UniSA | Education Futures

A DEVELOPMENTAL EVALUATION OF THE UNIVERSITY OF SOUTH AUSTRALIA'S STARTING STRONG PROGRAM: REPORT No. 1

Maesie MacGillivray
Lisa Smith
Tanya Weiler
Debbie Devis
Simon N. Leonard

THE EDUCATION FUTURES ACADEMY (EFA)

In a field that is constantly evolving and complex, the need for innovative and adaptable education systems has never been more critical. The *EFA* embraces this challenge head-on, developing dynamic and inclusive communities where the learning sciences flourish, boundaries are pushed, and new educational paradigms are born.

We work with our partners and clients to make sense of existing data, identify gaps, and explore new terrain using emerging research. Our work is grounded in a deep understanding that education is not a one-size-fits-all model – it must evolve with context, culture, and community.

Our vision is to co-create an education that provides students with the capabilities they need to thrive in 2030 and beyond. We do not come with simple solutions. Rather, we work towards sustainable and systemic change that makes a meaningful difference.

https://efa.unisa.edu.au

EFA'S DEVELOPMENTAL EVALUATION APPROACH

EFA's evaluation framework draws from Patton's (2021) developmental evaluation (DE) approach. DE is distinct from traditional evaluation as it supports innovation and adaptation to emergent and dynamic realities in complex environments (Leonard et al., 2016). Traditional evaluation approaches, on the other hand, advocate for clear, specific, measurable outcomes that are to be achieved through a linear logic model. The programs we evaluate, including university outreach – what the EFA refer to more accurately as 'connect' programs, as they are capacity building programs rather than those based on marketing the university – are working with degrees of uncertainty, turbulence, and emergence that traditional evaluation does not account for. As developmental evaluators, we help to surface and 'make sense of emergent problems, strategies, and goals as the social intervention *develops*' (Patton, 2021, p. 24). This enables us to provide timely feedback that can be used to adapt and improve aspects of a program. In future stages of a DE, we can then use evaluation data – for example, survey instruments, interviews, observations, learning artefacts, etc. – to work to identify patterns and new information that can be used in a feedback loop, i.e. a cyclical process whereby the output of a system, action or decision is used to modify future actions or decisions. Essentially, we use DE to support ongoing real-time decisions about what to change, expand, close out, or further develop in the connect work.

Our DE approach applies a contribution analysis lens to examine how an intervention or program influences practice and outcomes over time. Contribution analysis is designed to test and refine a program's Theory of Change (ToC) by exploring whether, how, and under what condition an intervention is contributing to desired outcomes (Mayne, 2008). Rather than seeking simple attribution ('did it work?'), it builds a plausible, evidence-informed narrative of a program's role in change processes within complex systems such as schools, communities, or higher education settings.

A central feature of our approach to contribution analysis is through the surfacing of tensions (Leonard et al., 2025). In complex educational initiatives, tensions frequently arise between

competing priorities or between different actors' expectations and practices. Identifying and analysing these tensions does not imply deficit, rather, it helps us clarify real-world constraints and opportunities shaping implementation.

Through workshops, focused conversations and review of program documentation, we work collaboratively with stakeholders to map these tensions and analyse how they impact on the intended outcomes. This process allows a ToC to be tested and refined as new insights emerge, creating an evidence-base for adaptive decision-making and continuous improvement. As a result of our approach, we shift our focus from *'Does this program work?'* to *'What elements of the program enable the outcomes to occur?'*

The evaluation methodology as set out above follows a set of six grounding principles. These principles enable evaluation-based collaborations that are responsive to the immediate needs of our partners, while also supporting the generation of important knowledge about what is working and for whom in relation to our student equity groups as defined by the *Australian Universities Accord* (2024) – including people from low socioeconomic backgrounds, Aboriginal and Torres Strait Islander peoples, people from regional and remote areas, people with disabilities, people from non-English speaking backgrounds (also referred to as 'culturally and linguistically diverse'), and women in non-traditional areas of specialisation. It follows that our developmental evaluations are:

1. **Theory-informed –** the evaluative work is informed by the contemporary learning theories and learning sciences, providing all stakeholders with current and relevant research.
2. **Collaborative –** evaluation is designed and scoped in collaboration with relevant stakeholders, ensuring different perspectives are appropriately considered.
3. **Meaningful –** produces knowledge that is relevant, timely, and insightful.
4. **Sustainable –** the evaluation incorporates the organisation and system capacity development to ensure the translation of findings into practice is sustainable.
5. **Aligned –** the evaluation process informs organisational priorities and aims in a manner that enables the achievement of the program's goals.
6. **Iterative –** the evaluation design includes early and timely reporting so it can evolve and adjust to changing needs and circumstances.

Funding and Support

This project was funded by the Commonwealth's Department of Education and the Australian Centre for Student Equity and Success (ACSES) through the *Equity Frontiers Capacity Building Grants*.

A DEVELOPMENTAL EVALUATION OF THE UNIVERSITY OF SOUTH AUSTRALIA'S STARTING STRONG PROGRAM: REPORT NO. 1

Starting Strong

November 2025

Suggested citation:

MacGillivray, M., Smith, L., Weiler, T., Devis, D. & Leonard, S.N. (2025). *A developmental evaluation of the University of South Australia's Starting Strong program: Report no. 1.* Adelaide: University of South Australia.

Centre for Change and Complexity in Learning (C3L)
UniSA: Education Futures
University of South Australia
https://unisa.edu.au/research/c3l/

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This evaluation report presents the initial formative evaluation of *Starting Strong*, a University of South Australia (UniSA) widening participation program delivered in the participatory student life stage as outlined in *The Student Equity in Higher Education Evaluation Framework* (SEHEEF) (Johnstone et al., 2021). The program is designed to provide an opportunity to address the norms and expectations anticipated of students within academic spaces of the university (Weiler, 2020).

The evaluation serves three key purposes:

1. To construct a clear and testable Theory of Change for the program along with the assumptions on which it has been built.
2. To identify initial tensions and enablers in the program as indicators of the key relationships, activities and mediating factors that influence how the program operates in practice.
3. To inform ongoing program development through the use of evidence-informed insights and recommendations.

Starting Strong: Program Overview

Effective orientation and onboarding are recognised as vital for successfully reducing newcomer ambiguity and explicitly outlining expectations of behaviour (Cable et al., 2013), yet despite this understanding, many orientation programs emphasise extracurricular and co-curricular aspects of university. As the first three weeks of university are critical to whether students stay or leave (Hodges et al., 2013), tangible actions that provide students an opportunity to develop their cultural and social capital provide a solid rationale for tailored efforts such as *Starting Strong*. Additionally, these activities also demonstrate how institutional cultures both welcome and embrace diverse student cohorts (Zepke & Leach, 2010).

Delivered in Orientation week before classes formally commence, *Starting Strong* takes the form of an interactive workshop that explicitly outlines the expectations and behaviours of the university learning environment. It seeks to foster an initial sense of belonging to university by making explicit the diverse student types that are successful in Australian higher education, and by engaging academic staff to model effective study behaviours that can contribute to this success. Finally, acknowledging the competing time demands faced by contemporary students, the program provides participants an opportunity to understand the time required for university study, and evaluate how this aligns with their existing temporal commitments.

