

Pathways to tertiary education: Studying University enabling programs while still at high school

Dr Lynette Vernon - National Centre for Student Equity in Higher Education, Curtin University; Murdoch University;

Professor Andrew Taggart; Dr Stuart J. Watson; Sarah Seddon – Murdoch University

University participation rates have been found to be significantly lower in low socioeconomic status (SES) areas in Australia, particularly where there is unequal access to academic programs. TLC-110 is an enabling, pre-access program designed to provide a pathway to university for Year 12 students from low SES backgrounds, who may not qualify via direct entry with an Australian Tertiary Admissions Rank (ATAR). TLC-110 students attend university style lectures and tutorials after school, for 30 weeks and develop critical thinking skills and self-directed learning. This report outlines the rationale, structure, and outcomes of TLC-110 which has successfully transitioned students from low SES backgrounds into university from 2011. Survey results showed TLC-110 students reported higher university aspirations, expectations and beliefs than other pathway students. The benefits of university enabling programs to support aspirations when students from low socioeconomic status backgrounds experience limited opportunities to access a direct academic entry pathway are discussed.

Project description

Murdoch University's enabling, access program TLC-110 (Teaching & Learning Course for University) provided an alternative entry pathway to university for Year 12 students while still at school. This enabling program was not funded as part of Commonwealth-supported places but supported through a federal government grant to raise aspirations for students from low socioeconomic status (SES) backgrounds. The aims of this enabling program were similar to other enabling or access programs across Australia and the UK; to increase familiarity with university, preparedness for university, and empowerment to access opportunities for university study (Bennett et al., 2015; Hodges et al., 2013). The students who complete TLC-110 are from the South West Corridor of Perth, Western Australia, an area which classifies as low SES and consists of the outer metropolitan area of Rockingham and Kwinana and the regional area of Peel. TLC-110 was designed for students who were unlikely, because of economic disadvantage, to achieve an Australian Tertiary Admissions Rank (ATAR; Australian Tertiary Admission Rank, 2017) which allows for a direct entry pathway to university. Low SES schools in the region provide less access to ATAR subjects necessary for direct entry to university (Gore, Holmes, Smith, Lyell, Ellis, & Gray, 2015; Perry, 2018; Perry & Southwell, 2013). In 2012, there was a low representation of students in higher education from these regions compounded by factors such as; inequalities in access to academic programs, travel costs, living expenses, parents without university qualifications and a reluctance to move away from their family and social networks. Therefore, TLC-110 was developed and offered to students to provide an educational opportunity for students to access a pathway to university while still in high school.

This program offered an innovative approach to access higher education by;

- assessing the readiness of non-ATAR students for university studies while they are in secondary education;

- reducing the risk of failure with a seamless pathway from secondary to tertiary studies that does not require a bridging intervention;
- providing students from low SES backgrounds with academic confidence to think critically and aspire to further education which may be lacking before commencing the program.

Rationale

WA has one of the lowest year 12 to university transition levels in the country. In 2016 only 53.2% of year 12 students were eligible for university entry compared with 63.3% in Victoria (DET, 2017). Within low SES cohorts, especially in WA government (public) schools, the percentage of students eligible for university can be below 10% (SCASA, 2017). Although some states of Australia have higher percentages of university eligible students, overall across Australia, the percentage of university eligible students has been steadily declining with a decrease of 2.5% from 2016 to 2017 (DET, 2017).

Tracking ATAR data from the project region (Rockingham/Kwinana/Peel) indicated only around 20% of year 12 students in government schools were on an ATAR pathway (SCASA, 2017), although some schools had less than 10% on direct entry pathways (compared to around 50% across WA; DET, 2017). Introduction of the TLC-110 pathway into government schools in this region in 2012 resulted in a 5% increase of Year 12 students on a University pathway by 2015 (Monteith, 2018). As information about TLC-110 disseminated to the wider community, the uptake in 2016 increased by 8% (over 50 students; Monteith, 2018). The retention of TLC-110 students has enabled students to stay with their ATAR peers from high school, an important factor to maintain networks for students from low SES backgrounds.

