Post-Trial review report: Lessons learned from a multi-site RCT of the co-designed Culturally Responsive Graduate Capital employability training for domestic Culturally and Linguistically Marginalised (CALM) students

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Curtin University

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Acknowledgement of Country

The Australian Centre for Student Equity and Success acknowledges Indigenous peoples across Australia as the Traditional Owners of the lands on which the nation's campuses are situated. With a history spanning more than 60,000 years as the original educators, Indigenous peoples hold a unique place in our nation. We recognise the importance of their knowledge and culture, and reflect the principles of participation, equity, and cultural respect in our work. We pay our respects to Elders past, present, and future, and consider it an honour to learn from our Indigenous colleagues, partners, and friends.

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Acronyms

ACSES	Australian Centre for Student Equity and Success
AI	Appreciative Inquiry
ANU	Australian National University
CALD	Culturally and Linguistically Diverse
CALM	Culturally and Linguistically Marginalised
CARM	Culturally and Racially Marginalised
CRA	Culturally Responsive Approaches
DoE	Department of Education
GCM	Graduate Capitals Model
GCS	Graduate Capitals Scale
NCSEHE	National Centre for Student Equity in Higher Education
NESB	Non-English Speaking Background
PCS	Peer Career Supporters
RCT	Randomised Control Trial
RF	Research Fellow
UTS	University of Technology Sydney
VU	Victoria University
WSU	Western Sydney University

1. Executive summary

Culturally and Linguistically Marginalised (CALM) students experience disadvantage in postgraduate employment outcomes in Australia (Carroll & Li, 2022; Lee et al., 2020; Pitman et al., 2019). While this is likely to reflect broader patterns of discrimination that CALM migrants and refugees face in the job market, additional barriers for this cohort include unfamiliarity with local hiring practices, still-developing career networks, and challenges identifying employment opportunities. The underwhelming graduate outcomes and the prevalent patterns of under- or un-employment of CALM graduates demonstrate a need for targeted employability resources that recognise and valorise students' migration experiences, languages, perspectives, and skills. However, few universities currently deliver targeted employability support for domestic CALM cohorts.

This project aimed to co-design a tailored online employability resource for CALM students and to evaluate its impact on students' self-reported graduate capitals measured using the graduate capitals scale via a Randomised Control Trial (RCT) approach and a follow-up qualitative evaluation. An online employability resource, titled "Your Story, Your Career in Australia" was co-designed by experts in careers, resettlement, and higher education as well as students with lived experience of forced migration to meet the specific needs of CALM students. This tool was to be trialled twice at six universities with two cohorts at two distinct timepoints. The first trial was to include CALM students who had been enrolled at university for more than six months and take place in April to May 2025, while the second trial was to include first-year CALM students that had been enrolled at university for six months or less and take place in September to October 2025.

Only four universities remained active in the trial at the end of the recruitment window, with one university withdrawing due to an insufficient CALM cohort size and another due to delays in compiling student population data in time for recruitment. Although there were 9,697 eligible students across four remaining implementing universities, only 246 students opted to participate, falling well short of the required sample size of 106 for each institution to coordinate its own trial in a parallel group RCT. As a result of the low participant uptake, the research team switched to a pooled RCT approach across universities. However, only 95 of the 246 students completed the pre-intervention survey, representing an average dropout rate of 60% across the implementing universities and decreasing the statistical power to 67.4%. A decision to discontinue the RCT was therefore made, as similar attrition over the remaining stages of the RCT would have further reduced the statistical power and the researchers' ability to make accurate inferences based on the RCT results (Frumento & Gimelli, 2025).

Several institutional and sector-level challenges prevented the full implementation of the RCT, including contract delays, difficulties in obtaining reciprocal ethics and data sharing agreements, inconsistent or incorrect student data records, restrictive casual staffing contracts, barriers to participant recruitment, and compressed timelines.

While it was not possible to determine the causal impact of the intervention on students' graduate capitals via an RCT, user experience feedback on the online resource was

provided by Peer Career Supporters (PCS) employed at five of the implementing universities. Twenty-four PCS provided feedback on the resource guided by reflective prompts that were embedded throughout the modules. Twelve of these students also provided consent for the research team to undertake reflexive thematic analysis on their responses, and five participated in a focus group. Key themes identified in PCSs feedback related to cultural responsiveness, accessibility, and insights on their learning about employability and careers.

1.1 Recommendations

1.1.1 Lead research teams for multi-university trials and evaluation projects

- Include sufficient time to discuss, refine, and finalise implementation details between co-design and RCT implementation.
- Ensure you have ample time to appropriately plan, prepare, and design a RCT prior to implementation. In the context of this trial, at least 3–6 months should have been spent in planning and preparation.
- Ensure prompt employment and onboarding of Research Fellows so that they have sufficient time to familiarise themselves with the RCT protocol and the intervention being evaluated.
- Pilot trials at individual universities before multi-university trials and evaluation projects are conducted to ensure that variations in internal processes (for example, recruitment strategies and communication processes) can be identified and accounted for when timelines are developed.
- Establish extended timelines that account for institutional variability in processes and schedules, including time buffers, contingencies, and risk assessments.
- Ensure that the proposed project funding supports more stable employment for staff, especially Research Fellows coordinating local trials. Fixed-term roles are recommended as casual contracts may limit recruitment options, continuity, and responsiveness.
- Plan for the fact that not all universities permit opt-out approaches to student recruitment, which has implications for internal validity, power, and comparability across sites in a multi-institution RCT.
- Ensure that eligibility criteria and relevant parameters are clearly articulated from the outset of the project.
- Provide detailed data templates, including variable specifications and required formats (for example, numeric, categorical, text), well in advance of data collection phases. This is also important to ensure that there is alignment in the data variables that different universities collect in a multi-institutional trial.
- To allow efficient changes to timelines, recognise the critical role of program management principles. For example, set up accessible, accurate Gantt charts. Use these to coordinate and synthesise efforts.
- Where possible, ensure that light touch incentives (for example, gift vouchers) are available to encourage student participation, and that initial engagement is acted upon swiftly.

1.1.2 Higher education sector

- Establish a national ethical recruitment standard for higher education sector RCTs. A system-wide framework enabling consistent and culturally responsive recruitment (including conditions for opt-out or broad-consent recruitment, incentive protocols, and streamlined channels) would remove one of the key barriers that undermined recruitment across institutions and disproportionately affected equity cohorts.
- Establish a national higher education evaluation infrastructure. Not a new evaluation framework, but the practical systems needed to support consistent evaluation across the sector. This includes a national data architecture and data-sharing protocols, a shared ethics clearinghouse, standardised variable dictionaries, and a central platform to support multi-university trials. This infrastructure would address structural challenges identified in the project, including data inconsistencies, ethics delays, staffing pressures, and the need to build long-term evaluation capacity across the sector.
- Require that all staff involved in trials and evaluation projects undertake ACSES's online evaluation training, especially modules covering quantitative impact evaluation.
- Ensure continuity planning for key staff and allocate sufficient project support within core business areas to manage change and resourcing pressures.

