

**STRONGER  
BRAINS**

*For better lives* 



# REWIRE THE BRAIN IMPACT REPORT

AUGUST 2020

This report has been prepared by Stronger Brains Limited, an Australian registered charity.

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# OUR IMPACT

## KEY FINDINGS

STRONGER BRAINS is dedicated to breaking the cycle of intergenerational disadvantage, through the delivery of validated neuroplasticity-based interventions. This impact report summarises the findings of the Rewire the Brain (RTB) project, funded by the Australian Government's Try, Test and Learn Fund. Reaching people at risk of long-term unemployment the project trialled the use of STRONGER BRAINS within education and employment services. It aimed to address the social, emotional and cognitive factors which contribute to disengagement from education, long-term unemployment and welfare dependency.

our reach

# 364

participants across  
**10 locations**  
in NSW and QLD

**TAFE + Disability  
Employment Service +  
Transition to Work Program**



# 44%

2 in 5

learning difficulties  
mental health  
physical disability



**69%**  
15-24  
YEARS

**1 in 5**  
non english  
speaking



**45%**  
lived in a  
disadvantage  
postcode



**THREE**  
On average  
3 traumatic  
childhood  
events  
(28% more than  
5 events)



**ONE IN  
THREE** DID NOT  
FEEL JOB  
READY

**JOB**





**Sustained improvements in brain health and job skills**

Area	Proportion with improvement
Focus and attention	Increase by <b>66%</b>
Problem-solving & decision making	Increase by <b>66%</b>
Processing speed	Increase by <b>61%</b>
Working memory	Increase by <b>63%</b>
People skills	Increase by <b>44%</b>

**Improved social and emotional wellbeing**

**Emotional wellbeing**

**40%** decreased depression   **30%** improved anxiety   **23%** Reduction in stress

**Resilience**

**36%** felt more equipped to manage life problems or challenges

**Improved learning and earning outcomes**

**Job motivation**

**41%** were more motivated to find a job

**Job confidence**

**38%** felt more confident to get a job

**Job readiness**

**44%** were more ready to find a new job



At the end → After three months

**82%** engaged in education or employment   **90%** engaged in education or employment

**18%** were not studying or employed   **10%** were not studying or employed

**Social Value**

**\$1,644,743**  
net social benefit

**\$5,771**  
per participant

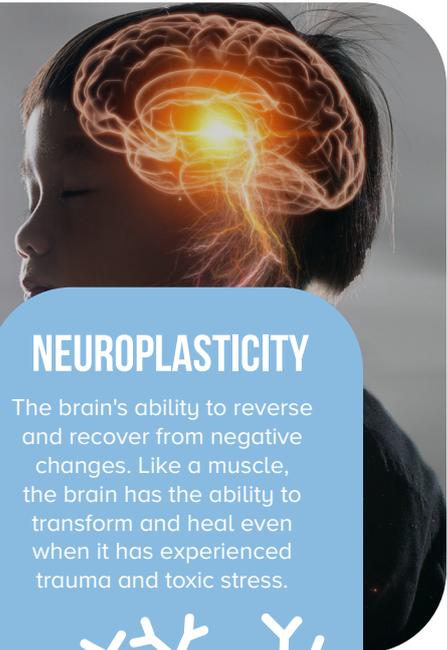
Benefit-cost ratio: 1.63



# THE NEED FOR STRONGER BRAINS

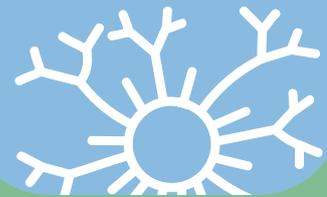
## Childhood trauma changes brain function

One in three people in Australia is impacted by childhood adversity. In recent years, advances in neuroscience have led to a growing understanding that trauma, abuse or neglect in early childhood changes brain function. Trauma impairs neurological processing and cognitive function at every level - the brain's speed, memory, accuracy, attention control, learning, self-regulation and impulse control. This means that children and young people who have experienced trauma and sustained toxic stress are unable to access the part of their brain, essential for learning, decision making and controlling emotions. These cognitive barriers make it much more difficult for them to remain engaged in education or gain employment, which can contribute to long-term welfare dependency and poor health and wellbeing outcomes. This persistent cycle of disadvantage has substantial economic costs and major social policy implications, which require enormous ongoing investment across the social service sector.



