The three key elements of the Open University model, which was radically different to that of conventional universities at the time, were: open entry; modes of teaching and learning which permitted study off-campus at locations which suited the student; and, asynchronous modes of study which permitted a degree of flexibility over when study took place. Though, it should be noted that there were restrictions on timeframes for study in the form of deadlines for assignments and some other activities.

Models of higher education at the contemporary end of the spectrum are consistent with the elements of openness introduced by the Open University. In a similar way, Australian universities which have adopted a model near the contemporary end of the spectrum have been able to admit a more diverse body of students.

The case studies in Part B show that the contemporary model enables universities to enroll students with a wide variety of characteristics. This includes students of the following types.

- Students from low SES family backgrounds.
- Students who would currently be classified as low SES.
- Those who live in regional and remote locations, many of whom choose to study from their homes, rather than relocate to study on-campus.
- Mature students.
- Students in full-time or part-time employment, many of whom need the income to support themselves and their families.
- Those with carer and family responsibilities.
- Students with one or both parents who were not educated at the tertiary level.
- Those who were brought up in areas with low tertiary participation rates and educated in schools with limited traditions of proceeding to higher education.
- Students who were not high achievers at school.
- Those from a non-English speaking background.
- Indigenous students.
- Those with disabilities.

The student body in a university which has adopted a model towards the contemporary end of the spectrum is much more diverse than that for universities which have retained a traditional model.

**Recommendation 9.1: Universities which have made significant shifts across the traditional to contemporary spectrum may need to rethink aspects of their policies and practices, particularly with respect to student support, as the student body becomes very diverse, and have differing needs to those in a traditional model university.**

## **Multiple associated challenges**

Both the SEM models and the qualitative case studies show clearly that these characteristics do not act in isolation as single factors. The SEM models show that there are often strong intercorrelations between variables, and that they act together in a coherent model. The case studies graphically illustrate the array of interconnected issues students have to cope with.

There are six identified equity groups.

- Those from a non-English speaking background;
- Students with disability;
- Women in non-traditional areas;
- Those who identify as Aboriginal and Torres Strait Islanders;
- Students from low SES locations, based on the statistical areas of permanent home residence; and
- Those from regional and remote locations, based on statistical areas of permanent home residence.

The students in the diverse student body admitted by universities following a contemporary model face many forms of disadvantage or challenge not in this list. The section above lists some of the more common challenges. Furthermore, the case studies show that the students commonly face multiple challenges which act in concert. We have labelled this phenomenon **multiple associated challenges**.

The term multiple associated challenges was derived from an analysis of the case studies presented in this report, as well as others not reported here. The case studies show that the students commenced the study with a broad array of issues arising from personal, family and employment commitments. They also had to adapt to online study at a distance from a university campus, which most had not experienced before. We contend that the term multiple associated challenges is a better descriptor of the construct than the alternative of ‘cumulative disadvantage’, which has been used by some in the equity literature. The case studies gathered in our project showed no evidence of disadvantages or challenges accumulating. To the contrary, students began their courses with the whole array of challenges acting in concert.

There was evidence in the case studies of students learning to adopt coping strategies to deal with the multiple challenges. The literature on retention recognizes the importance of part-time students adopting a variety of coping strategies early in their course to cope with conflicting demands on their time (Kember, 1999; Kember et al, 2005; Yum, Kember & Siaw, 2005). No doubt, there were also many students, who we were not able to interview, who were unable to adopt successful coping strategies, who became part of the early attrition statistics.

This concept of multiple associated challenges seems to be useful in highlighting the issues faced by the diverse student body in universities which have adopted the contemporary model. It complements the list of six defined equity groups, by showing the challenges faced by the now diverse student body are wider. The notion of multiple challenges acting in concert is also important, as it shows that disadvantages or challenges should not be envisaged in isolation. Support services have commonly provided separate support schemes for the six defined equity groups.

**Recommendation 9.2: Compartmentalisation of support strategies and services is unhelpful, as students experience multiple associated challenges acting in concert.**

## **Performance of low SES students**

In the UTAS model, SES had the smallest standardised coefficient linking it to the intervening variables. In other words, of the variables in the model, SES status had the least impact on the outcome measures. SES also had no significant intercorrelations with the other presage variables. The models for the other three universities were similar with respect to SES. The standardised coefficients for the paths from SES to intervening variables were all small. Intercorrelations with other presage variables were either small or non-significant.