Purpose of the Evaluation

The primary purpose of this evaluation is to construct a clear, testable *Theory of Change* (ToC), which sets out the pathways through which change is anticipated to occur. A theory-based approach to evaluation is particularly useful in education programs because it encourages us to move beyond simply asking whether an initiative 'worked' to instead considering how and why certain components or arrangements might work, for whom, and under what conditions. As Moore et al. (2022, p. 60) explain, theories of change allow evaluators and practitioners 'to hypothesise about the mechanisms that might generate positive changes for the target groups, in which context and why'.

By setting out this logic clearly, the evaluation provides a shared framework for our stakeholders by clarifying the purpose of the program activities, identifying the intended outcomes, and making the assumptions underpinning the work transparent. This is important because when assumptions remain implicit, they cannot be tested or improved. In contrast, a clearly articulated ToC allows us to test

whether the program is achieving what it set out to do, adapt the design in response to the evidence in future iterations, and ensure that the program continues to serve equity goals in higher education.

Summary of Recommendations

- **Recommendation 1:** Students have warm/hot knowledge needed to navigate the University as both a cultural and educational system. Include 'warm knowledge' of university whereby students receive explicit information and vicarious learning opportunities about implicit cultural norms and expectations of university.
- **Recommendation 2:** Students from diverse backgrounds feel valued and respected.
    - This justifies the inclusions of peer and facilitator modelling of diverse approaches to university, and structures that support peer relationships.
- **Recommendation 3:** Students foster a sense of belonging when provided with structured opportunities during orientation to connect both with the institution and with their peers.
- **Recommendation 4:** Continue to emphasise affirmative student to student and student to university staff relationship building experiences, and ensure facilitators are explicitly aware of and model inclusive practices.
- **Recommendation 5:** Students develop an understanding of differing measures of success, and an intergenerational appreciation of university as a place where diverse people are welcome and can succeed.
- **Recommendation 6:** Ensure inclusion and diversity are structured into the facilitator recruitment process. This will become increasingly important if/when Starting Strong is scaled across the University.
- **Recommendation 7:** Highlight the responsibility of facilitators to share their personal experience and approaches to university within the facilitator position description.
- **Recommendation 8:** Include student narratives about the actual experiences and feelings of the student cohort in addition to technical training they already undergo. The purpose of this is to illuminate students' contexts for the facilitators.
- **Recommendation 9:** Embed a short time allowance for knowledge decoding into most *Starting Strong* sessions (e.g. a five minute 'What do I do when…?' at the end of each session, addressing common occurrences and scenarios that students may expectedly face).
- **Recommendation 10:** Devise a strategy for scale of *Starting Strong* that includes:
    a. *How the integrity of the program's intentions will be preserved among facilitators who may hold differing epistemological perspectives;*
    b. *Outline mechanisms to maintain the program's equity and inclusion impetus as the model scales to diverse contexts and cohorts;*
    c. *Establish subject-agnostic measures of success by identifying measurable indicators that capture core outcomes independent of disciplinary variations;*
    d. *Manage contextual adaptations by specifying how minor contextual modifications can be made without undermining the theoretical or pedagogical coherence of the program intentions; and*
    e. *Develop a structured approach for facilitator training, including who will be responsible for delivering it and whether a two-stage model – i.e. collective induction followed by context-specific training – will best sustain quality and consistency.*

STARTING STRONG: AN EQUITY IMPETUS

The Australian Government acknowledged its formal commitment to equity in higher education in its *A Fair Chance for All* policy (Department of Education, 1990), declaring that all Australians 'have the opportunity to participate successfully in higher education' and that this objective be accomplished by 'changing the balance of the student population to reflect more closely the composition of society as a whole' (p. 2). To achieve this vision, six equity categories were identified: students from low-socioeconomic backgrounds (L-SES), Aboriginal and Torres Strait Islander students, students from regional and remote areas, students with disabilities, students from non-English speaking backgrounds and women in non-traditional fields.

Widening participation in higher education (HE) – i.e. increasing representation from the aforementioned equity groups – has now become a primary focus of successive HE policies, most notably the *Review of Higher Education* (Bradley et al., 2008) – commonly referred to as the 'Bradley Review' – and more recently, the *Australian Universities Accord* (Department of Education, 2024). Despite these policy targets, representation across equity groups has remained relatively stable, with only modest gains achieved for students from L-SES backgrounds. According to the *Australian Universities Accord* implementation data, students from L-SES backgrounds currently comprise about 17% of HE enrolments, with a target of 20.2% by 2035 (p. 21). Previously, the *Bradley Review* set a similar target: by 2020, 20% of 'undergraduate enrolments in higher education should be students from low socio-economic backgrounds' (p. xiv). These figures suggest that while incremental progress has been made, sector-wide change continues to fall short of earlier target aspirations. That said, UniSA, as one of Australia's 15 'equity intensive' universities, already exceeds the Accord's L-SES representation target, with 25% of its student population drawn from L-SES backgrounds (Innovative Research Universities, 2023). However, a focus on participation in university alone is not enough.

For many students entering HE through widening participation pathways – like UniSA College's[1] alternative pathways – simply gaining access does not remove the structural and cultural barriers embedded in HE institutions (Weiler, 2020). These students often experience non-traditional access pathways, including non-completion of Year 12 or equivalent, or enter via enabling or preparatory programs. Hence, they likely come with different identities than the 'traditional' (i.e. White middle-class) student that universities predominantly cater for. As King et al. (2019) note, the formation of a student identity is a profound change experienced by all students, but for those from underrepresented groups, it can be compounded by a lack of access to familial role models with first-hand knowledge – i.e. intergenerational experiences – of HE. Orientation and early transition activities therefore present a critical opportunity for students to recognise the multiple roles they inhabit, build confidence in the skills needed to navigate a new identity, and situate that developing identity within a community of peers facing similar experiences (Scanlon et al., 2007). It follows that the transition to and within HE becomes smoother, not because students are expected to change their identities, but because the diversity of student identities are recognised and valued within the institution's culture (Weiler, 2020).

Taken together, these developments illustrate that widening participation in Australian HE has progressed beyond questions of access alone. Continuing policy commitments and institutional

[1] UniSA College provides an alternative pathway to university for students who may not meet the required qualifications to enter directly into a bachelor's degree. Pathways, which include Foundation Studies, Undergraduate Certificates and an Aboriginal Pathway Program, all work to support students to build academic skills and prerequisite knowledge required for an undergraduate degree.

widening participation programs have helped to expand pathways and entry points for underrepresented groups, but research shows that structural, cultural and identity-related barriers persist in shaping students' experiences as they begin and traverse university. For programs such as *Starting Strong*, the primary imperative is to move beyond enrolment numbers to consider how transition, belonging and identity development can be actively supported. Establishing a clear ToC that foregrounds these dimensions will enable evaluation efforts to test how its activities contribute to students' sense of connection, confidence, and capacity to participate in the academic community, as well as identify where modifications may be required.

EVALUATION OVERVIEW

Key evaluation questions

The purpose of this developmental evaluation (DE) is to provide a foundation for understanding how *Starting Strong* contributes to equity-focused outcomes in schools. More specifically, the evaluation aims to make explicit the program's underlying ToC, highlight the assumptions that inform it, and map the situational dynamics of the systems in which the program operates. This work is intended to be formative, providing a platform for ongoing empirical inquiry and refinement. As such, this DE has been guided by the following overarching questions:

- *What elements of Starting Strong hinder and/or enable its outcomes?*
- *What assumptions underpin the Starting Strong program and how do these inform its intended outcomes?*

Cohorts of interest

The primary cohort of interest in this evaluation are the *Starting Strong* facilitators (research and teaching academics) and professional staff – including one professional staff member who previously participated as a HE student in the program – as program facilitators and mediators. When referring to the collective cohort, this report refers to 'Starting Strong staff'.