This university enabling program, TLC-110, aligns with the objectives of Federal Governments higher education initiatives (HEPPP; NCSEHE, 2017) by building the aspirations of students to plan for university and enroll in university. To overcome the challenges for students from low SES backgrounds to enroll in tertiary education, there needs to be the development of intensive, long-term, people-intensive interventions that build on existing understandings (local knowledge), established relationships and networks and include local government and regional priorities and strategies. One off single interventions or ‘quick fix’ responses to complex and protracted educational and social problems are typically unsuccessful (Perry & Southwell, 2013). TLC-110 has consistent guiding principles governing its intervention, for example, the program develops community engagement, recognizes the voices of young people, and taps into the unique characteristics of the local learning environments. These coalesce around the theme of building aspirations and cognitive transition so that young people can attempt a pathway to university and can make ‘good’ decisions that promote their academic success (Hammond, Smink & Drew, 2007). In summary, the methodology for the intervention is based on multiple interactions over three terms during Year 12.

The weekly lectures/tutorials provide an opportunity for students to be challenged to think beyond the replication of inherited or unexamined views. They are encouraged to explore their capacity to think critically and base their arguments on the analysis of academic evidence. TLC-110 attempts to use local knowledge and community discourse to open a range of debatable, nuanced and complex issues for collective analysis, discussion, and research.

The logic model (Figure 1) is a diagrammatic representation of how the TLC-110 program works and links the outcomes, both long and short, with program activities/processes and the theoretical assumptions of the program.

Program: LOGIC MODEL - TLC110 - An alternative university pathway for non-ATAR students

Situation: Currently there is an imbalance in university participation between students from low and high SES areas. This program aims to address this social problem by providing a pre-university unit for students from low SES areas who will not qualify for an ATAR score. It hope to achieve this by exposing Year 12 students to a range of academic skills, acculturating them into university life, and growing their self-efficacy so that they envisage university as a realistic and achievable option.

Hypotheses Through this program, more students from low SES areas will apply for university