The modelling is, therefore, showing that SES has limited impact on success. Once admitted, low SES students do just about as well as those in other SES categories. This is an important finding, since it should encourage the pursuit of equity targets through the enrolment of low SES students. If low SES students can be persuaded to enrol, they should perform as well as other students.

### ***SES should not be treated in isolation***

The concern for the success of low SES students presumably stems from studies which have treated it as a single variable, or compared groups of low SES and non-low SES students. The Productivity

Commission report (2019), for example, includes several graphs comparing various outcomes for low and higher SES groups. These show differences between the two groups, though it should be stressed that the differences are small.

Other reports have noted the importance of statistical controls for other variables. Two recent national studies have looked at the relationship between many variables, including SES, and retention, completion, and success in Australian higher education. The final HESP report (HESP, 2017) performed an ordinary least squares linear regression analysis between attrition rates and a set of student characteristics. SES explained just 0.29% of the variance. The authors point out that it is important to note that this was a bivariate relationship, which is likely to be an overstatement, as other factors were not controlled for.

The Grattan Institute report (Cherastidtham, Norton, & Mackey, 2018) states that, if other variables are not controlled for, students in the lowest SES decile have a significantly higher risk of not completing than those in the top decile. However, if there are statistical controls for other relevant variables, the difference in completion rates between low and high SES students is considerably lower.

The modelling in this project employed a very sophisticated form of statistical control: SEM. It showed that, if other pertinent variables are included in the model, it is their combined effect which is important. Further, low SES status had the least impact of all the variables included in the model.

**Recommendation 9.3: Quantitative research into the effect of SES status on success, should use techniques which can handle complex multivariate phenomena. Structural equation modelling is such a technique.**

The qualitative case studies were derived from interviews which took a wide and open perspective. They, therefore, gave insights into a wide range of factors impacting upon students, which were not recorded in student record databases; so could not be included in the SEM analysis.

The SEM models indicated that SES status per se did not have a major impact on retention and success. Rather than thinking of SES status as an isolated single variable, it is more appropriate to consider retention and success in terms of multiple variables and associated challenges. Boosting tertiary enrolment, following the introduction of the demand driven system, resulted in the broadening of the student body. There was a significant expansion in the intake of low SES students, but the students brought with them a range of other variables and challenges pertinent to retention and success. SES status may, though, be associated with the multiple associated challenges faced by students in a more diverse student body. These challenges act in concert, and success depends upon dealing with them holistically.

The literature review (Chapter 1) was also consistent with this position. It pointed out that low SES students typically face multiple intersections of disadvantage.

### ***Inclusive schooling equips students for higher education***

Another possible contributor to low SES students not underperforming other groups could be the inclusive school system in Australia. The Australian education system sees social equity and inclusiveness as a high priority (Loughland & Sriprakash, 2016; Rizvi & Lingard, 2011). The aim of the Australian school system is to provide a high quality education to all. If the aim is approached, all students should be reasonably well prepared for higher education. SES, therefore, may not have a major impact on students' ability to cope with higher education.

The attainment of mass higher education has widened the entry to universities. This surely must have had some effect on the preparedness of low SES students for higher education. There is now an expectation that a substantial proportion of secondary school students will proceed to higher education. This expectation must have had some impact on both the attitudes of student cohorts and the sorts of preparation provided by schools for further study.

The literature review (Chapter 1) reports a study by Li & Dockery (2015). The results of the study could be interpreted as suggesting that schools generally are close to being equal in their ability to prepare students for university. It is worth reiterating the authors' conclusion that "most school characteristics and school resourcing measures do not appear to have any substantial or meaningful impact on students' performance in university" (p 92).

**Recommendation 9.4: Recruitment of low SES students to meet equity targets should be encouraged as, if proper statistical controls are employed, their performance is just about as good as other SES categories.**

## **Recruitment of regional and remote students**

The variable for remoteness in the SEM models was derived from the students' term address. The SEM models, therefore, examined the effect of students studying in remote locations. It was common to find significant intercorrelations between remoteness and other presage variables. This implies that regional and remote status affects the choice of mode of study, proportion of full-time load undertaken, and admission category.

The case studies graphically show that regional and remote students commonly face other issues: the multiple associated challenges. Case studies also suggest that many of the regional and remote students would not have been able to enroll if they were unable to study at a distance. The availability of online learning is important for the recruitment of regional and remote students. Relying on remote students to relocate to study on-campus will substantially reduce the numbers of regional and remote students able to be admitted.