For future evaluative work, cohorts of interest should extend to program participants who are, or have, engaged with *Starting Strong*.

Parameters of the evaluation

This DE is bounded by its focus on early-stage modelling and theory building. It incorporates qualitative insights drawn from the initial workshop and subsequent conversations with the lead *Starting Strong* facilitator, also responsible for the design of the program and future upscaling into the new Adelaide University.

What is not being evaluated

This evaluation does not assess:

- The overall effectiveness or scalability of *Starting Strong* as a program.
- *Starting Strong's* impact on students.

METHODOLOGY

All educational sites are complex. They are eco-systems in which many actors engage – educators, learners, community members – to achieve numerous and diverse goals. Given this reality, our evaluation approach goes beyond assessing whether an innovation 'worked', and investigates what worked, for whom, and in what contexts. When outcomes fall short, we aim to examine why in order to better refine and improve program design.

Our approach builds upon an increasing body of scholarship in evaluation making use of complexity science to engage with complex problems in public policy domains such as education. This scholarship has shown that most public policy problems are non-linear and do not respond to simple interventions. The problems we are dealing with today behave like an eco-system, so our approach explores the complex interactions, feedback loops and emergent properties we find in complex systems like *Starting Strong* and the higher education environment in which it operates.

Our process involves using contribution analysis to surface tensions that influence how a program operates and what outcomes it can reasonably achieve. Tensions may reflect competing priorities, resource constraints, or differences in expectations between actors. Mapping these dynamics in addition to the program's ToC helps make explicit the assumptions underpinning an initiative and provides evidence for refining its design and delivery.

In July 2025, we conducted an interactive and intensive four-hour workshop with the *Starting Strong* staff responsible for the design, administration, coordination, mentoring, and delivery of the program. Guided by an equity agenda, the workshop created a structured space for participants to articulate their understanding of the program, identify its key activities/components and anticipated outcomes, and begin to explore factors influencing program effectiveness. The insights generated have been used to identify current tensions and to make explicit a preliminary Theory of Change (ToC), providing a structured means of bringing together assumptions and intentions that had until now remained largely implicit within the program design. Following the workshop, the evaluation team engaged in further informal conversations and reflective discussions with *Starting Strong's* program lead to refine both the modelling and the ToC.

EQUITY BY DESIGN: THEORY OF CHANGE

Our initial stakeholder conversations with the *Starting Strong* staff, together with recent literature, informed the causal links and assumptions in this recommended ToC. Assumptions and evidence that informed this ToC are outlined in detail below (see Figure 1).

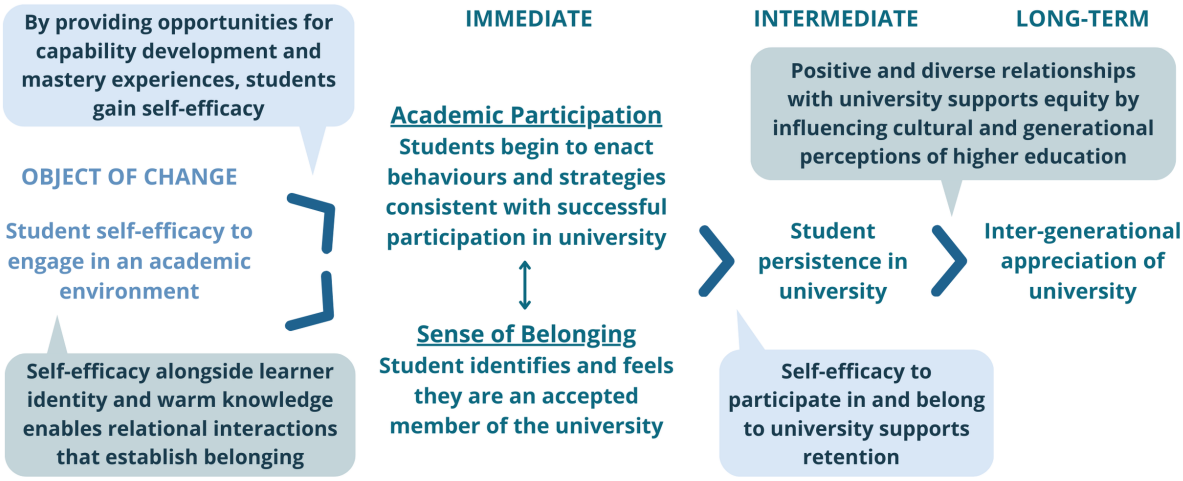

Figure 1: Theory of Change using research informed assumptions

A successful Theory of Change works when its assumptions are met, allowing the expected outcomes to transpire. These assumptions are represented in the model in the coloured boxes. The Object of Change of *Starting Strong*, i.e. student self-efficacy, is an enabler for some of these assumptions, suggesting a strong Theory of Change.

Object of Change: University student capability development and self-efficacy

An Object of Change within an activity or program is a specific aspect that is being intentionally changed. The outcomes of the activity or program emerge as a consequence of this specific change. In *Starting Strong*, the Object of Change was identified as student self-efficacy to engage in an academic environment. Importantly the object of change is *not* student participation. Participation is understood as an outcome that emerges after self-efficacy is strengthened. Hence, it is worth noting that the program centres around this object as a practicable target of design and pedagogy, from which larger outcomes (i.e. belonging or retention) arise.

Starting Strong was designed for students commencing in enabling programs to feel confident and prepared for university classes. Confidence and perceived capability to learn have been recognised as linked, with effects differing depending on levels of human capital (Fischer & Sliwka, 2018). Importantly, constructions of capability are not fixed and stable, but instead 'tied to feelings of belonging and fitting in' (Burke et al., 2016, p. 7). Fostering an inclusive pedagogical environment that extends beyond formal learning spaces can enhance students' sense of capability and help counter deficit discourses that can disproportionately affect those from non-traditional backgrounds (Burke et al., 2016; Hattam et al., 2024). Although *Starting Strong* is presented to students as a way to build confidence to feel prepared for commencing university, it is underpinned by a deep theoretical understanding of Critical Enabling Pedagogy (Hattam et al., 2024), transition pedagogy (Kift, 2009),

and an understanding that '… the first three weeks at university are critical to whether students stay or leave' (Weiler, 2020, p. 61).

The initial workshop for *Starting Strong* surfaced multiple program intentions and anticipated outcomes, but the primary object of change for these outcomes to emerge was self-efficacy. Self-efficacy here had two aspects; self-efficacy in technical capabilities related to self-directed learning, and self-efficacy in navigating cultural norms. Technical capabilities included skills such as notetaking or developing study plans, which contribute to an enabling academic experience. However, self-efficacy stretches beyond technical skills to also include self-belief that the student can personally navigate the implicit social and cultural norms of Higher Education that can't necessarily be circumvented with technical skills alone. Examples of such cultural norms may include how university lecturers should be addressed (e.g. by their title versus their name) or what to do if you're late to a tutorial.