### NEUROPLASTICITY

The brain's ability to reverse and recover from negative changes. Like a muscle, the brain has the ability to transform and heal even when it has experienced trauma and toxic stress.



## IMPACT OF TRAUMA ON THE BRAIN

**REDUCED ABILITY**



to respond, learn, self-regulate, control impulses and tolerate stress

**INCREASED DIFFICULTY**



making friends and maintaining relationships

**INCREASED STRESS HORMONES**



which affects the body's ability to fight infection

**DIFFICULTIES ENGAGING**



In education and sustaining employment



## THE STRONGER BRAINS SOLUTION

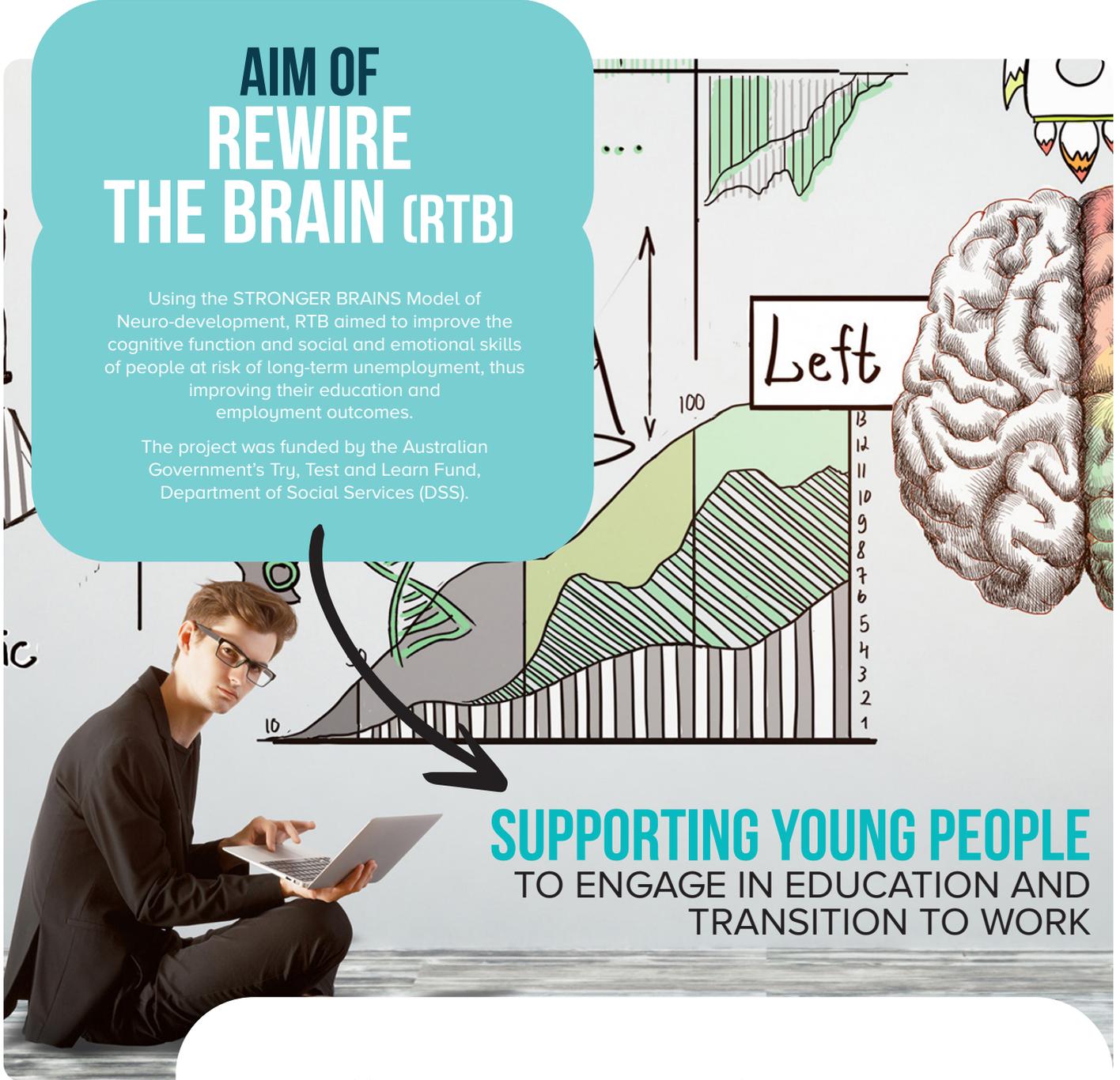
STRONGER BRAINS is a pioneering, Australian not-for-profit, dedicated to breaking the cycle of intergenerational disadvantage. We have seen the transformative effects of neuroplasticity change lives, and we are passionate about giving every person the opportunity to live a productive and happy life. Using scientifically developed brain training techniques, we strengthen the neural pathways to the brain's Executive Function, harnessing self-regulation, logic, understanding, focus, and empathy. We believe that widespread implementation of these innovative techniques would have a significant social and economic impact, reducing pressure on existing government and non-government employment, health, education, justice and social services across Australia.