1.1.3 Universities

Student data administration teams

- Conduct regular and systematic checks of student data records to ensure accuracy and completeness.
- Maintain data dictionaries and share across institutions to support consistent interpretation and use of variables.
- Simplify data request processes for researchers to facilitate timely access.

Human Research Ethics Committees

- Make a provision for prioritising email-based reviews for low-risk applications or minor modifications, particularly when reinstating previously approved components, to enable faster turnaround during time-sensitive phases.
- Allow professional staff to submit reciprocal ethics applications without requiring an academic sponsor, where appropriate (for example, when professional staff are designated Project Leads).
- Staffing capacity for Human Research Ethics Committees should be expanded to ease pressure on staff and ensure a more prompt turnaround time for ethics protocols and amendments.

1.1.4 Commonwealth Government

- Refine the definition of Non-English Speaking Background (NESB)/CALM students to better signal to stakeholders, including students themselves, how to identify and support students who are culturally, racially, and/or linguistically marginalised.

1.1.5 Project funders including ACSES

- Carefully review projects that combine co-design and RCT methodologies and only select projects for trials if the interventions being evaluated are grounded in evidence and guided by a clearly defined theory of change. If these approaches are combined, RCT Leads should be engaged throughout the co-design stage to prevent misalignments between intervention design and RCT requirements.
- Continue to ensure that there are mechanisms to pause or withdraw trials that have low statistical power or are not functioning as intended.
- Ensure that there is flexibility in funding requirements and timelines for multi-site projects including large scale trials.

2. Background

2.1 A note on the terminology used in this report

In this report, we use the term Culturally and Linguistically Marginalised (CALM) to refer to students who were born overseas, who speak a language other than English at home, and who migrated to Australia within the last 10 years. We deliberately used the term CALM because Non-English Speaking Background (NESB) is too broad to capture the nuanced challenges that migrants (including refugees) experience. We reject the other dominant term of Culturally and Linguistically Diverse (CALD) because this term tacitly benchmarks against a “non-diverse norm”, which is Australian-born (but not First Nations), English-speaking, and of European-heritage (and middle-class, cis gender, heterosexual, able-bodied). This argument has already been criticised in the literature (Baker et al., 2022; Dakka, 2020) and CALD has notably been rejected by the Diversity Council of Australia who use the term Culturally and Racially Minoritised (CARM) (Mapedzahama et al., 2023).

We chose not to use CARM because we argue that capturing linguistic plurality is important in education settings; we note that recent work by Dwyer et al. (2025) has used the term Culturally, Racially, and Linguistically Diverse (CRLD), which may provide a better option to CALD, NESB, and CALM. While we use the term CALM throughout this report, we acknowledge that this language is still problematic and students with these backgrounds may not identify with the term. We welcome efforts from the Multicultural Youth Advocacy Network (MYAN) to co-create better language with young people in a way that reflects their strengths, diversity, and lived experience.

2.2 CALM students in higher education

Culturally and Linguistically Marginalised (CALM) students are not a targeted equity cohort in Australian higher education. However, data on this cohort are collected by the Department of Education (DoE) under a different categorisation of NESB. According to DoE statistics, in 2020, the NESB cohort enrolled in all public universities totalled 26,100, which was a 2.6% increase from 2019 (Australian Government Department of Education, 2024). In this study, CALM students were defined as students born in a non-majority English-speaking country, who speak a language other than English at home, and who migrated to Australia less than 10 years ago. With over one-fifth of Australians now speaking a language other than English at home (ABS Statistics, 2022), and approximately 385,000 students that speak English as an additional language in public Australian schooling (Australian Council of TESOL Associations, 2021), the number of CALM students in higher education will likely increase as these students progress to higher education. It is therefore important to consider the distinct needs of this cohort as well as the strengths that they bring with them to higher education.

2.3 CALM student employability

In recent years, there has been a significant focus on employability in the context of equity cohorts, including NCSEHE-funded initiatives focused on First Nations cohorts (Shalley et al., 2019; Uink et al., 2022), first-in-family cohorts (O'Shea, 2019), students with a disability (Eckstein, 2022; Kilpatrick et al., 2016), LGBTQIA+ students (Wang et al., 2022), and CALM migrants and refugees (Newman et al., 2021), as well as broader inquiries into equity and graduate outcomes (Li et al., 2016; Lim, 2014; Tomaszewski et al., 2019). Research suggests that NESB/CALM students, including refugees, experience disproportionately low meaningful employment rates post-graduation (Carroll & Li, 2022; Lee et al., 2020; Pitman et al., 2019). Known challenges for CALM students in the Australian job market include language barriers, unfamiliarity with job networks, decoding role specifications and selection criteria, and identifying employment/networking opportunities (Newman et al., 2021). Latent discrimination relating to accents (Pham et al., 2018), non-Anglo names (Almeida et al., 2015), and non-recognition of non-Australian work experience (Lee et al., 2020) also contribute to the employability inequities experienced by CALM students (including international students).

Currently, there is a dearth of targeted culturally responsive career-guidance support for CALM cohorts in Australian universities (Newman et al., 2021). This is partly due to inadequate resourcing and training of university careers staff to provide tailored support for equity cohorts, including for CALM students (Andrewartha & Harvey, 2017). Most university careers support also has a limited focus on human capital or "skills" development, meaning that opportunities to develop other forms of graduate capital are missed. A broader understanding of graduate capitals is offered by Tomlinson (2017), who acknowledges the importance of social, cultural, identity, and psychological capital alongside human capital. As Baker et al. (2023) argue, Tomlinson's (2017) graduate employability capitals could be used as a heuristic for redesigning careers advice with a culturally responsive lens.