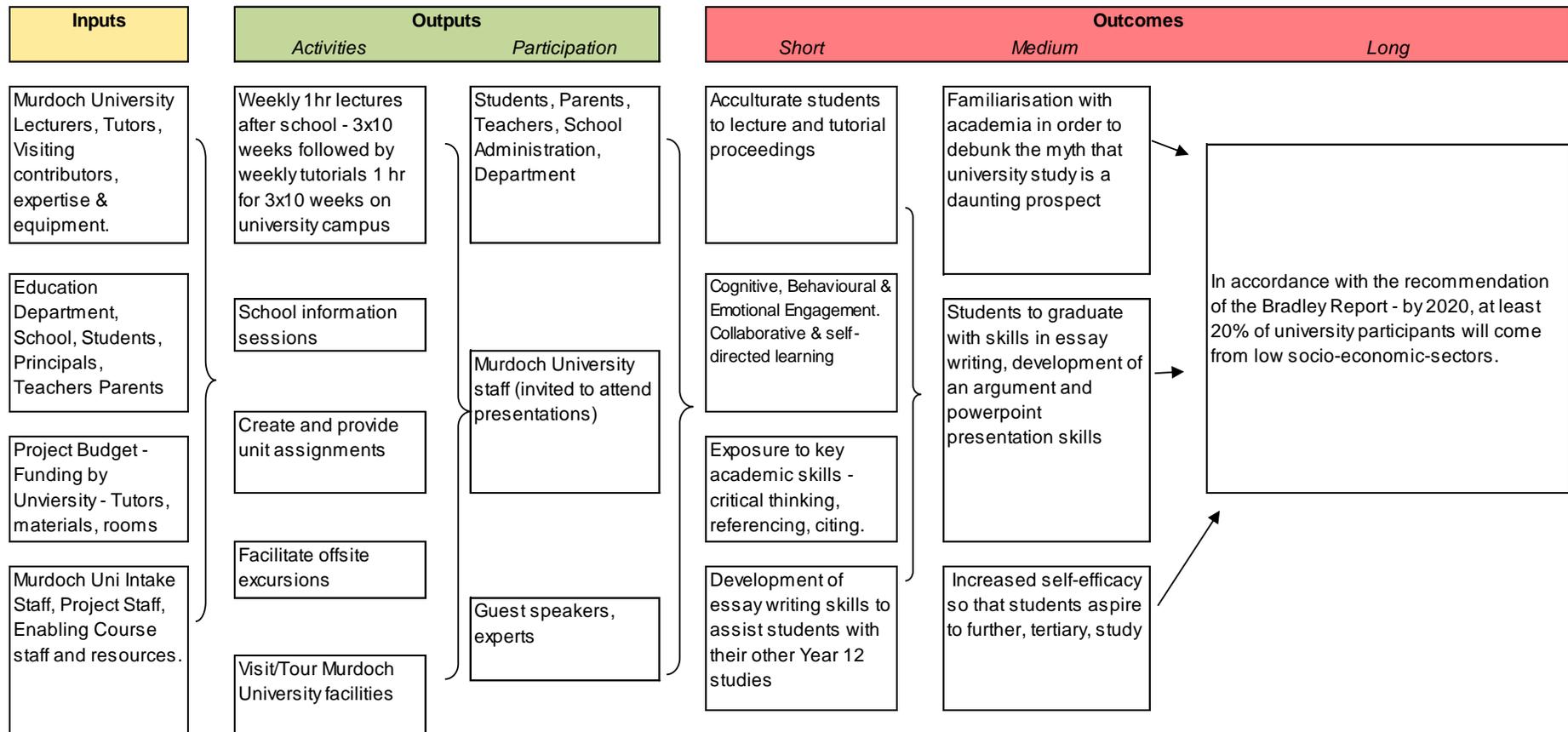


Figure 1. Logic model for TLC-110

Aim

This program provides preparatory education for the transition to higher education which delivers access to opportunities and experiences to resolve issues of economic disadvantage.

Objectives

1. To provide capable non-ATAR students with the opportunity to engage with university-style education and for them to measure its suitability before they leave school, as well as equipping them with an alternative to post-high-school unemployment.
2. To instill confidence and nurture aspirations in those students who possess the intellectual potential to succeed in tertiary study but, due to socio-economic and cultural influences, experience low educational and vocational expectations for themselves.
3. To provide Parents/Guardians with increased understanding of career planning practices, post-school options for students and knowledge of the tertiary environment.
4. To provide high-school students from low SES backgrounds, who complete the TLC-110 program, with a positive learning experience to achieve academic success in parallel with their ATAR peers.

Organization and structure

TLC-110 study program at Murdoch University was first piloted in 2011 and continues to grow in numbers each year to a current cohort of 204 students in 2018. Year 12 students attend a university style lecture/tutorial for two hours per week, after school, over the first three terms of the school calendar. TLC-110 students are required to achieve four key requirements before applying for an undergraduate course at Murdoch University:

- Pass the TLC-110 unit;
- Graduate from High School;
- Achieve an acceptable level of English competency;
- Receive recommendations from both the TLC-110 coordinator and their school principal (based on their performance and application to studies over the three school terms).

The TLC-110 program expects to achieve two central components - tracking the student's aspirations and promotion of critical thinking (Goggin, Rankin, Geerling, & Taggart, 2016).

Students from low SES backgrounds are often marginalized out of ATAR study because of lack of resources to run a full quota of ATAR classes as well as having teachers who lack experience (Angus, McDonald, Ormond, Rybarczyk, & Taylor, 2010; Gore et al., 2015; Perry, 2018). This matters because the consolidation of students' career pathway to higher education focuses students' engagement across all their schoolwork and the ability to think critically is recognized as a key learning skill in retention to transition to higher education (Hammond et al., 2007). While ATAR students are learning content, TLC-110 students are developing critical thinking skills, which are central to the process of identifying and facilitating cognitive transition. Students are challenged to express and then re-examine their existing views on thought-provoking and socially challenging topics such as graffiti, internet file-sharing and wealth inequality (Goggin et al., 2016). They are then required to give reasons for their

arguments, based on their own secondary research. This learning process focuses on levels of development just beyond the capacity of the learner to grasp independently but which can be achieved through a process of facilitative learning with support and scaffolding (Hammond et al., 2007).

Project deliverables – Outcomes

Since the commencement of TLC-110 in 2011 to 2017, 81% (n=537) of students who completed the program demonstrated independent application of critical and academic skills by achieving a pass, or higher. Preliminary data indicate that around 70% of TLC-110 graduates (as a percentage of those who passed) subsequently enroll at university the following year (Monteith, 2018). With youth employment rates reaching 17.7% in the region (Brotherhood of St Laurence, 2018) it has become important to have youth increasing their qualifications to improve their employment opportunities.

While studies have shown previous academic performance (aka ATAR attainment) is a strong indicator of university success (McKenzie & Schweitzer, 2011), TLC-110 students also achieve success after the transition to university. TLC-110 graduates in 2012/2013 who subsequently enrolled at Murdoch University achieved an equivalent average GPA (using a 0-4 GPA scale) and recorded higher retention rates than students who enrolled via other domestic-entry pathways during that same period (Goggin et al., 2016). Specifically, the retention rate for TLC-110 graduates was 82%; this was 2% higher than the rate for other Murdoch University domestic-entry students (Goggin et al., 2016).