# REWIRE THE BRAIN PROJECT

## AIM OF REWIRE THE BRAIN (RTB)

Using the STRONGER BRAINS Model of Neuro-development, RTB aimed to improve the cognitive function and social and emotional skills of people at risk of long-term unemployment, thus improving their education and employment outcomes.

The project was funded by the Australian Government's Try, Test and Learn Fund, Department of Social Services (DSS).



## SUPPORTING YOUNG PEOPLE TO ENGAGE IN EDUCATION AND TRANSITION TO WORK

Young people (16-24 years) in Australia, experience high levels of unemployment and have been identified as a group that is at risk of long-term welfare dependency. Most at risk are Aboriginal or Torres Strait Islander young people, migrants, people from low socio-economic backgrounds and young people with disabilities or mental health issues. Economic crises, such as COVID-19, further disproportionately disrupt young people and students getting jobs. With less jobs available and increased competition, they experience even more barriers and challenges transitioning into the workforce. Without support these young people face devastating long-term impacts such as greater mental health problems, long-term financial disadvantage and welfare dependency.

Research has shown that there is a strong relationship between education and future employment, health and wellbeing outcomes. However, we know that young students require support to successfully transition from study to work. Data indicates that 30 percent of young people who transfer directly from student to unemployment payments will continue to receive income support in 20 years. Current student and unemployment services largely focus on reducing external barriers, such as access to vocational (i.e. soft skill development such as teamwork and collaboration) and non-vocational support (i.e. housing, transport or mental health). This means that the intrinsic drivers of a young person's social, emotional and cognitive function remain a barrier to education and employment.



# Target Group

The initial target group was Vocational Education and Training (VET) student's (16-24 years) studying at TAFE's in NSW and QLD. The adaptability of the model enabled it to be integrated into a diverse range of existing employment and education services in NSW and QLD including:

- **Transition To Work (TTW),**
- **Disability Employment Services (DES)**
- **School Leavers Employment Support (SLES)**
- **Job Active**
- **Adult Migrant English Program (AMEP)**
- **Skills for Employment and Education (SEE) and**
- **Tertiary Preparation Course (TPC)**

In consultation with DSS, participant eligibility was extended to include additional Priority Investment Groups, and other vulnerable groups, at risk of long-term unemployment and welfare dependency.



- Young people (16-24 years old)
- Working age carers
- Young parents
- Unemployed older people
- Migrants and refugees
- At risk young people with disabilities
- At risk Indigenous young people

## Service model and theory of change

The STRONGER BRAINS Model of Neuro-development has three elements:

-  Explicit teaching of brain education to increase participants' knowledge about how the brain works and can be strengthened;
-  The development of a Personal Empowerment Plan (PEP) to calm the brain and prepare it for brain training. This includes calming techniques, such as mindfulness and physical activity, personal mentoring and job readiness activities.
-  A comprehensive brain assessment and the development of a Personalised Neuroplasticity Plan (PNP), including access to fun and engaging online brain training, which can also be accessed by participants through an online app.

STRONGER BRAINS can facilitate service delivery or can provide a comprehensive Train the Trainer (TTT) model, which includes professional development training, access to lessons, assistance with brain assessments, regular site visits and ongoing support as required. In the short-term positive changes in brain health will improve participants' executive control, social cognition, focus and attention, processing speed and working memory, thus developing their higher cognitive and social and emotional skills which are needed for the workforce of the future .

In the medium-term this will increase participant's ability to engage in education, increase their job readiness and improve their overall social and emotional wellbeing. In the long-term these changes will support people to successfully transition to and retain employment, thus reducing welfare dependency.