Starting Strong directly addresses these foundational self-efficacies within the program's design. Addressing self-efficacy as an object of change in the *Starting Strong* program employs an approach that combines both lecturer-directed and peer-directed learning. Providing explicit instruction alongside opportunities to practise and develop study skills over a short period aligns with research indicating that this approach effectively enhances students' confidence, particularly among those from non-traditional backgrounds (Allan & Clarke, 2007).

This relationship aligns with Bandura's (1977) concept of self-efficacy, which posits that confidence develops through mastery experiences, vicarious learning, and positive feedback, reinforcing individuals' perceptions of their own competence. Self-efficacy is often described as task-specific self-confidence (Artino, 2012), so creating conditions in which commencing students can experience mastery over tasks required for success in the university environment, such as academic reading and note-taking, can therefore enhance, in particular, their academic self-efficacy.

Starting Strong has been deliberately designed to provide such opportunities, enabling students to practise key academic skills in a low-stakes environment that supports their gradual development towards mastery. This intentional approach seeks to foster self-efficacy before students enter formal university learning contexts where they are expected to embody the characteristics of the 'independent, adult learner'. Throughout *Starting Strong*, academics model the skills and expectations required at university before providing space for students to build their self-efficacy through peer-to-peer sharing. This is supported by affirmation from academic staff co-facilitating the sessions. These measures promote other key sources of self-efficacy identified by Bandura (1977), including verbal persuasion and vicarious experience.

Beyond self-efficacy of technical skills, a sense of belonging to university is strongly associated with academic achievement and success (Ahn & Davis, 2020), with recognition that feelings of belonging at university are largely about building authentic, trusting relationships over time (Jones & Bell, 2025). This belonging requires self-efficacy to navigate the social and cultural structures of the institution. *Starting Strong* provides opportunities for students to enhance this self-efficacy by making expectations transparent, normalising diversity within the cohort and the diversity of success, creating early social connections, modelling inclusive academic culture and acknowledging students' lived realities. Likewise, students learn how to navigate implicit cultural norms through stories and narratives of personal success and adaptation presented by the facilitators who are, themselves, from diverse backgrounds.

Immediate Outcome 1: Academic participation

The program reinforces the university's commitment to equity by signalling that diverse student experiences are recognised and valued. This inclusive approach helps students, particularly those

from non-traditional backgrounds, feel respected, supported, and represented within the university community (Hattam et al., 2024). Early positive interactions with staff and peers further encourage proactive help-seeking by normalising engagement with institutional support structures, which in turn promotes sustained, constructive academic relationships (Hoyt, 2023).

Participation in *Starting Strong* also supports students' academic identity formation. Through guided practice, reflection, and collaborative learning, students begin to increase their participation in technical skills required to navigate HE – such as note-taking, help-seeking skills and time management – and start to see themselves as capable, independent learners who belong in the HE environment (Weiler, 2020). By cultivating trust in both the university and their own capabilities, the program lays a foundation for ongoing engagement, increasing the likelihood that students will continue to actively participate in academic, social, and co-curricular opportunities throughout their studies.

To support self-efficacy, it is recommended that *Starting Strong* also includes the following:

- ***Recommendation 1:*** *Students have warm/hot knowledge needed to navigate the University as both a cultural and educational system*
    - This outcome justifies the inclusion of 'warm knowledge' as a direct intention, where students receive explicit information and vicarious learning opportunities about implicit cultural norms and expectations of university, as a proxy for assumed hot knowledge.

Immediate Outcome 2: Sense of belonging

Students' early experiences of university play a critical role in shaping their perceptions of belonging, confidence, and engagement (Hattam et al., 2018; Kahu et al., 2020). When universities provide explicit guidance, inclusive practices, and opportunities for relational connection, students are more likely to develop a positive, enabling relationship with the institution – an essential precursor to persistence and attainment. *Starting Strong* is designed to operationalise these principles in a manner that welcomes and orients students to academic expectations, offers explicit instruction in key study skills within a low-stakes environment, and provides structured opportunities for interaction with peers and approachable academic staff.

Developing a strong student identity is inextricably linked with a sense of belonging and feeling welcome within both the physical and cultural spaces of university (Ahn & Davis, 2020). For students from equity categories, traditional 'cold' sources of information about universities (e.g., formal communications, policy documents) may not adequately represent or resonate with their experiences (Smith, 2011). By contrast, the lived experiences of peers and staff, communicated through inclusive programs like *Starting Strong*, serve as 'warm' or 'hot' knowledge that makes higher education feel tangible, achievable, and culturally accessible. These interactions help students to begin to perceive themselves as legitimate participants and members of the university community, removing the sense that they are outsiders.

It is recommended to clarify that the immediate outcome of Starting Strong also includes:

- ***Recommendation 2:*** *Students from diverse backgrounds feel valued and respected.*
    - This justifies the inclusions of peer and facilitator modelling of diverse approaches to university, and structures that support peer relationships.

Early experiences of university are often conceptualised in terms of the relationship between students and the institution, with responsibility for successful transition being shared between both parties (Ballantyne, 2012). Research consistently demonstrates a strong link between students' sense of belonging and their success at university (Strayhorn, 2018), making it incumbent upon institutions

to create the conditions through which students can establish belonging as early as possible. This requires a whole-of-institution approach (Mahoney et al., 2022), recognising that belonging encompasses behavioural, emotional, and cognitive dimensions that evolve throughout the student life cycle (Kahu et al., 2020). Within this framing, programs like *Starting Strong* act as the initial bridge between individual students' early engagement experiences and the broader institutional culture.

A student's experience of university includes both their engagement with individual classes and academic cultures that exist across the entire institution. Building belonging, therefore, requires structures that allows students to access and participate meaningfully in these cultures rather than remaining as peripheral observers. *Starting Strong* provides one of the first structured opportunities for such participation by positioning students as capable contributors to academic life. Self-efficacy to engage within HE, which has been deliberately built through warm knowledge acquisition as an immediate outcome of *Starting Strong*, supports the development of belonging within the academic cultures of the institution.

A recognised strategy for fostering belonging is the enhancement of orientation programs. Effective orientation extends beyond conveying logistical information or academic expectations to also include opportunities for students to build friendships, social networks, and emotional connections with peers and staff (Mahoney et al., 2022). In the case of *Starting Strong*, facilitators play a pivotal role in helping students begin to build this sense of belonging. They do so by explicitly outlining the norms, expectations, and behaviours associated with successful engagement in HE, and by actively modelling inclusive and respectful interactions. These actions not only demystify the university environment but also communicate to students that they are valued members of the academic community from the outset.

Recognising that feelings of belonging are fluid and develop over time, *Starting Strong* seeks to establish an early foundation upon which students can continue to build throughout their studies. This foundation is strengthened when belonging is understood not as a static feeling, but as a practice sustainably reinforced through connection, recognition and participation.

It is therefore recommended that the immediate outcomes of Starting Strong be made explicit:

- ***Recommendation 3:*** *Students foster a sense of belonging when provided with structured opportunities during orientation to connect both with the institution and with their peers.*

Intermediate Outcome: Student persistence in university

Prevailing theories of student retention almost always take the perspective of the university, however, as Tinto (2017a, 2017b) contends, students do not seek to be 'retained':

> They seek to persist. The two perspectives, though necessarily related, are not the same. Their interests are different. While the institution's interest is to increase the proportion of their students who graduate from the institution, the student's interest is to complete a degree often without regard to the institution in which it is earned. (Tinto, 2017b, p. 254)

This distinction redirects attention away from institutional risk management and metrics and towards the conditions that sustain students' motivation, confidence, and capacity to continue.