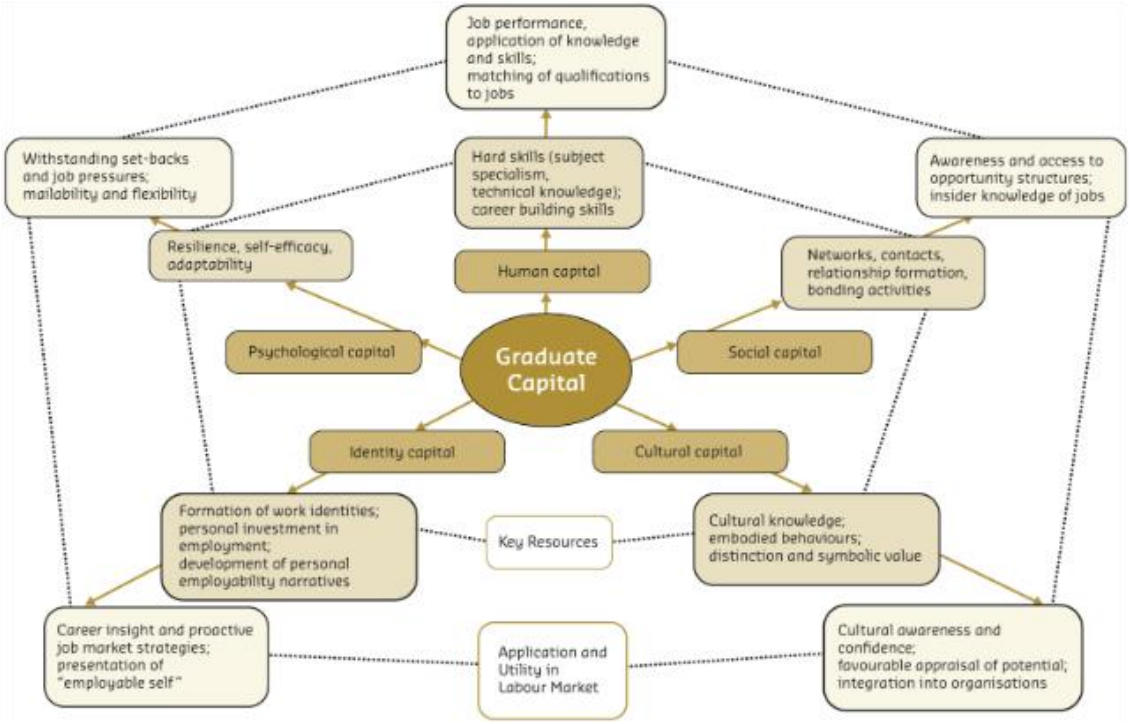
2.4 Graduate Capital Model for graduate employability

Tomlinson developed the Graduate Capital Model (GCM) in 2017 to "develop an alternative, relational conceptualisation of employability" (p. 338) from the dominant "skills-based" view of employability that is still prevalent today. The GCM identifies five forms of graduate capital that are the "key resources that confer benefits and advantages onto graduates. These resources encompass a range of educational, social, cultural, and psycho-social dimensions that are acquired through graduates' formal and informal experiences" (p. 339; see Figure 1). These five capitals are:

- *Human capital development*: focusing on individual capital development, such as resume writing, how to search for jobs, how to promote oneself online and in job applications.
- *Social capital development*: focusing on networks and contacts, such as identifying what contacts you already have, who you can ask for help, how to make contacts on LinkedIn and other social media.

- *Cultural capital development*: focusing on tacit cultural assets, such as how to dress, how to amplify strengths from migration journey, what to write in cover letters, small talk, and interview practice.
- *Identity capital development*: focusing on tacit identity development, such as becoming a professional, internships, and professional practice placements.
- *Psychological capital development*: focusing on resilience and dealing with knock-backs, such as understanding job-seeking and employment processes, understanding how people make hiring decisions.

Figure 1: Graduate Capital Model



Note: This figure is reproduced with permission from Tomlinson (2017, p. 340)

Following from his conceptual work on the GCM, Tomlinson and colleagues developed the Graduate Capitals Scale (GCS) (Tomlinson et al., 2022). The GCS tool was developed as an online self-report test, with questions aligned to key learning outcomes for the five graduate employability capitals. The GCS was validated through a trial at a Russell Group university in the UK based on a sample of 1,501 students (Tomlinson et al., 2022, p. 1193). The validation of the GCS helps to measure beyond the dominant human capital framing of employability; indeed, as the authors note, the scale "has further added confirmatory value to less developed and empirically tested ideas around identity and psychological capitals" (p.1205). For CALM students, the social and cultural dimensions are likely to be acutely significant (Baker et al., 2023), given the likelihood of unfamiliarity with Australian workplace culture and hiring practices, as well as developing networks and the disruption that comes from migration.

The GCS was validated with a group of "academically high-achieving and higher socio-economic students" (Tomlinson et al., 2022, p. 1193), although the authors note that the

model and tool may be adapted for more diverse and heterogeneous cohorts. While the scale was not modified for the CALM cohort in this trial, this is an ongoing area of collaboration between the research team and Michael Tomlinson.

2.5 Culturally responsive approaches

Culturally Responsive Approaches (CRA) have received increased attention in recent years (see Morrison et al., 2019 for a review of this work), albeit in limited ways in the higher education sector. CRA disrupt the hegemonic status quo that takes an assimilationist approach to "diversity"—assuming students will flex and change to accommodate the values, preferences, and practices that shape institutions like universities. Instead, CRA are integrative—welcoming and valorising the plurality of perspectives, languages, cultural practices, and ways of knowing and seeing the world that exist in the student cohort. Strategies to facilitate CRA are student-centred, relational, critically reflexive, holistic, and multidimensional, and include scaffolding using students' cultural knowledge, translanguaging, and critical pedagogies.

Of relevance to this project is the disruption that CRA requires of the norms and assumptions that higher education institutions and their staff (and students) hold about what CALM students need and how they navigate their studies, career readiness, and developing graduate attributes. Significantly, this involves viewing students as experts in their own lives, and therefore primary stakeholders in establishing "what works" for supporting this cohort. To this end, collaborative/co-design approaches are key to adopting CRAs.

2.6 Background summary

CALM students encounter several barriers to employment in the Australian labour market, yet there is a paucity of tailored and culturally responsive careers support in Australian universities to aid their "transition out". To enhance the employability of CALM cohorts in Australia, the literature calls for more culturally responsive approaches that consider a broader range of graduate capitals, including human, social, identity, psychological, and cultural capitals. Drawing on Tomlinson's (2017) graduate employability capitals, this project aimed to develop a culturally responsive careers and employability focused intervention specifically for CALM students, co-designed with CALM students and experts in resettlement, careers, and higher education. The intention was to evaluate the effectiveness of the resource on CALM students' self-reported graduate capitals (measured using the graduate capitals scale) using a mixed method RCT approach at six Australian universities.

3. Objectives

The objectives of this trial were to:

1. Co-design a culturally responsive online employability resource tailored to the needs of domestic CALM students.
2. Evaluate the efficacy of the tailored and culturally responsive online employability resource in enhancing domestic CALM students' graduate employability capitals through an RCT approach in six implementing universities.
3. Explore domestic CALM students' perceptions of the impact of the tailored/culturally responsive online employability resource on their graduate capitals.
4. Explore Careers Practitioners, PCS, Research Fellows and other key stakeholders' perceptions of the impact of the tailored and culturally responsive online employability resource on domestic CALM students' graduate employability capitals.

While the project delivered on objective 1, objectives 2 and 3 could not be met because the RCT was not implemented in full. Objective 4 was only partially fulfilled, with PCS providing feedback on the online employability resource via embedded reflective prompts and a focus group (see Section 5.3).

3.1 Outcomes

3.1.1 Primary outcome

The primary expected outcome of the trial was enhanced employability knowledge and skills of CALM students based on Tomlinson's (2022) GCS. This outcome was to be evaluated by students self-completing the GCS survey at three data points, and analysed by examining whether changes from baseline differed between the randomly allocated groups. It was hypothesised that students who had undertaken the intervention would have improved in many, if not all the graduate capital scale domain's indicators, compared with those in the control group. However, as the RCT was discontinued (see Section 5.2), this primary outcome could not be assessed.