It is, therefore, interesting that there are some major reports referring to regional and remote students (Commonwealth of Australia, 2019; Productivity Commission, 2019) which make no reference to online study as a means by which regional and remote students are able to undertake university study. The reports instead assume that students will relocate to study on-campus. There is also extensive discussion of the support which is needed once the relocation has taken place.

**Recommendation 9.5: Boosting participation of regional and remote students can be achieved through the provision of online learning.**

## **The model of higher education is what determines whether students will apply**

This chapter has argued consistently, from a range of angles, that the position on the traditional to contemporary spectrum is a major factor in admissions. The adoption of a model close to the contemporary end of the spectrum has enabled universities to markedly diversify intakes. Table 3.1 clearly shows that, as universities shift their model across the spectrum, the demographic characteristics change markedly.

This suggests that the nature of the model adopted by a university has a major impact on whether students choose to apply. Students are only likely to apply to a university if they believe the model for content delivery is compatible with their other commitments. The most obvious example, which has recurred through the report, is the provision of online learning. There are students who are



unable or unwilling to study on-campus because of carer responsibilities, employment demands or because they live remotely from a university campus and are unwilling to relocate. There are also students who prefer the flexibility of online learning. These types of students are unlikely to apply to universities which offer only on-campus modes of study. If potential students do not believe that a particular university can cater for their needs, they are unlikely to apply. If potential students think their lifestyle is not compatible with studying according to a university's model, they are unlikely to apply.

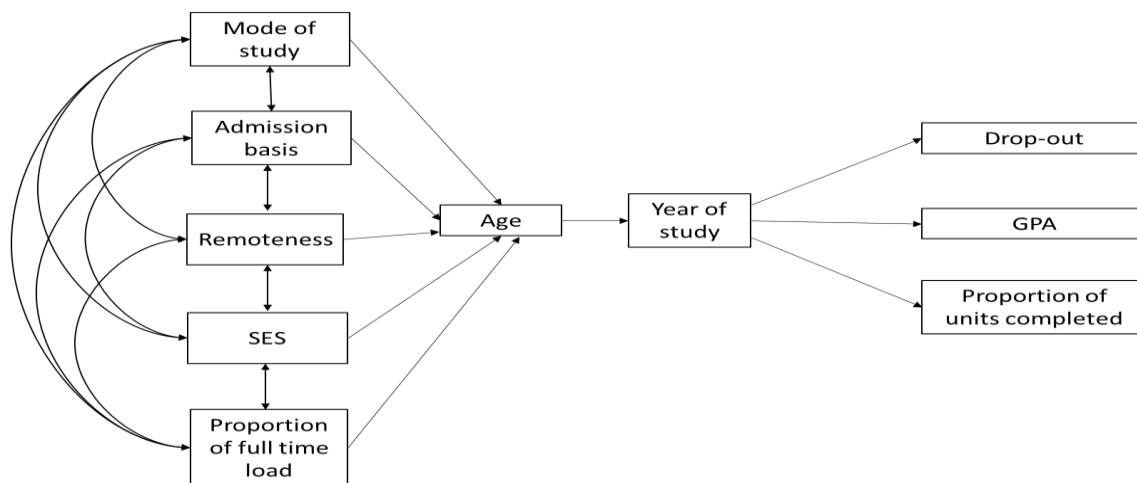
**Recommendation 9.6: Recruitment of low SES students and those who face multiple associated challenges can be made possible by the adoption of a model of higher education near the contemporary end of the spectrum.**

## **Retention and success are complex multivariate phenomena**

This study used structural equation modeling (SEM), a statistical technique which can be used to examine complex patterns of interactions between many variables in real-life phenomena. The goal of structural equation modeling (SEM) is to determine the extent to which a theoretical model is supported by the sample data collected to test a set of hypotheses (Schumacker & Lomax, 1996). In SEM, if the theoretical model is not supported by the sample data, the original model can be modified and then tested again or alternative theoretical models can be posited, developed and then tested. An attractive feature of SEM is its ability to consider simultaneous equations with multiple variables in addition to the recognition of the importance of accounting for measurement error (Bollen & Long, 1993). Another attractive feature of SEM is its use of diagrammatic representations to present the models that are being tested. This makes it possible to communicate findings to non-specialists, in forms which are readily comprehensible. SEM models can incorporate both sets of variables and complex constructs, which are formulated as latent variables or factors. Data for SEM commonly comes from databases of variables or questionnaires which involve likert type responses to items, which contribute to latent variables.