In addition to the necessary resources (stable accommodation, income, etc.), recent literature indicates that persistence is mobilised by HE students' capacity to navigate academic and cultural expectations (Kember et al., 2023) and their experience of being recognised as legitimate learners of the HE community (O'Shea et al., 2021; Tinto, 2017a, 2017b). It follows that focusing on building academic capabilities alone overlooks this wider ecology of student persistence. *Starting Strong* makes an important departure here in its capacity to build self-efficacy in both technical skills, such as note-taking and study planning, and in navigating the implicit social and cultural norms of HE.

Importantly, pursuing student persistence as an outcome holds the institution accountable for the (in)equitable conditions that it creates. Student persistence is not merely a matter of individual resilience or motivation, but depends upon the institutional structures, relationships and pedagogies that enable students to remain. In this sense, *Starting Strong* functions as an early mechanism for redistributing responsibility; that is, it supports students to persist not by expecting them to overcome barriers alone, but by reducing those barriers through affirming relationships and inclusive practices.

It is recommended that in order to retain the intermediate outcome of *Starting Strong*:

- ***Recommendation 4:*** *Continue to emphasise affirmative student to student and student to university staff relationship building experiences, and ensure facilitators are explicitly aware of and model inclusive practices.*

Long-Term Outcome: Intergenerational appreciation of university

Beyond its immediate and intermediate outcomes, *Starting Strong* aims to transcend individual student success by fostering an appreciation of university that can extend intergenerationally. Socio-economic status is widely recognised as an intergenerational barrier to higher education, with students from L-SES backgrounds less likely to transition directly from schooling into university (Zhang & Peng, 2017). The widening participation agenda in Australian higher education has shifted the demographics of student cohorts, with L-SES students at UniSA College, where *Starting Strong* was initiated, now comprising over 55% of the cohort (Hattam & Weiler, 2025). While this reflects progress in increasing access, enrolment alone does not fully address structural disparities. Building an intergenerational appreciation of university has the potential to further mitigate these inequities by influencing both cultural perceptions of higher education and the aspirations of future generations.

Literature emphasises that constructions of success are diverse and cannot be adequately captured through quantitative measures alone (Allen, 2020; Rubin et al., 2025). Broader conceptualisations of success should include positive attrition, in which students may intentionally discontinue their studies for personal or professional reasons yet still gain meaningful outcomes from their university experience. Even if students do not complete a full program, positive experiences at university can counter deficit discourses about who is capable of success and who belongs in HE (Burke et al., 2016). By creating conditions for positive experiences early in a student's journey, programs like *Starting Strong* shape cultural messaging around belonging and capability, with these perceptions potentially disseminated through intergenerational and peer networks.

Both practical and cultural knowledge and understanding of university play a key role in shaping aspirations and expectations (Smith, 2011). The transmission of these experiences has been theorised as producing 'hot' or 'warm' knowledge, which is particularly influential within social networks and 'grapevines' (Slack et al., 2014; Smith, 2011). *Starting Strong* creates opportunities for students to develop this type of knowledge and share it with their immediate networks, particularly benefiting those from backgrounds underrepresented in Australian universities. Through these mechanisms, the program contributes to broader cultural shifts in understanding higher education as accessible, welcoming, and capable of supporting diverse learners.

It is recommended to retain the following long-term outcome of *Starting Strong*:

- ***Recommendation 5:*** *Students develop an understanding of differing measures of success, and an intergenerational appreciation of university as a place where diverse people are welcome and can succeed.*

STARTING STRONG: TENSIONS AND ENABLERS

Initial tensions and enablers identified through the workshop and subsequent conversations with the program lead are presented below. These tensions and enablers highlight the key relationships, activities, and mediating factors that influence how the program operates in practice. Mapping them has directly informed the Theory of Change by clarifying how activities are expected to interact with contextual factors to generate short, intermediate, and long-term outcomes. Collection of further empirical data will enable confirmation and/or advancement of the identified tensions.

Tension and Enabler 1: Program facilitators legitimising diversity of experience

Students who participate in *Starting Strong* often have backgrounds and experiences that are underrepresented in the university system. Along with prescriptive narratives from the school system, this can undermine students' perception of diversity as valuable [tension].

As with many outreach programs, *Starting Strong* facilitators come with their own personal knowledge and expertise which often play a key role in the functionality and continued representation of diversity, both of backgrounds and problem-solving approaches. The facilitators play an important role in modelling a range of skills and experiences across multiple perspectives and abilities, offering vicarious experience that diversity is both legitimate and valuable [enabler].

Because of this, recommendations are:

- ***Recommendation 6:*** *Ensure inclusion and diversity are structured into the facilitator recruitment process. This will become increasingly important if/when Starting Strong is scaled across the University.*
- ***Recommendation 7:*** *Highlight the responsibility of facilitators to share their personal experience and approaches to university within the facilitator position description.*

Tension and Enabler 2: Decoding of hidden university knowledges

Students engaging in *Starting Strong* are typically unable to access the hidden culture and curriculum of the university system [tension]. A further role of the facilitators is to be knowledge decoders to reveal the university system and its mechanics [enabler].

Students that participate in *Starting Strong* are often undertaking an alternative entrance pathway to university through the UniSA College. This may mean that the traditional school system has failed to prepare them with the implicit skills or knowledge required to meet or navigate the university agenda [tension]. This is a complex tension that is not framed as a 'skill deficit', but as a 'culture shock'. To support the transition, then, facilitators must understand this context to better make in-program decisions to support students.

Because of this, recommendations are:

- ***Recommendation 8:*** *Include student narratives about the actual experiences and feelings of the student cohort in addition to technical training they already undergo. The purpose of this is to illuminate students' contexts for the facilitators.*
- ***Recommendation 9:*** *Embed a short time allowance for knowledge decoding into most Starting Strong sessions (e.g. a five minute 'What do I do when…?' at the end of each session, addressing common occurrences and scenarios that students may expectedly face).*

Tension and Enabler 3: Scalability of the program

A focus of *Starting Strong* has been on the recent scalability of the program outside of the UniSA College, making it available university wide. There are risks associated with this, however, including the assumption within the wider university community that adult learners and university-ready students do not require additional support [tension]. Further, that an opt-in program will result in minimal buy-in, and that equity groups currently addressed in the program, who reflect a small percentage of the university, will be less effectively reached [tension]. Yet, the current success of the program in its targeted groups reflects the potential benefit of scaling *Starting Strong* to offer relevant advice and training for university students across all disciplines and backgrounds [enabler].

Because of this, recommendations are:

- ***Recommendation 10:*** *Devise a strategy for scale that includes:*
    a. How the integrity of the program's intentions will be preserved among facilitators who may hold differing epistemological perspectives;
    b. Outline mechanisms to maintain the program's equity and inclusion impetus as the model scales to diverse contexts and cohorts;
    c. Establish subject-agnostic measures of success by identifying measurable indicators that capture core outcomes independent of disciplinary variations;
    d. Manage contextual adaptations by specifying how minor contextual modifications can be made without undermining the theoretical or pedagogical coherence of the program intentions; and
    e. Develop a structured approach for facilitator training, including who will be responsible for delivering it and whether a two-stage model – i.e. collective induction followed by context-specific training – will best sustain quality and consistency.