Research Outcomes

In 2014, 87 TLC-110 students participated in the Murdoch Aspirations and Pathways for University (MAP4U; for description see Vernon, Watson, & Taggart, 2018) survey. Students took the survey in groups of up to 30, using ipads. The survey contained approximately 60 items and took most students around 20 minutes to complete. Another 209 Year 11 and 12 students from the region were also surveyed and were used as a comparison cohort; 76% of these other pathway students were completing ATAR subjects, and 10% were completing a Certificate 1V. Certificate 1Vs can be assessed for direct entry to university.

Data snapshots – TLC-110 student characteristics

- When we take out the missing and un-codable data, 95.8% of students who named an occupation at aged 30, indicated they would like to be in a career from one of the first 3 ASCO categories (professionals and managers). This is comparable with other surveys of students from low-SES areas whereby career and educational aspirations are high for low-SES groups (e.g., Gale, Parker, Rodd, Stratton, & Sealey, 2013).
- Students doing TLC-110 say that when they want to find out about a university, they would go to the higher education institution itself (50%), the internet (49%) and their teachers (40%) more than their parents (8%) and peers (7%).
- When asked who they discussed university with, students reported that they have more regular discussions with their peers (62%) and parents (60%) than their teachers (37%).
- 84% of TLC-110 students said university would be helpful for their career plans. Five per cent said they wouldn't be able to afford university, compared to 15% of the whole sample.
- 73% of students said their parent/guardians' views were important (or definitely important) to them when planning their futures.

- 50% of TLC-110 students said that if they went to university, they would be the first in their family to do so compared to 34% other pathway students.
- 63% of TLC-110 students felt that staff challenged them to do hard subjects sometimes or regularly. Approximately 10% of students said they were encouraged (from sometimes to regularly) by staff to leave school and get a job.

Survey results

Aspirations

Research related to university pathways for high school students provides a way to understand the gaps between student desires or aspirations to go on to university, and student expectations to fulfil those desires, as well as the extent of their belief in attaining a university degree (Vernon et al., 2018).

Examination of TLC-110 student's aspirations show that their desires, expectations, and beliefs differ from students in other (76% ATAR) academic pathways (see figure 2).

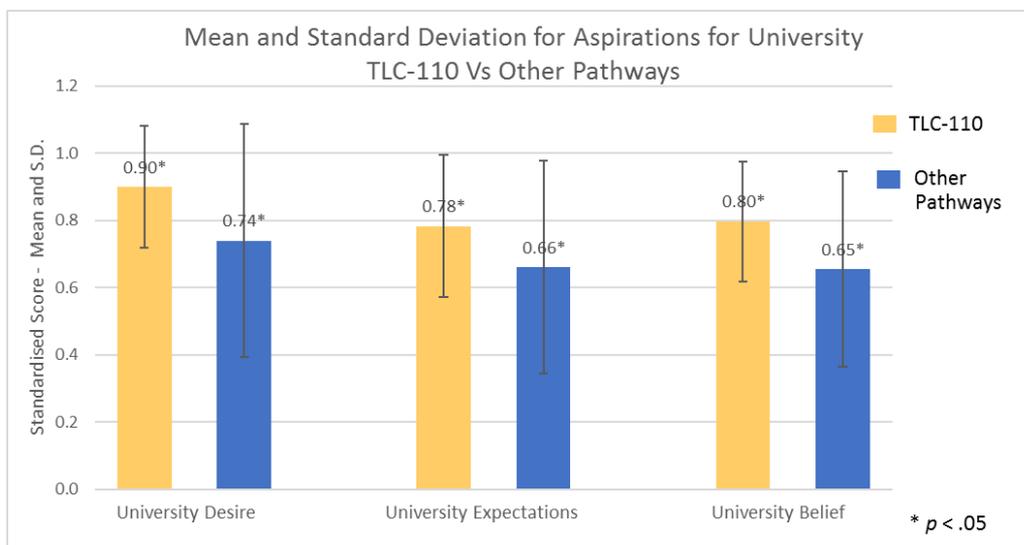


Figure 2. Aspirations for University – Original survey scales have been standardized to compare means for university desires, expectations, and belief between TLC-110 students and other pathway students (76% ATAR pathways). * Means significantly different from each other, $p < .05$

An independent-samples t-test was conducted to compare university desire (*I want to go on to university after high school*) for TLC-110 students and other pathway students. There was a significant difference in the scores for TLC-110 students ($M = 5.5$, $SD = 0.9$) and other pathway students ($M = 4.7$, $SD = 1.7$); $t(262) = -3.9$, $p < .05$. These results suggest that for TLC-110 students, their desires to go to university were higher than levels for other pathways students (See Figure 2). Gale and colleagues (2013) found similar high aspirations for students.