Brain health domain	Skills needed for the future workforce
Executive Control	Comprehension, Decision-making, Problem solving, Logical thinking
Social Cognition	People skills, Communication, Team work, Self-awareness, Taking Initiative
Focus and Attention	Task focused, Prioritising work, Meeting deadlines, Attention to detail
Processing Speed	Listening skills, Learning new information, Interpreting information
Working Memory	Multi-tasking, Retaining information, Remembering instructions

# Our Partners

STRONGER BRAINS partnered with a range of existing education and employment providers to deliver the STRONGER BRAINS Model of Neuro-development.

## Site A

### TAFE NSW

STRONGER BRAINS delivered the model five days a week (1 hour per day) at TAFE NSW Blacktown and Kingswood campuses during Terms 3 and 4, 2019. Delivery was outside scheduled class times of the Cert II, Cert III and TPC course and occurred during lunch breaks. Attendance was optional.

### TAFE QLD

TTT was implemented at TAFE QLD Caboolture, Bracken Ridge, Redcliffe, Southbank and Logan campuses during Terms 3 and 4, 2019. The model was embedded within SEE (Literacy and Numeracy) and AMEP classes. TAFE teachers delivered the model as part of normal scheduled classes, for a minimum of one hour per day, four days per week subject to course timetable. Wherever possible computers were made available during class time.

### Job Centre Australia Limited (JCAL)

TTT was implemented at JCAL Chatswood, NSW. The model was embedded within the SLES and DES. JCAL Facilitators delivered the model four days a week (1 hour per day) with support from Stronger Brains onsite and remotely when needed.

### yourtown

STRONGER BRAINS delivered the model at the TTW program in Mt Druitt NSW. Brain training was provided twice a week (1 hour per day) during participants' lunch break for a period of seven months. Due to the nature of TTW participants and staff were transitory. Towards the end of RTB TTT was introduced as TTW staff expressed their interest in delivering the model.

TAFE NSW

TAFE QLD

JOB CENTRE  
AUSTRALIA  
LIMITED

YOURTOWN

PATHWAYS TO  
RESILIENCE

## Site B

### Pathways to Resilience

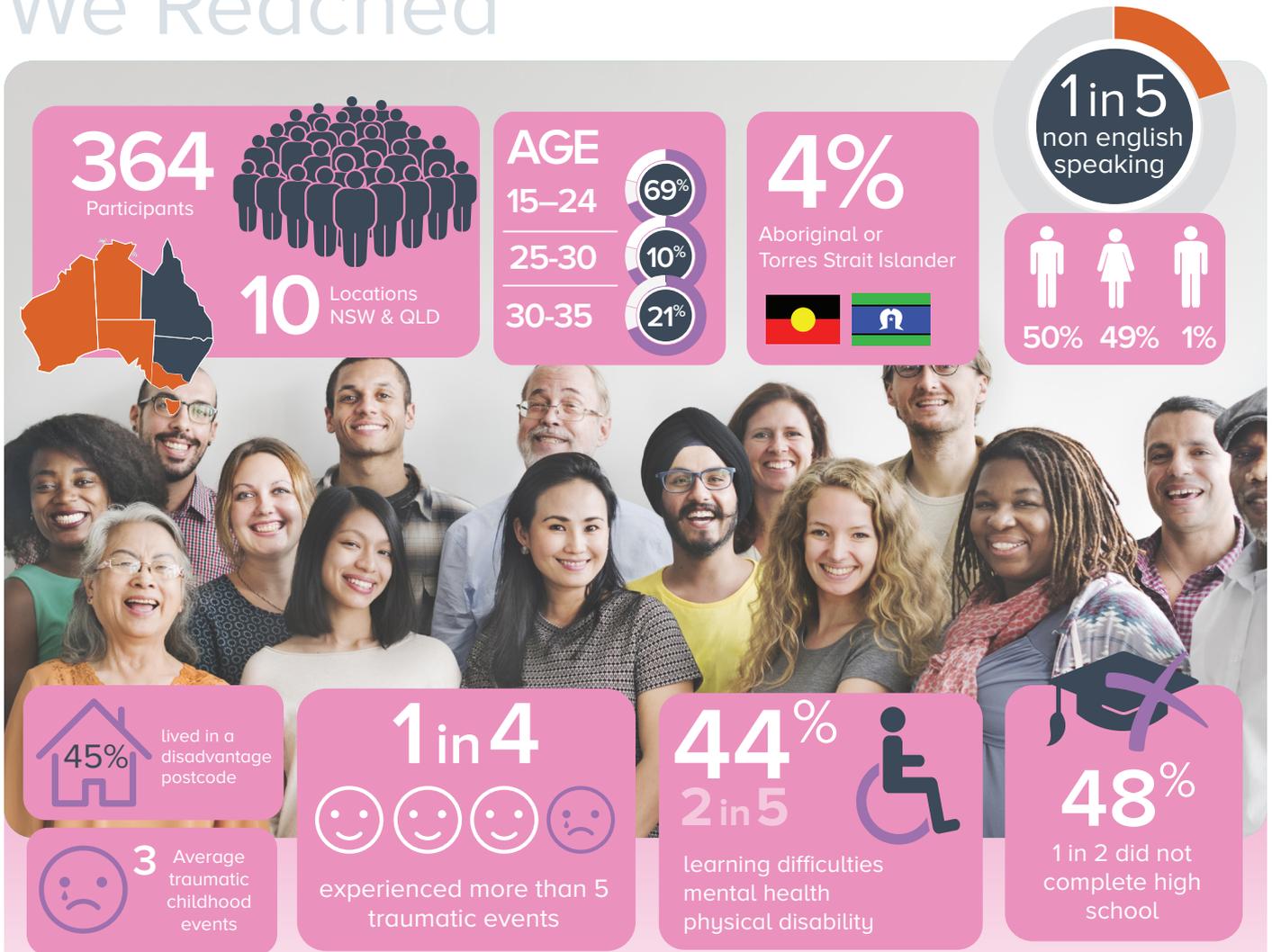
Joint delivery with Pathways to Resilience, to two cohorts of participants not in education, employment or training (NEET). Participants attended the 20 week program during terms 1-2 and 3-4 in 2019, four days a week (3 hours per day) at the TAFE QLD Mt Gravatt campus. Of the 3 hours per day, one hour per day was allocated to the STRONGER BRAINS Model of Neuro-development.