STARTING STRONG: SUMMARY AND OPPORTUNITIES

This developmental evaluation (DE) has provided a detailed Theory of Change (ToC) for *Starting Strong* – including the underlying assumptions which inform it – along with the initial tensions of the STEM Showdown activity. This DE provides a foundation for further empirical work aimed at refining the modelling and testing the ToC.

Building on the insights gained from this report, the following section highlights potential opportunities for gauging the program's impact. The opportunities outlined here are not intended to be exhaustive or prescriptive; rather, they are presented as possible approaches for further formative evaluation and empirical data collection.

Evaluation Framework

The development of a clear Evaluation Framework will help to test the ToC. It is recommended that the framework breaks down *Starting Strong* into its distinct components to determine how each contributes to the program's intended immediate and intermediate outcomes. As a starting point for this activity, the SEHEEF's *Continuous Quality Improvement Tool* (Johnstone et al., 2021, p. 13) may prove useful. This tool can support program facilitators and evaluators to work collaboratively to identify program activities and outcomes and to map the indicators and data sources to each outcome. As the report has already identified Starting Strong's outcomes, the primary intention of this exercise is to link the outcomes to the program's activities and identify each outcome's indicator(s) and measure(s).

Social Self-Efficacy

Being socially accepted is a key determinant of students' adjustment within educational settings (Fan & Mak, 1998). Successful interactions with peers, academic faculty members, and professional staff members are closely linked to students' confidence and mastery of academic work (Bandura et al., 1996). As social self-efficacy forms an integral part of the program's Object of Change – i.e., student capability and self-efficacy to engage in an academic environment – it can be measured using Fan and Mak's (1998) *Social Self-Efficacy Scale for Students* (SSESS). Developed and validated with university students from a culturally diverse, working-class suburb of Melbourne, the SSESS is used to capture students' perceived abilities to initiate and maintain positive social relationships within HE contexts. The 20-item scale is comprised of four constructs: (1) Absence of Social Difficulties, (2) Social Confidence, (3) Sharing Instruments, and (4) Friendship Initiatives (see Appendix A).

To ensure the validity and reliability of any quantitative measures selected in evaluating *Starting Strong*, it is recommended that an academic with quantitative expertise be consulted to advise on instrument adaptation, validation, and data analysis across all selected tools.

Sense of Belonging

One of the program's key outcomes is to strengthen students' sense of belonging. Hoffman et al.'s (2002) original *Sense of Belonging Scale* (SBS) and its revised version are widely used to measure first-year students' perceptions of connection and inclusion within the university context. The revised version comprises 26 items across four constructs: (1) faculty and staff support, (2) peer support, (3) classroom comfort, and (4) isolation (see Appendix B). In consultation with a quantitative academic, this instrument could be adapted to capture *Starting Strong* participants' sense of belonging to UniSA

College. The recommendation would be to administer a short-form or adapted version[2] of this scale at the beginning, midway, and end of the program – or if this is too onerous, then at least in the beginning and at the end of program delivery – to better gauge changes in belonging over time and the specific program components most associated with increased connection and comfort within the UniSA College environment.

In contrast to the SBS which focuses on academic comfort, Goodenow's (1993) *Psychological Sense of School Membership* (PSSM) places greater emphasis on students' emotional connection and sense of social acceptance among peers and staff (see Appendix C). Originally developed to capture adolescent students' 'perceived belonging or psychological membership in the school environment' (Goodenow, 1993, p. 79), the PSSM has been validated across multiple educational levels and adapted for the university context (Alkan, 2016; Knekta et al., 2020). For *Starting Strong*, an adapted or short form version of this instrument could be used to assess students' sense of acceptance and connection with peers and staff at UniSA College.

Qualitative Insights

In line with the SEHEEF (Robinson et al., 2021) recommendations, further evaluation efforts should adopt a mixed methods approach. Semi-structured interviews and/or focus groups with participating students can be used to follow up on and contextualise results from the SBS or PSSM. For the SBS, questions could be designed to elicit more detail in relation to:

- Forms of staff support provided through *Starting Strong* that make them feel most connected to UniSA College;
- How peer support develops within program activities;
- Which aspects of the learning environment contribute to comfort or isolation; and
- How their sense of belonging shifts across program stages.

If the PSSM is selected, interview questions could explore students' emotional connection and social acceptance including:

- When and how they feel recognised or valued within *Starting Strong*;
- The role of relationships with peers and facilitators in developing belonging; and
- What experiences have helped or hindered feeling part of the UniSA College community.

While it is understood that several *Starting Strong* program facilitators are active research academics who possess the necessary expertise in crafting, conducting and analysing qualitative interviews, consideration should also be given to using independent interviewers. This approach can help to minimise social desirability bias. However, a hybridised approach would also be effective whereby program facilitators contribute to the design and interpretation of the interviews and/or focus groups, while data collection is conducted by independent researchers.

Final Remarks

As this report represents the first formative evaluation of *Starting Strong*, the focus of the initial data collection has been on understanding the environment in which the program operates, developing a testable ToC and identifying its underlying assumptions. As Mayne (2008) points out, assumptions are one of the three forms of evidence required to validate a ToC, and the remaining include observed results and the influencing factors (p. 16). This developmental approach lays the groundwork for future evaluations that should include students' and facilitators' perspectives.

---

[2] Note: Terminology should be adjusted to ensure site (i.e. UniSA College) and program specificity (i.e. *Starting Strong).* For example, 'class' might be replaced with 'Starting Strong' in most instances, and 'faculty' replaced with the appropriate term used by UniSA College. Minor edits are also required to the US-centric language.

The generation of this report also highlighted the value of specialist evaluation expertise in supporting program facilitators to articulate and refine an explicit ToC. Surfacing an implicit ToC requires guidance and careful analysis of the literature to identify causal links and delineate a program's Object of Change from its outcomes. While the program lead provided an initial articulation of the program's ToC, further refinement was then undertaken to clarify the causal logic and tighten the alignment with the broader evidence base. Through subsequent evaluative team discussions, the ToC was reconceptualised beyond a linear model into a more divergent representation of how *Starting Strong* generates change and for what purpose. In this sense, the process demonstrated that structured evaluative support is integral to developing a research-informed ToC. Furthermore, this work is a fundamental precursor for undertaking Theory-Based Impact Evaluation.

REFERENCES

Ahn, M. Y., & Davis, H. H. (2020). Four domains of students' sense of belonging to university. *Studies in higher education (Dorchester-on-Thames)*, *45*(3), 622-634. https://doi.org/10.1080/03075079.2018.1564902

Alkan, N. (2016). Psychological Sense of University Membership: An Adaptation Study of the PSSM Scale for Turkish University Students. *The journal of psychology*, *150*(4), 431-449. https://doi.org/10.1080/00223980.2015.1087373

Allan, J., & Clarke, K. (2007). Nurturing supportive learning environments in higher education through the teaching of study skills: To embed or not to embed? *International Journal of Teaching and Learning in Higher Education*, *19*(1), 64-76.

Allen, K. (2020). "When does hot become cold?": Why we should be disrupting narrow and exclusive discourses of success in higher education. *International Studies in Widening Participation*, *7*(1), 8-21.