3.1.2 Secondary outcomes

There were five expected secondary outcomes from the trial:

1. The intervention's effectiveness in meeting the specific needs and expectations of CALM students.
2. CALM students' improved motivation to utilise university career support services.
3. Increased utilisation of career support services by CALM students.

4. Improved understanding of career practitioners' professional development needs, especially those serving CALM students.
5. Greater awareness among universities and career peak bodies of the employability challenges faced by CALM students.

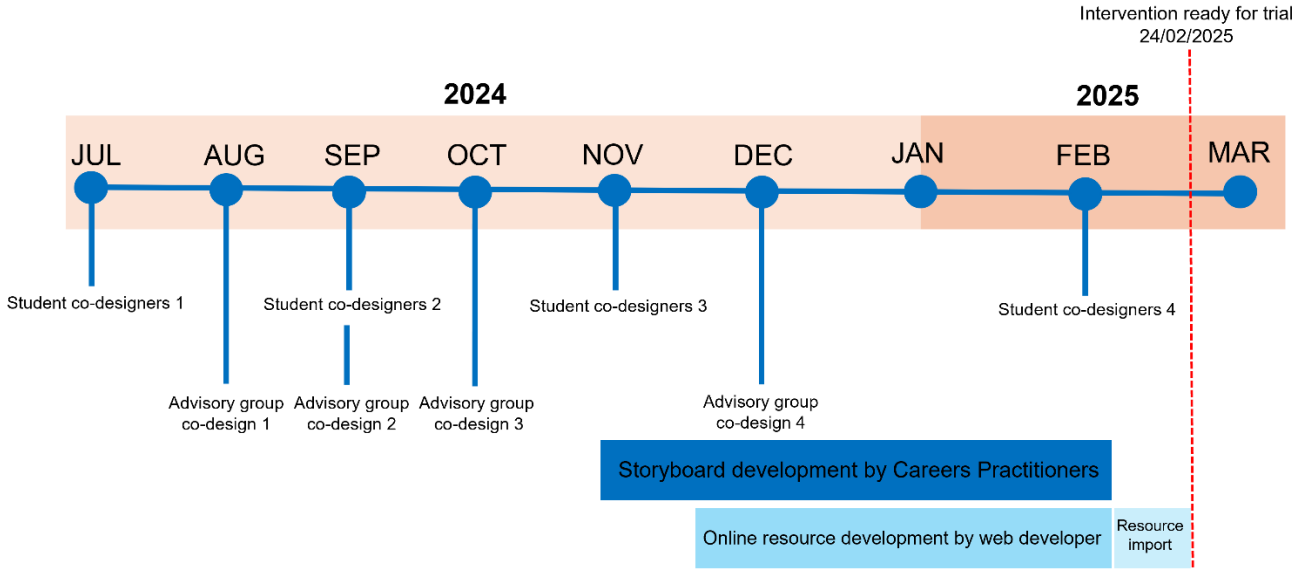
Secondary outcomes 1, 2, and 3 were partially addressed in reflective prompts and focus groups with PCS (see Section 5.3). However, secondary outcomes 3 and 4 were not assessed as focus groups with career practitioners and the advisory group were not conducted.

4. Design and implementation

4.1 Co-design

Initial content ideas for the intervention were developed in four co-design workshops involving project leads and Careers Practitioners from the implementing universities (IU) and an advisory group including experts in resettlement, higher education, and careers. In the project proposal, these workshops were scheduled for April 2024. However, delays in contract execution between the Australian Centre for Student Equity and Success (ACSES) and The Australian National University (ANU) pushed out the official start date of the project to August 2024. The co-design workshops took place over four months (August, September, October, and December; see Figure 2).

Figure 2: Co-design timeline



Alternate workshops were held with CALM student co-designers so that they could provide feedback on the ideas and inform the subsequent stages of co-design based on their experiences (see

Table 1).

Table 1: Students with lived experience co-design schedule

Co-design date	Purpose	Notes and outcomes
Wednesday 24 July 2024 (in-person)	CALM students were interviewed about their experiences of finding work or employment in Australia.	• The research team and MYAN created presentation slides, summarising the key themes identified in CALM student co-designers' responses.
Thursday 26 September 2024 (online)	Students were asked to review pitches from the advisory group and provide feedback on intervention options including workshops or an online resource.	• Student co-designers provided insight into specific careers and employability content that should be included in the intervention. • The student co-designers also discussed components of workshops and online resources that increase engagement and participation.
Sunday 28 November 2024 (online)	Students were asked to review and provide feedback for the draft storyboard.	• The student co-designers provided insight on how specific sections of the storyboard could be improved based on their lived experience. • This feedback was passed on to the team of Careers Practitioners who incorporated the suggestions into the storyboard.
Monday 10 February 2025 (online)	Students were asked to provide feedback on the draft intervention (online resource).	• The student co-designers provided recommendations for improving the online resource that were subsequently incorporated by the web developer.

The co-design followed an Appreciative Inquiry approach (see

Table 2). Initial ideas for the intervention were refined into a storyboard document by a team of Careers Practitioners from the implementing universities, led by Clare Hayes, a Careers Practitioner with learning design experience from Curtin University. The storyboard outlined the learning objectives for the course and the specific content and activities to be covered in each of the course modules. The storyboard was provided to the web developer who created the master version of the course in Canvas.

Table 2: Co-design schedule

Co-design date	Appreciative Inquiry (AI) stage	Co-design summary
August	Discover	• Developed a shared understanding of co-design for the project. • Developed a shared understanding of the "problem". • Captured reflections on the pre-reading material and Prezi where CALM students discussed their experiences and challenges of seeking employment in Australia (see below).
September	Dream big	• The advisory group were organised into breakout rooms and asked to "dream big" and design an intervention to support CALM students with employability. • Restraints and limitations (such as time, resourcing, cost) were then added to help the advisory group refine their suggestions. • Working in small groups, the advisory group were tasked with coming up with an "idea pitch" that could be presented to the student co-designers.
October	Dream big and design	• Prior to the meeting, the advisory group were presented with concept notes for an online resource and a series of hybrid workshops. • The RCT Technical Lead provided an overview of the Graduate Capitals Scale and the Difference-in-Differences method to measure any potential increases in students' employability scores after their participation in the RCT intervention. • The advisory group were split into five groups reflecting each of the five Graduate Capital domains. • In a Mural board (online collaborative tool), the groups were asked to identify activities that could go into a workshop or an online resource, and which could develop the specified Graduate Capital domain. • The groups were also asked about specific ways the Student Partners could facilitate and assist the interventions.
December	Design	• Prior to the meeting, the advisory group was presented with a storyboard for an online resource that had been drafted by a team of Careers Advisors from the implementing universities. • The advisory group were split into four breakout rooms. In each breakout room, a Careers Practitioner provided an overview of 1–2 modules of the storyboard and then sought feedback using a series of reflective prompts and questions. • Breakout rooms were shifted every 15–20 minutes to ensure that each group had an opportunity to review the entire storyboard. • Feedback and suggestions were captured using an online Mural board and shared amongst participants for further review and refinement.