This trend was repeated for university expectations (*How likely is it that you will go onto university after high school*) with the mean higher for TLC-110 students ($M = 5.7$, $SD = 1.3$) than other pathway students ($M = 5.0$, $SD = 1.9$); $t(264) = -3.2$, $p < .05$. TLC-110 provided the necessary activities to foster growth in skills, which students perceived as supporting their university desires. The means were lower for students in other pathways, (76% ATAR) as their expectations may be closely linked to their exam results which contribute to an expected

median ATAR score. This estimation may dampen their university expectations throughout year 12.

Students studying TLC-110 reported significantly higher levels for believing they would have a university degree in their future than other pathway students; TLC-110 students ($M = 4.2, SD = 0.7$) compared to belief of a university degree for other pathway students ($M = 3.6, SD = 1.2$); $t(253) = -4.1, p < .05$. Doing TLC-110 fostered a belief in being able to attain a university degree. Again, exam scores for other pathway students may contribute to a negative perception of their ability to enroll in university and obtain a degree in the future.

Academic self-concept

Academic self-concept refers to the combined view of oneself regarding one's own abilities, valuations, and competencies within an academic domain (Marsh, 1990). The formation of an individual's self-concept is influenced by an appraisal that is received from others which, in turn, informs their own beliefs and values about themselves (Bong & Skaalvik, 2003). Academic achievement is related to academic self-concept, and this relationship has been shown to be reciprocal (Marsh & O'Mara, 2008).

Mean difference testing between the TLC-110 group and the other pathway group (76% ATAR pathway) showed no significant differences for indicators of academic self-concept for both groups (See Figure 3). Interestingly, although TLC-110 students are not following a direct entry pathway to university (i.e., an ATAR pathway), they still have an equally high academic self-concept as the other pathways (76% ATAR) group. The students in the enabling program have been able to positively compare their academic standing to the students on an academic pathway and report a comparable academic self-concept.

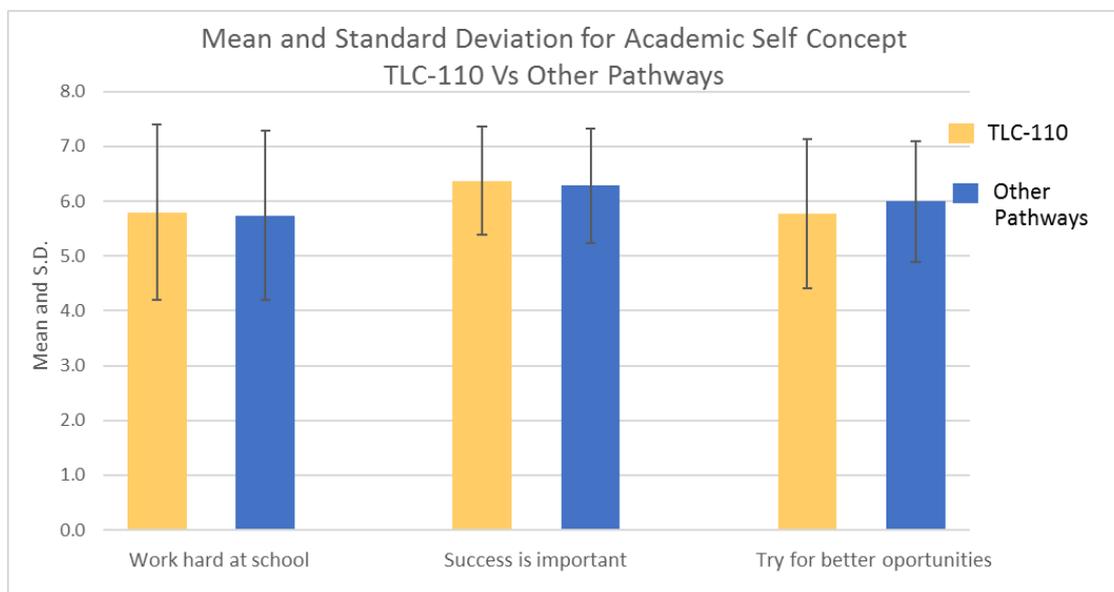


Figure 3. Mean and one standard deviation for academic self-concept self-report items for TLC110 students and other pathway students. No significant mean differences were found between the groups.