Artino, A. R. (2012). Academic self-efficacy: from educational theory to instructional practice. *Perspectives on medical education*, *1*(2), 76-85. https://doi.org/10.1007/s40037-012-0012-5

Ballantyne, J. (2012). Valuing students' voices: Experiences of first year students at a new campus. *International Journal of Pedagogies & Learning*, *7*(1), 41-50. https://doi.org/10.5172/ijpl.2012.7.1.41

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological review*, *84*(2), 191-215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, *67*(3), 1206-1222. https://doi.org/10.1111/j.1467-8624.1996.tb01791.x

Bradley, D., Noonan, P., Nugent, H., & Scales, B. (2008). *Review of Australian Higher Education: final report*. C. o. Australia.

Burke, P. J., Bennett, A., Burgess, C., Gray, K., & Southgate, E. (2016). *Capability, belonging and equity in higher education: Developing inclusive approaches*. National Centre for Student Equity in Higher Education (NCSEHE). https://www.acses.edu.au/research-policies/capability-belonging-and-equity-in-higher-education-developing-inclusive-approaches-2/

Department of Education. (2024). *Australian universities accord: Final report*. Australian Department of Education. https://www.education.gov.au/australian-universitiesaccord/resources/final-report

Department of Education, Employment and Training,. (1990). *A fair chance for all: National and institutional planning for equity in higher education*. Canberra

Fan, C., & Mak, A. S. (1998). Measuring social self-efficacy in a culturally diverse student population. *Social behavior and personality*, *26*(2), 131-144. https://doi.org/10.2224/sbp.1998.26.2.131

Fischer, M., & Sliwka, D. (2018). Confidence in knowledge or confidence in the ability to learn: An experiment on the causal effects of beliefs on motivation. *Games and economic behavior*, *111*, 122-142. https://doi.org/10.1016/j.geb.2018.02.005

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*(1), 79-90. https://doi.org/10.1002/1520-6807(199301)30:1<79::AID-PITS2310300113>3.0.CO;2-X

Hattam, S., Stokes, J., & Ulpen, T. (2018). Should I stay or should I go?: Understanding student subjectivity, institutional discourse, and the role enabling academics can play in empowering students within the system. *The International Journal of Educational Oganization and Leadership*, *25*(1), 1-14. https://doi.org/10.18848/2329-1656/CGP/v25i01/1-14

Hattam, S., & Weiler, T. (2025). *A collective, institutional approach to centring enabling pedagogy for inclusion in higher education* AdvanceHE Inclusive Pedagogy Symposium, Online.

Hattam, S. K., Hattam, R., Weiler, T., & King, S. (Eds.). (2024). *Enabling pedagogy and action research for higher education in Australia*. DIO Press.

Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating "sense of belonging" in first-year college students. *Journal of College Student Retention: Research, Theory & Practice*, *4*(3), 227-256. https://doi.org/10.2190/DRYC-CXQ9-JQ8V-HT4V

Hoyt, J. E. (2023). Student connections: The role of student affairs and academic support services in retention efforts. *Journal of College Student Retention: Research, Theory & Practice*, *25*(3), 480-491. https://doi.org/10.1177/1521025121991502

Innovative Research Universities. (2023). *Meeting the demand for higher education and a 20% low SES target by 2030*. I. R. Universities.

Johnstone, M., Robinson, M., Salom, C., Tomaszewski, W., Kubler, M., Clague, D., Zajac, T., & Povey, J. (2021). *Student Equity in Higher Education Framework (SEHEEF): Guidance manual*. The Institute for Social Science Research; The University of Queensland. https://www.education.gov.au/heppp/resources/student-equity-higher-educationevaluation-framework-seheef-guidance-manual

Jones, C. S., & Bell, H. (2025). Unravelling sense of belonging in higher education: Staff and student perspectives at an English university. *Trends in higher education*, *4*(3), 1-16. https://doi.org/10.3390/higheredu4030045

Kahu, E. R., Picton, C., & Nelson, K. (2020). Pathways to engagement: A longitudinal study of the first-year student experience in the educational interface. *Higher education*, *79*(4), 657-673. https://doi.org/10.1007/s10734-019-00429-w

Kember, D., Hicks, D., Kember, D., Fan, S., Ellis, R. A., & Trimble, A. (2023). Modelling the way teachers can support the retention and success of online students. In *Adapting to online and blended learning in higher education: Supporting the retention and success of the expanded and diversified intake* (pp. 297-313). Springer. https://doi.org/10.1007/978-981-99-0898-1_14

Kift, S. (2009). *Articulating a transition pedagogy to scaffold and to enhance the first year student learning experience in Australian higher education*. http://www.altcexchange.edu.au/first-year-experience-and-curriculum-design

King, S., Luzeckyj, A., & McCann, B. (2019). *The experience of being first in family at university: pioneers in higher education*. Springer. https://doi.org/10.1007/978-981-15-0921-6

Knekta, E., Chatzikyriakidou, K., & McCartney, M. (2020). Evaluation of a questionnaire measuring university students' sense of belonging to and involvement in a biology department. *Life Sciences Education*, *19*(3). https://doi.org/https://doi.org/10.1187/cbe.19-09-0166

Leonard, S. N., Fitzgerald, R. N., & Riordan, G. (2016). Using developmental evaluation as a design thinking tool for curriculum innovation in professional higher education. *Higher Education Research & Development*, *35*(2), 309-321. https://doi.org/10.1080/07294360.2015.1087386

Leonard, S. N., Fowler, S., Kennedy, J. P., & Devis, D. (2025). *Pragmatic Adaptive Leadership: Tools for Guiding in Complex Educational Systems*. Policy Press. https://books.google.com.au/books?id=haZJEQAAQBAJ

Mahoney, B., Kumar, J., & Sabsabi, M. (2022). Strategies for Student Belonging : The Nexus of Policy and Practice in Higher Education. *Student success*, *13*(3), 54-62. https://doi.org/10.5204/ssj.2479

Mayne, J. (2008). *Contribution analysis: An approach to exploring cause and effect*.

Moore, J., Cotterill, V., Davey, A., & Mountford-Zimdars, A. (2022). Using Theory of Change to enhance evaluation and evidence. In S. Dent, A. Mountford-Zimdars, & C. Burke (Eds.), *Theory of Change: Debates and applications to access and participation in higher education*. Emerald Publishing Limited. https://doi.org/https://doi.org/10.1108/9781800717879

O'Shea, S., Kift, S., Shah, M., & Thomas, L. (2021). Why does student retention and success matter? In *Student retention and success in higher education: Institutional change for the 21st century* (pp. 17-40). Springer International Publishing. https://doi.org/10.1007/978-3-030-80045-1_2

Patton, M. Q. (2021). Emergent Developmental Evaluation Developments. *Journal of multidisciplinary evaluation*, *17*(41), 23-34. https://doi.org/10.56645/jmde.v17i41.699

Robinson, M., Tomaszewski, W., Kubler, M., Johnstone, M., Clague, D., Zajac, T., Povey, J., & Salom, C. (2021). *Student Equity in Higher Education Evaluation Framework (SEHEEF): Final report*. Retrieved from https://www.education.gov.au/heppp/resources/student-equity-higher-education-evaluation-framework-seheef-final-report

Rubin, M., Burke, P. J., Bennett, A., Evans, O., O'Shea, Sarah, Allen, K., Parker, J., Denson, N., Douglas, H., Gendi, M., Hardacre, S., Howley, P., Macqueen, S., Mills, C., Naylor, R., & Raciti, M. (2025). *Success from the perspective of the successful: Equity, success and completion in higher education* (Open Research Newcastle Report, Issue. https://openresearch.newcastle.edu.au/articles/report/Success_from_the_perspective_of_the_successful_equity_success_and_completion_in_higher_education/29046545?file=54491207

Scanlon, L., Rowling, L., & Weber, Z. (2007). 'You don't have like an identity ... you are just lost in a crowd': Forming a Student Identity in the First-year Transition to University. *Journal of Youth Studies*, *10*(2), 223-241. https://doi.org/10.1080/13676260600983684

Slack, K., Mangan, J., Hughes, A., & Davies, P. (2014). "Hot", "cold" and "warm" information and higher education decision-making. *British Journal of Sociology of Education*, *35*(2), 20.