The storyboard was then developed into the LMS-friendly resource by our web developer, who made the content interactive, engaging, and user-friendly for CALM students. An essential part of the design was the inclusion of CALM students in the modules, which was achieved through commissioning content from two of the co-design advisory groups—MYAN and CareerSeekers; see Table 3 for the overview of the commissioned content. We also generated non-commissioned content from co-design advisory group members (see Table 4). The web developer also refined the intervention based on feedback from the student co-designers and Careers Practitioners to create the version to be trialled.

Table 3: Commissioned content for online resource

Content	Created by	Content summary
Introduction videos for course modules	MYAN is Australia's peak body representing the rights and interests of young people with migrant and refugee backgrounds.	• MYAN produced and edited nine short (2–3 minute) introductory videos for the online resource. These videos, which feature a multicultural young person as a presenter, provide an overview of the course/module content and why it is important for students to understand.
CALM alumni testimonial videos	CareerSeekers is an agency that supports humanitarian entrants into professional careers in Australia.	• CareerSeekers produced and edited seven short (2–3 minute) videos of CALM alumni testimonials, where people with CALM and/or forced migration backgrounds shared their employment experiences in Australia.

Table 4: Additional non-commissioned content for online resource

Content	Created by	Content summary
Video interview with a graduate recruiter	The project team recorded an interview with a Graduate Programs Manager at Westpac.	• Three short (2–3 minute) videos covering how to prepare for interviews, how to respond to different types of interview questions, and general tips for interviews.
Video interview with a graduate recruiter	The project team recorded an interview with an Early Careers Manager at Ability Action Australia.	• Three short (2–3 minute) videos covering the hidden job market, what it is and how to access it and some examples and tips for accessing it.

4.2 RCT summary

An RCT Technical Lead was employed by the ANU to coordinate the RCT, with each implementing university (except for ANU) employing a Research Fellow (RF) to lead the local university trials (total of five RFs). The RCT Technical Lead facilitated two RF training sessions in February, with one focusing on RCT principles and procedures and the other on the RCT protocol that had been designed around the intervention. The RFs also received a comprehensive RF training pack outlining all aspects of the protocol and including relevant appendices to support implementation (such as, direct and indirect recruitment information and guidelines on data analysis). Delays in finalising the intervention necessitated the RF training being delivered in two parts and meant that there was insufficient time for the protocol to be submitted to ACSES for peer-review.

The initial plan was to run a parallel group RCT, with each implementing university coordinating their own “mini-RCT”, with their own intervention and control groups. Each university would conduct two trials with two different CALM cohorts at different timepoints. The first trial would target CALM students that had been enrolled at the university for more than six months and take place in April–May 2025, while the second trial would target first year CALM students that had been enrolled at university for six months or less and take place in September–October 2025. In this design, the RCT Technical Lead would conduct independent randomisation for each implementing university, and each university’s data would be analysed separately, generating their own results. Students that were randomly allocated into the intervention group would receive access to the online employability resource over a five-week period, while those in the control group would not be given access to the modules during the trial period (although they could still freely engage with other careers and employability services, and request access to the online resource post-trial). All implementing universities were provided with a Gantt chart showing critical RCT milestones alongside their university timetable. All the implementing universities were scheduled to follow the same timeline, except for Victoria University (VU), which was scheduled to start and finish earlier to align with their block model timetable.

Based on the estimated medium effect size (Cohen's d = 0.5) and assuming a statistical power of 80% and significance level of p-value = 0.05 (two tailed), the RCT Technical Lead calculated the minimum required sample size for each trial at each implementing university to be 106 students, where 53 students are randomly allocated into the intervention and control groups. Two universities withdrew from the trial at this point, with VU unable to compile student population data in time for recruitment and ANU's eligible CALM cohort being too small to continue (n = 84 students). The remaining four implementing universities (Monash University [Monash], University of Technology Sydney [UTS], Western Sydney University [WSU], and Curtin University [Curtin]) were able to commence recruitment. However, only one of the implementing universities (Monash) was able to meet the minimum required sample size. Only 246 students opted into the research across the four remaining implementing universities, representing less than 5% of the eligible student population of 9,697 (range between 2–4% at the different universities).

Due to low participant numbers, the decision was made on 24 April 2025 to switch to a multi-site RCT (a single RCT pooled across universities), with stratified randomisation by site (for example, by university). Under this design, the data from all implementing universities would

be analysed collectively, with university modelled as a fixed effect in the analysis to account for any potential site-specific variations. Using the same estimated effect size, power, and alpha, the RCT Technical Lead calculated that the required sample size for the multi-site RCT would require a total sample size of 214 across all implementing universities. Allowing for an anticipated 40% dropout rate consistent with other RCTs, a minimum of 128 participants (or 64 in intervention and control groups) would need to be retained until the post-intervention survey to maintain sufficient statistical power. However, only 95 students completed the pre-intervention survey. With dropout rates ranging between 52–71% across universities, the statistical power reduced to 67.4%. The RCT Technical Lead calculated that if attrition were to continue at a similar rate through the intervention and post-intervention survey, then the projected sample size would fall between 36 and 57 students and the statistical power would drop below 60%, substantially increasing the risk of a Type II error (i.e., failing to detect a meaningful effect if it exists). Therefore, the decision was made to formally discontinue the RCT.

Following the discontinuation of the RCT, the lead research team sought ethics approval to change the methodological approach to a more qualitative line of inquiry. In the revised approach, all students that opted in to the research would receive access to the intervention (that is, no intervention and control groups) while retaining the same data collection methods (pre- and post-intervention surveys and post-intervention focus groups). However, further delays and the timing of university exams led two more implementing universities to withdraw. The lead research team ceased all participant data collection. All students that opted in were provided with access to the online employability resource and notified that any data collected would be securely destroyed. Students that opted in and completed the pre-intervention survey were also invited to claim a $10 voucher in recognition of their time. UTS continued to invite students to complete the trial for an internal evaluation, however, only three students completed all the modules in the online resource.

4.3 User experience testing by Peer Career Supporters

Although the RCT did not proceed, 24 PCS were employed at five of the implementing universities (UTS, WSU, ANU, Curtin, and VU) to test the intervention and provide feedback on their user experience. The PCS submitted responses to Likert Scale and open text questions that were embedded throughout the online employability resource. The prompts invited the PCS to reflect on the effectiveness of the modules and their relevance and responsiveness to the needs of CALM students. While the PCS were employed to engage with the resource, they were encouraged to be honest and critical in their reflections to support the refinement of the resource. Twelve of the PCS provided consent for the research team to undertake qualitative analysis on their reflective prompts, although one participant did not submit answers to every question. Five of the PCS participated in a focus group to discuss the impact of the online employability resource. Key themes identified in the reflective prompt responses (n = 11) are briefly discussed below in Sections 4.3.1, 4.3.2, and 4.3.3. Illustrative quotes are provided for each theme with pseudonyms (for example, PCS1, PCS2) used to protect participants' identities. Although the response rate was low, anecdotally, the findings are consistent with patterns observed in responses for the broader

PCS cohort. Demographic data obtained for all participants except one focus group participant is shown in Table 6.