Students who studied TLC-110 (89%) reported that the course had, to some degree, strengthened their attitude to education. They also reported that the enabling program (80%) improved their performance at school. As well, 91% of the students indicated that they had an

increased belief that they could do well at university. University course destinations for students that completed the enabling program in 2014 are shown in Table 1.

2015 TLC-110 University destinations	Frequency	Percentage
Unknown destination	44	42.3
B. Arts	15	14.4
B. Science	12	11.5
B. Education	13	12.5
B. Nursing	4	3.8
B. Science Education	2	1.9
B. Business	3	2.9
B. Arts Education	2	1.9
University enabling	9	8.7
Total	104	100

Table 1 Course Selection when attending University for TLC-110 students in 2015

Qualitative research results

In 2015 TLC-110 graduates who were currently studying at university attended focus groups and qualitative responses were analysed with the following findings:

TLC-110 participants perceived that traditional schooling did not encourage them to extend past their current capabilities, participants remarked that TLC-110 helped reveal their capabilities. Participants continually felt encouraged to excel past their current level of achievement and through this encouragement, they were more confident in their own ability to excel.

I also think it [TLC-110] makes you open up your mind that you can actually push yourself that little bit further over the achievable line. You can aim for a little higher. Push your capabilities. You can actually go past your capabilities if you really try. ... Because things that weren't achievable for me back then, I can achieve a lot more now than what I could back then ... So it made my capabilities much wider. Much bigger. Not just thinking I can just do this, I know that I can aim for a little but higher than what was originally intended. (Participant 3)

Many participants spoke of how they were encouraged to question the assumption they had made, not only about themselves, but about what they knew, fostering critical thinking skills.

But you were allowed to argue against it, with information, not just your opinion. You had to back everything up with reliable information, not just, oh I don't like this because I say so. (Participant 1) Yeah I questioned my own writing. I was like, this sucks, I can't write this. It makes no sense. But then I was having confidence in myself and my opinion. ... So it was just building that confidence in yourself to stand on your own two feet, and not just go off what's been written. It made me confident in what I was saying. (Participant 2)

TLC-110 participants found that after they had learned critical thinking and learning strategies, they were utilizing them outside of the TLC-110 classroom. Participants were able to transfer their knowledge from TLC-110 classroom to other contexts in order to break down their assignments into manageable sections in a way they had not done before TLC-110.

TLC also helped me with my high school stuff. I took the things I learned in TLC of essay writing and stuff, and when I had a essay in school, I referred back to that, and saw OK, like she said, that's how it's structured, you have a place to start. (Participant 1)

Applications more broadly

The TLC-110 program of study has been able to increase the number of high school students from low socio-economic status backgrounds to attend university. The TLC-110 program model is reasonably simple and both adaptable and scalable. For example, TLC-110 training package can be scaled up and could include an online and residential component for regional school students. Training for regional, local facilitators can occur annually, and tutors can be sought from regional university alumni. The program can be adapted by universities across Australia as inclusive higher education programs for students from low SES backgrounds need to be continually developed (Bennett et al., 2015). The Key Performance Indicators are standardised however could be flexible to fit the needs of a particular region of Australia.

Program monitoring

Research undertaken in the project schools determined positive change in school and community culture, specifically relating to widening participation in university pathways amongst high school students in the region. Specifically, students from low SES backgrounds, who were not on direct entry pathways to university, were given access to an opportunity to transition to a university with skills essential to tertiary study; an opportunity that may never have been presented to these students post-high school. Programmatic research on this enabling program utilised an evaluative methodology to investigate outcomes and track students' progression through year 12 into university however outcomes when transitioning from university to employment need further investigation. Outcomes, measured longitudinally, include university aspirations and expectations, school attitudes and beliefs, school connection variables such as attachment, engagement and motivation, and indicators of school- and community-culture change. Continued TLC-110 evaluation needs to engage a mixed-method approach to data collection, by administering surveys to, and conducting interviews with, high school students, parents, and teaching staff, to develop a comprehensive understanding of the barriers to and supports for university participation in low SES regions (Hodges et al., 2013).

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