Smith, L. (2011). Experiential "hot" knowledge and its influence on low-SES students' capacities to aspire to higher education. *Critical Studies in Education*, *52*(2), 14.

Strayhorn, T. L. (2018). *College students' sense of belonging: A key to educational success for all students*. Routledge.

Tinto, V. (2017a). Reflections on student persistence. *Student success*, *8*(2), 1-8. https://doi.org/10.5204/ssj.v8i2.376

Tinto, V. (2017b). Through the eyes of students. *Journal of College Student Retention: Research, Theory & Practice*, *19*(3), 254-269. https://doi.org/10.1177/1521025115621917

Weiler, T. (2020). 'Starting Strong': a critical reflection of the complexities of orienting students in higher education. *International Studies in Widening Participation*. (UniSA Education Futures)

Zhang, Y., & Peng, X. (2017). Board # 157 : Demographic shift and its potential effect on higher education. Atlanta.

APPENDICES

Appendix A: Social Self-Efficacy Scale for Students

Fan, C., & Mak, A. S. (1998). Measuring social self-efficacy in a culturally diverse student population. *Social Behavior and Personality*, *26*(2), 131-144. https://doi.org/10.2224/sbp.1998.26.2.131

Participants are requested to indicate their degree of agreement with each item using a 7-point Likert scale from -3 (strongly disagree) to +3 (strongly agree). Further instructions can be found in Fan and Mak's (1998) original article.

Factor 1: Absence of Social Difficulties

Factor 2: Social Confidence

Factor 3: Sharing Interests

Factor 4: Friendship Initiatives

Items:

1. I do not handle myself well in social gatherings.
2. It is difficult for me to make new friends.
3. I have difficulties making new friends in university.
4. I find it difficult to hold a conversation with most people.
5. I have difficulties participating in class discussions.
6. I am usually quiet and passive in social situations.
7. I have difficulties getting a date when I want one.
8. I have difficulties talking to university staff.
9. It is difficult for me to express a different opinion.
10. I feel confident asking a lecturer a question.
11. I feel confident talking to my lecturers.
12. I feel confident asking questions in class.
13. I am confident in my language skills.
14. I feel comfortable requesting information.
15. I have common interests with local people.
16. I have common topics for conversation with local people.
17. I enjoy activities that most local people enjoy.
18. When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.
19. If I see someone I would like to meet, I go to that person instead of waiting for them to come to me.
20. I feel confident in joining a student organisation.

Appendix B: Sense of Belonging Scale – Revised

Hoffman, M.B., Richmond, J.R., Morrow, J.A. & Salomone, K. (2002-2003). Investigating 'sense of belonging' in first-year college students. *Journal of College Student Retention*, *4*(3), 227–256.

Revised scale has 4 factors; original scale was 5 factors (Perceived Faculty Support was 2 factors).

Individual factors were created by adding their respective items and calculating their mean. There are no weights.

No questions are reverse scored.

Completely Untrue	1
Mostly Untrue	2
Equally True and Untrue	3
Mostly True	4
Completely True	5

Perceived Peer Support (8 items)

1. I have met with classmates outside of class to study for an exam.
2. If I miss class, I know students who I could get notes from.
3. I discuss events which happened outside of class with my classmates.
4. I have discussed personal matters with students who I met in class.
5. I could contact another student from class if I had a question.
6. Other students are helpful in reminding me when assignments are due or when tests are approaching.
7. I have developed personal relationships with other students in class.
8. I invite people I know from class to do things socially.

Perceived Classroom Comfort (4 items)

9. I feel comfortable contributing to class discussions.
10. I feel comfortable asking a question in class.
11. I feel comfortable volunteering ideas or opinions in class.
12. Speaking in class is easy because I feel comfortable.

Perceived Isolation (4 items)

13. It is difficult to meet other students in class.
14. No one in my classes knows anything personal about me.
15. I rarely talk to other students in my class.
16. I know very few people in my class.

Perceived Faculty Support (10 items)

17. I feel comfortable talking about a problem with faculty.
18. I feel comfortable asking a teacher for help if I do not understand course-related material.
19. I feel that a faculty member would be sensitive to my difficulties if I shared them.
20. I feel comfortable socialising with a faculty member outside of class.
21. I feel that a faculty member would be sympathetic if I was upset.
22. I feel that a faculty member would take the time to talk to me if I needed help.
23. If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (office hours etc.).
24. I feel comfortable seeking help from a teacher before or after class.
25. I feel that a faculty member really tried to understand my problem when I talked about it.
26. I feel comfortable asking a teacher for help with a personal problem.

Appendix C: The Psychological Sense of School Membership (PSSSM) Scale

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*(1), 79-90. https://doi.org/10.1002/1520-6807(199301)30:1<79::AID-PITS2310300113>3.0.CO;2-X

The Psychological Sense of School Membership (PSSM) Scale measures students' sense of belonging within their educational setting. The scale consists of 18 items; each rated on a 5-point Likert scale ranging from 1 = Not at all true to 5 = Completely true.

Items 3, 6, 9, 12 and 26 are negatively worded. These items must be reverse-scored prior to calculating the total score. For a 5-point scale, recode as follows:

- 1 → 5
- 2 → 4
- 3 → 3
- 4 → 2
- 5 → 1

After reverse-scoring the necessary items, calculate the sum for all 18 items for each respondent. Total PSSM score = Sum of all 18 item scores.

Final PSSM mean score = Total PSSM score ÷ 18

This produces a mean score ranging from 1.0 to 5.0 with higher scores indicating a stronger psychological sense of membership or belonging.

Interpreting the results[3]:

- 1.0–2.0: Low sense of belonging
- 2.1–3.4: Moderate sense of belonging
- 3.5–5.0: High sense of belonging

Instrument items:

1. I feel like a real part of (name of school).
2. People here notice when I'm good at something.
3. It is hard for people like me to be accepted here. (*reversed*)
4. Other students in this school take my opinions seriously.
5. Most teachers at (name of school) are interested in me.
6. Sometimes I feel as if I don't belong here. (*reversed*)
7. There's at least one teacher or other adult in this school I can talk to if I have a problem.
8. People at this school are friendly to me.
9. Teachers here are not interested in me. (*reversed*)
10. I am included in lots of activities at (name of school).
11. I am treated with as much respect as other students.

[3] Note: Interpretation ranges can be adjusted based on sample distribution.

12. I feel very different from most other students here. (*reversed*)
13. I can really be myself at this school.
14. The teachers here respect me.
15. People here know I can do good work.
16. I wish I were in a different school. (*reversed*)
17. I feel proud of belonging to (name of school).
18. Other students here like me the way I am.