4.3.1 Student learning insights

Most of the PCS agreed or strongly agreed that the online resource increased their understanding of their career goals and pathways (8/11 respondents) and their confidence in making informed career decisions (10/11 respondents). In their feedback, the PCS cited the inclusion of practical decision-making tools and frameworks alongside activities encouraging reflection on their skills, strengths, and values as key contributors to this sense of career readiness. As one PCS expressed:

> *Positive elements that stand out include clear explanations, practical tips, and useful tools like decision-making frameworks and networking strategies. The inclusion of various topics related to career planning offers a good foundation for learners. (PCS4)*

The content on networking was considered especially valuable for CALM cohorts, and the PCS appreciated how the resource re-framed networking in more approachable terms, highlighted cultural nuances in networking, and provided strategies to support CALM students in identifying and expanding their networks. As one PCS explained:

> *Module 6.1's Networking Confidence Builder was also particularly useful. Many CALM students come from backgrounds where networking isn't part of their educational culture. This activity broke down the process into manageable steps and offered culturally sensitive strategies to build meaningful professional relationships in Australia. (PCS8)*

The inclusion of activities about wellbeing and managing setbacks in careers was also valued by the PCS, who felt that this content was highly relevant for CALM cohorts but often missing in generalised careers initiatives.

4.3.2 Cultural responsiveness

The PCS highlighted several elements of the online resource that they felt were culturally responsive. The PCS appreciated that the online resource acknowledged employment challenges experienced by CALM cohorts, such as a lack of recognition of their prior qualifications. The resource's emphasis on the skills that CALM cohorts may have developed through their migration experience and how these could be showcased in job application documents and interviews was also appreciated by the PCS. PCS valued the representation of people from CALM backgrounds, especially in video testimonials where CALM alumni reflected on their own lived experiences and shared tips and guidance:

> *The videos throughout the modules always present views and perspectives from people with different backgrounds and identities. (PCS9)*

The content on Australian workplace culture and expectations was considered useful for CALM cohorts, and the PCS appreciated how the resource encouraged students to embrace their cultural diversity rather than assimilating to "fit in" to Australian workplaces. The PCS also suggested ways that the online resource could be more culturally responsive, such as through the inclusion of practical strategies to address racism and discrimination.

> *Dealing with racial discrimination is something that I felt could have been explored in this course. I have not experienced it first-hand, but I have seen others and heard from others that this still unfortunately occurs within the workplace. Specifically, individuals openly mock other ethnic groups because of their accents or their beliefs. An additional module could be included perhaps noting the Racial Discrimination Act and mentioning different ways to deal with this in the workforce. (PCS6)*

A module focusing on work rights has been included in the updated version of the online resource to incorporate this feedback.

4.3.3 Accessibility

Accessibility was another prominent theme in the PCSs responses, with the lack of some accessibility features impacting their experience of the resource. As one PCS highlighted:

> *I believe the course was quite accessible since the content was clearly explained and the time commitment was manageable if spread over a few weeks. However, I did encounter a problem with some videos that lacked subtitles. (PCS5)*

The PCS pointed out several ways that accessibility could be improved for CALM cohorts such as through adding subtitles and transcripts to all videos and enabling text-to-speech features. Table 5 outlines the key accessibility issues identified by the PCS and how these were resolved in the updated version of the online resource.

Table 5: Resolved accessibility issues identified by the Peer Career Supporters

Accessibility issues identified by PCS	**Resolutions in updated online resource**
Lack of subtitles in some videos	Subtitles were added to all videos
Lack of transcripts for all videos	Transcripts were added to all videos
Small font size	Default font size increased throughout the resource
Lack of text to speech function	Microsoft immersive reader enabled where possible
Some activities required too much clicking	Activities adapted to reduce clicks
Drag and drop activities difficult for users with voice activated assistive technology	Drag and drop activities replaced with alternatives
Inconsistent formatting	Consistent formatting applied throughout modules
Spelling errors and typos	Corrected in revised modules
Text heavy sections	Reduced where appropriate

Table 6: Demographics for Peer Career Supporters who participated in the research

	Background				Course information			Length of time living in Australia
	Age	**Gender**	**Ethnicity**	**Language spoken at home**	**Year of study at current university**	**Field or discipline of study**	**International or domestic student**	
PCS1*	27	Female	Pakistani	English	Undergraduate Year 4	Biomedical Engineering	Domestic	Over ten years but not born in Australia
PCS2	21	Female	Persian/Iranian	Farsi	Undergraduate Year 4	Laws	Domestic	Over ten years but not born in Australia
PCS3	22	Female	Sri Lankan	Tamil and English	Undergraduate Year 3	Nursing	International	Over ten years but not born in Australia
PCS4	24	Female	Chinese	English, Malay, Mandarin Chinese, Hakka Chinese, Cantonese	Postgraduate Year 1	Business	International	1 to 5 years
PCS5	20	Female	Bengali	Bangla	Undergraduate year 2	Economics	Domestic	Over ten years but not born in Australia
PCS6	22	Male	Filipino	Bisaya	Undergraduate Year 4	Medical Science	Domestic	Over ten years but not born in Australia
PCS7	23	Female	Vietnamese	Vietnamese, English	Undergraduate Year 5	Data Science Engineering	Domestic	Over ten years but not born in Australia
PCS8	28	Non-Binary	Bangladesh	Bengali	Postgraduate Year 2	Predictive Analytics	International	1 to 5 years
PCS9*	21	Male	Chinese	Cantonese	Undergraduate Year 3	International Relations	Domestic	1 to 5 years
PCS10*	22	Female	Brazilian	Portuguese	Postgraduate Year 1	Psychology	Domestic	5-10 years
PCS11*	20	Female	Pakistani	Urdu	Undergraduate Year 4	Psychology	Domestic	5 to10 years
PCS12	27	Male	Indian	Marathi	Postgraduate Year 2	Business Analytics	International	1 to 5 years

*Denotes participation in focus group. Demographic information is not yet available for one focus group participant.

5. Issues encountered

The major issues that prevented implementation of the RCT are outlined below. We have identified these issues so that researchers, practitioners, and evaluators may benefit from our experiences and the insights gained. While we have organised these issues into key topics, it is important to note that these challenges were often interrelated and compounded one another across the trial sites. For example, contract and staffing delays created downstream pressure on co-design and RCT protocol development, and difficulties accessing accurate student data and obtaining reciprocal ethics approvals hindered recruitment efforts. The lessons learned from these issues and our recommendations can be found below in Sections 6 and 7.

5.1 Contract issues

- Delays in executing the lead contract between ACSES and ANU pushed out the start date for the project and therefore the co-design of the intervention. The proposed project was intended to start in March 2024, with co-design taking place in April 2024, but the project did not officially start until August 2024.
- Contract delays at ANU meant that the online employability resource could not be imported in its entirety by the scheduled due date. This resulted in increased workload for the web developer contracted by ANU, educational design teams at the implementing universities, as well as other project staff. Delays in uploading the online resource also impacted the RCT Technical Lead's ability to finalise the RCT protocol around the intervention.