The hypothesised SEM model, used as the base model for the four universities, included five presage variables, two intermediate variables and three outcome measures. It was hypothesised that all possible intercorrelations between the five presage variables were significant. The base model hypothesised that the presage variables influence the outcome variables in a path model via the two intermediate variables. The formulation of the hypothesized model, and the literature related to it, was discussed in detail in Chapter 3.

**Figure 9.1; The hypothesized base model**



The final models for each of the four universities were similar to the hypothesised base model. Those for Melbourne and Wollongong did not include mode of study, as universities did not enroll students in degrees offered in the online mode. The final models added additional paths to the base model. The further the universities had shifted across the spectrum towards the contemporary model, the more paths were added, and the more complex the models became. All of the final models had fit indices which indicated that they were a good fit to the data. The models, therefore, provide a valid representation of how retention and success are affected by the interacting effects of a set of variables including SES. The models show that retention and success are complex multivariate phenomena.

**Recommendation 9.7; As retention and success of low SES students are complex phenomena, research techniques used in their investigation need to be able to deal with multivariate phenomena. SEM is a recommended statistical technique and case studies have proved to be a valuable qualitative approach.**

***Complexity of the models of retention and success***

Though the models are complex and multivariate, they are simplified versions of reality. The models were restricted to variables readily available in the universities’ student record databases. The case studies show that students are commonly impacted by a wide range of factors: multiple associated challenges, which are not routinely recorded as variables in student record databases. Furthermore, these multiple associated challenges act in conjunction with each other.

Most significantly, the models take no account of the processes which take place during the course of study. As discussed below, models of retention and success cannot be realistic if they do not include processes of teaching and learning, and student engagement. Also important are constructs such as motivation, and resilience. These constructs are of the type which SEM examines with latent variables, which are usually measures with Likert-scale questionnaires. However, there first needs to be research which identifies the nature of the construct in a valid and reliable way.

**Recommendation 9.8; Strategies to promote retention and success of low SES students need to take into account the complex multivariate nature of the phenomena.**

There are longitudinal process models of attrition, which do theorise that retention and success are significantly impacted by constructs which come into play during the period of study for the degree. The most highly cited of these is that of Tinto (1975, 1987, 1993). Tinto's model introduced the concepts of social and academic integration as being necessary if retention and success are to be enhanced.

The limitation is that these models were based on research which took place at the time of elite higher education. Strategies were developed for promoting social and academic integration, which have been reported in the first year experience (James, Krause & Jennings, 2010; Kuh, Cruce, Shoup, Kinzie & Gonyea, 2008), and student engagement (Trowler, 2010) literatures. However, these strategies were developed at a time when study was predominantly on-campus. There has been limited research into how social and academic integration can be achieved for today's very diverse student body, which does not predominantly study on-campus.

**Recommendation 9.9: There needs to be research into how the constructs of social and academic integration can be translated to apply to the contemporary model of higher education.**

## **The impact of COVID-19**

This chapter concluding Part B has argued that the shift towards the contemporary model of higher education, and particularly the adoption of online learning, have had profound effects on retention and success. The shifts across the traditional to contemporary spectrum, investigated in this study, have taken place over an extended period of time. We suspect that, in many cases, a gradual drift has taken place. There was often surprise expressed by those who were shown Table 3.1, reporting the demographic characteristics of the four universities in the study. The surprise was how much the contemporary model had departed from the traditional one. This suggests that universities could have drifted further across the spectrum, and changed their model more markedly, than they realised.

These gradual drifts across the traditional to contemporary spectrum have had significant effects on retention and success. A major part of the issue is the high incidence of online learning in the contemporary model. It is certain, therefore, that the current seismic shift, which is taking place in a very short space of time, due to COVID-19 will have profound, and often unanticipated, outcomes. The rapidity of the current transformation is compounded by the change to online learning being put into place by teachers who often have little or no experience, or expertise, with the mode. The students may have some experience of blended learning, but often little or no experience of learning fully online. These seismic shifts are taking place at a time of major social, economic and health disruptions.

Universities realise that the current situation is having a profound impact on teachers and students, though quite what the outcome will be is hard to predict. The conceptual frameworks offered by this study may help in the interpretation of impacts and outcomes at this time of momentous change.