5.2 Student data issues

- Some implementing universities experienced delays in accessing student data to determine the size of the eligible CALM cohort. This partly reflected unclear eligibility criteria (for example, lack of clear date parameters for criteria on the cutoff date for calculating the length of time a student has lived in Australia) and a lack of guidance on the format of requested variables (for example, text, numeric, or categorical). Additionally, some data variables were not readily obtainable at some universities, such as students' year of arrival in Australia.
- Inconsistent or missing data variables also complicated the determination of the eligible student population at some implementing universities.

5.3 Online resource import challenges

- While the online resource was successfully integrated into different learning management systems, some implementing universities encountered issues with the transfer of content or functionality, requiring additional work to resolve.

- This was particularly due to incompatibility between different online learning management systems used at the participating universities, ranging from Canvas, to Moodle, to LMS.

5.4 Ethics and data sharing barriers

- Some implementing universities experienced delays in receiving reciprocal ethics, with several additional steps or approvals (for example, from legal teams or student data administration teams) required before the protocol could be signed off.
- At one implementing university, professional staff members were not permitted to submit reciprocal ethics protocols, and an academic sponsor was required. Although this did not result in significant delays, it is an additional layer of complexity that researchers/evaluators should be aware of.
- The lead research team encountered delays in receiving approval for minor or low-risk ethics modifications at time critical stages. This was particularly problematic when trying to re-instate a previously approved research component (provision of vouchers to participants) and when attempting to change the methodological approach from an RCT to a more qualitative line of inquiry.
- Some universities were unable to obtain a data sharing agreement due to complex internal approvals and compliance processes.

5.5 Recruitment challenges

- The ethics committee at the lead university would not allow the researchers to use an opt-out approach to recruitment because it is not considered a form of consent (including implied consent) in the National Statement and guidelines approved under Section 95a of the Privacy Act 1988.
- At some implementing universities it was not possible to directly recruit participants by emailing eligible students about the opportunity.
- Some implementing universities reported insufficient channels for reaching the target cohort via indirect recruitment approaches, or a lack of alignment between the timing of indirect recruitment strategies (for example, fortnightly newsletters) and the RCT recruitment window.
- A key issue was that no incentives were offered to encourage student participation in the trial. This is because it was not possible to identify a cross institutional voucher distribution strategy prior to recruitment.
- Students may not have identified with the term “CALM” and their uptake of the invitation to participate may have been impacted by our choice of terminology. If another term had been chosen, such as NESB or CALD, participation might have higher, but the issues relating to these language choices (too generalised/othering) would not be challenged (see Section 2.1).

5.6 Staffing challenges

- HR and contract delays resulted in the late employment and onboarding of Research Fellows at some implementing universities.
- The sector-wide backlash against unpaid labour, and the subsequent institutional constraints around casual employment made cross-institutional collaboration and flexibility almost impossible for some universities.
- Restrictive time allocations tied to casual staffing contracts for Research Fellows reduced their flexibility to attend meetings and constrained their ability to coordinate intensive RCT stages and/or undertake key protocol requirements on specific dates.
- Volatility within the higher education sector was a paramount challenge, with three of the initial partner universities withdrawing due to redundancies and staffing/resource efficiencies within careers teams. Almost every implementing university that remained in the project was impacted by ongoing restructuring, with careers teams especially affected.
- At one implementing university, there was no process for reconciling research funds with the budget of the professional staff team leading the project. This caused significant delays in processing project funding, requiring operational funds to cover costs for the duration of the project.

5.7 Need for evaluation capacity-building

- The project revealed that there is a need for further capacity-building on RCT principles and procedures across the higher education sector.
- A lack of clear communication about the stringent requirements of the RCT method at the outset of the project complicated the co-design process, with large amounts of the course content needing to be removed to limit confounding variables and protect the integrity of the trial.

5.8 Compressed timelines

- Compressed timelines were a prominent challenge, as was the shifting of timelines to accommodate evolving project requirements. The consensus was that the project timeline was too short and inflexible to account for varying institutional processes at the implementing universities.

6. Lessons learned

Although the RCT did not proceed, there are several learnings that can be taken from the process. This section highlights some of these learnings relating to the coordination of multi-university initiatives, staffing and resourcing, student data reliability, recruitment of participants, methodological insights, evaluation capacity, and the value in failure and strengths of co-design.

6.1 Coordination of multi-university initiatives

A key lesson learned was that many Australian universities do not currently have the infrastructure to facilitate multi-university research endeavours, especially multi-site RCTs using primary data. The lack of efficient systems for data sharing and reciprocal ethics approval at some institutions made it especially difficult to align activities across universities and meet critical deadlines. The research team recommends piloting RCTs at individual universities first before multi-university trials and evaluation projects are conducted to ensure that variations in internal processes (for example, recruitment strategies and communication processes) can be identified and accounted for when timelines are developed. Extended timelines with built-in flexibility are also encouraged for multi-site projects to accommodate varied institutional processes and schedules. There is also a need for email-based reviews of low-risk ethics modifications, because slow procedural ethics reviews can constrain the ability of lead research teams to respond to challenges.

6.2 Staffing and resourcing

This project took place during a challenging time for the Australian higher education sector, with multiple universities affected by restructuring and redundancies. With ongoing uncertainty across the sector, universities need to ensure that contributing teams on multi-site projects are well supported, and that continuity arrangements are in place to prevent institutional knowledge loss or increasing staff workloads during critical project stages. Our experience highlighted that project timelines need to include contingency plans and that risk assessments should be undertaken to identify and address potential timeline disruptors, including lengthy HR processes and delays in issuing contracts. Timelines for multi-site projects also need to account for varying university semester breaks, examination periods, and public holidays, which may vary between states. There is also a need for more stable and flexible funding arrangements for staff employed to conduct evaluations as casual contracts can constrain the ability of Research Fellows to coordinate RCTs.

6.3 Reliability of student data

A key takeaway was that eligibility criteria need to be clearly defined, with standardised templates on the type and format of data need to be provided to Research Fellows/Evaluators well in advance of the data request phase. The Research Fellows in this

project identified several issues with data quality including discrepancies in enrolment and student arrival dates and data accuracy and labelling inconsistencies. These issues underscore the importance of conducting regular and systematic checks of student data administration systems to ensure reliability. There is also a need for universities to develop data dictionaries so that data variables can be consistently applied at different institutions and for more streamlined processes for researchers to gain access to student data in a timely manner. A set of national data sharing guidelines should be established to support data sharing between universities.

6.4 Recruitment of participants

An important learning from this project was that it can be difficult to recruit and retain enough participants to run RCTs in universities, particularly when opt-out recruitment methods are not permitted by ethics committees and no incentives are offered to encourage participation. There is a need for better structures to support indirect recruitment of students for research, trials, and evaluation projects, especially in institutions that do not permit direct recruitment of eligible students.

6.5 Methodological insights

This project revealed that there are constraints to combining co-design and RCT methodologies, especially when they occur in direct sequence. Co-design was a necessarily fluid and dynamic process to ensure that the intervention authentically reflected stakeholders' insights and suggestions. Co-design also needed to be responsive to institutional circumstances, such as insufficient staffing capacity to resource in-person Peer Assisted Study Sessions (PASS) sessions at some universities. The iterative nature of co-design made it difficult to pin down key intervention elements (for example, online module structure and content, duration of intervention access) that would have supported the earlier refinement of the RCT protocol and development of the effect size estimate. The level of standardisation required for the RCT also limited what could be included in the intervention. Links to educational content and university specific careers resources outside of the online resource were removed due to the risk of confounding the results. While the underlying logic behind this removal of content was understood by the Careers Practitioners, some expressed that it conflicted with their belief that the resource should be as informative as possible.

Our experience reaffirms that RCTs should be conducted to evaluate the effectiveness of interventions that are backed by prior evidence and which have a clearly documented theory of change rather than novel resources. Applications for trials that combine co-design and RCT methodologies need to be carefully reviewed by funding organisations. If co-design and RCT methodologies are combined, we recommended that:

1. RCT Leads are engaged in both the co-design and RCT aspects of the project to prevent misalignments between intervention design and RCT requirements.
2. Sufficient time is allocated to RCT design and protocol development (at least 3–6 months for a project of this size).

6.6 Evaluation capacity

This project highlighted the importance of clear and early communication with stakeholders about the methods being used to evaluate an intervention to ensure that they are aware of the rationale behind the approach as well as its limitations and constraints. There is a need for evaluation capacity-building across the sector, especially in relation to RCT principles and procedures. Training for equity practitioners is especially important given that the responsibility for evaluating equity initiatives often falls on equity units, and staff in these units may not have had previous training in research or evaluation, especially in quantitative impact evaluation approaches such as RCT. ACSES's online evaluation training initiative represents an important step to strengthening evaluation capability across the sector.

6.7 Value in RCT non-progression and strengths of co-design

Despite the challenges, several valuable outcomes emerged from the project. One significant and positive aspect was the collaboration and shared learning that that project facilitated. This project demonstrates that engaging in co-design with universities and external organisations can lead to the development of rich and responsive interventions to support equity students. While it was not possible to determine causal impacts via an RCT, evidence from this project suggests that CALM students respond well to employability interventions that have been co-designed to meet their needs. This project also illustrates that the sector can gain valuable insight from RCTs that do not proceed, underscoring the importance of having mechanisms in place to pause or cancel RCTs that are not progressing as planned. We learned that it is important to reflect and report on the challenges that we experienced in failing to implement an RCT and to develop recommendations to support the sector in addressing these barriers in the future.

7. Recommendations

7.1 Lead research teams for multi-university trials and evaluation projects

- Include sufficient time to discuss, refine, and finalise implementation details between co-design and RCT implementation.
- Ensure you have ample time to appropriately plan, prepare, and design a RCT prior to implementation. In the context of this trial, at least 3–6 months should have been spent in planning and preparation.
- Ensure prompt employment and onboarding of Research Fellows so that they have sufficient time to familiarise themselves with the RCT protocol and the intervention being evaluated.
- Pilot trials at individual universities before multi-university trials and evaluation projects are conducted to ensure that variations in internal processes (e.g., recruitment strategies and communication processes) can be identified and accounted for when timelines are developed.
- Establish extended timelines that account for institutional variability in processes and schedules, including time buffers, contingencies, and risk assessments.
- Ensure that the proposed project funding supports more stable employment for staff, especially Research Fellows coordinating local trials. Fixed term roles are recommended as casual contracts may limit recruitment options, continuity, and responsiveness.
- Plan for the fact that not all universities permit opt-out approaches to student recruitment, which has implications for the internal validity, power, and comparability across sites in a multi-institution RCT.
- Ensure that eligibility criteria and relevant parameters are clearly articulated from the outset of the project.
- Provide detailed data templates well in advance of data collection phases, including variable specifications and required formats (for example, numeric, categorical, text). This process is also important to ensure that there is alignment in the data variables that different universities collect in a multi-institutional trial.
- To allow efficient changes to timelines, recognise the critical role of program management principles. For example, set up accessible, accurate Gantt charts. Use these to coordinate and synthesise efforts.
- Where possible, ensure that light touch incentives (for example, gift vouchers) are available to encourage student participation, and that initial engagement is acted upon swiftly.

7.2 Higher education sector

- Establish a national ethical recruitment standard for RCTs. A system-wide framework enabling consistent, culturally responsive recruitment (including conditions for opt-out or broad-consent recruitment, incentive protocols, and streamlined channels) would

remove one of the key barriers that undermined recruitment across institutions and disproportionately affected equity cohorts.

- Establish a national higher education evaluation infrastructure. Not a new evaluation framework, but the practical systems needed to support consistent evaluation across the sector. This includes a national data architecture and data-sharing protocols, a shared ethics clearinghouse, standardised variable dictionaries, and a central platform to support multi-university trials. This infrastructure would address structural challenges identified in the project, including data inconsistencies, ethics delays, staffing pressures, and the need to build long-term evaluation capacity across the sector.
- Require that all staff involved in trials and evaluation projects undertake ACSES' online evaluation training, especially modules covering quantitative impact evaluation.
- Ensure continuity planning for key staff and allocate sufficient project support within core business areas to manage change and resourcing pressures.

7.3 Universities

7.3.1 Student data administration teams

- Conduct regular and systematic checks of student data records to ensure accuracy and completeness.
- Maintain data dictionaries and share across institutions to support consistent interpretation and use of variables.
- Simplify data request processes for researchers to facilitate timely access.

7.3.2 Human Research Ethics Committees

- Make a provision for prioritising email-based reviews for low-risk applications or minor modifications, particularly when reinstating previously approved components, to enable faster turnaround during time-sensitive phases.
- Allow professional staff to submit reciprocal ethics applications without requiring an academic sponsor, where appropriate (for example, when professional staff are designated Project Leads).
- Staffing capacity for Human Research Ethics Committees should be expanded to ease pressure on staff and ensure a more prompt turnaround time for ethics protocols and amendments.

7.4 Commonwealth Government

- Refine the definition of NESB/CALM students to better signal to stakeholders, including students themselves, how to identify and support students who are culturally, racially, and/or linguistically marginalised.

7.5 Project funders including ACSES

- Carefully review projects that combine co-design and RCT methodologies and only select projects for trials if the interventions being evaluated are grounded in evidence and guided by a clearly defined theory of change. If these approaches are combined, RCT Leads should be engaged throughout the co-design stage to prevent misalignments between intervention design and RCT requirements.
- Continue to ensure that there are mechanisms to pause or withdraw trials that have low statistical power or are not functioning as intended.
- Ensure that there is flexibility in funding requirements and timelines for multi-site projects including large scale trials.

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