# OUR REACH AND SERVICE DELIVERY

## KEY FINDINGS

- The project reached 364 participants across 10 locations in NSW and QLD. It effectively engaged participants most at risk of long-term employment, specifically unemployed young people, migrants, people from low socio-economic backgrounds and people with disabilities or mental health problems.
- Participants had complex needs, and many had experienced a high number of traumatic childhood events and serious mental health problems. These challenges had prevented them from finishing secondary school or engaging in further education or employment.
- Completion rates were high, and participants were highly satisfied with their experience.

## We Reached



## TO SUPPORT THESE PARTICIPANTS, WE DELIVERED



# Our reach & delivery

## Site A

Participants were high risk with complex needs, such as ongoing mental health issues, drug addiction, history of juvenile justice, domestic violence at home, disabilities, trauma as a refugee, low level of English speaking, low level computer skills and unstable living conditions.



### BRAIN TRAINING

71 hours of brain training on average

# 303 ENROLMENTS

## Site B

NEET Participants who had experienced major adverse life events and toxic stress levels. Almost half had been unemployed for two years prior and were reliant on government income support. They were also dealing with issues such as couch surfing, poor physical health, drugs and alcohol, gaming, incarceration, mental health issues, self-harming and suicidal ideation.



### BRAIN TRAINING

14.9 hours of brain training on average

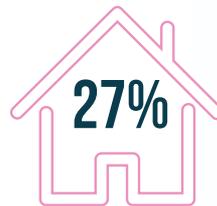
# 61 ENROLMENTS



1 in 2 (48%) lived in a disadvantaged postcode



64% aged 15-24 years



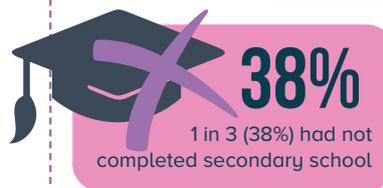
1 in 4 (27%) lived in a disadvantaged postcode



92% aged 15-24 years



**1 IN 4**  
(24%) were from non-English speaking backgrounds



**1 IN 4**  
(24%) were from non-English speaking backgrounds



**73% COMPLETED THE PROGRAM**

*"What I love most about Rewire is knowing that I'm not the only square trying to fit into a round hole and also too is I just think it's a great program. I just think it's so cool. People like the facilitators, all the other clients/participants. It's just so awesome."  
(Participant, 23 years old)*

**74% COMPLETED THE PROGRAM**

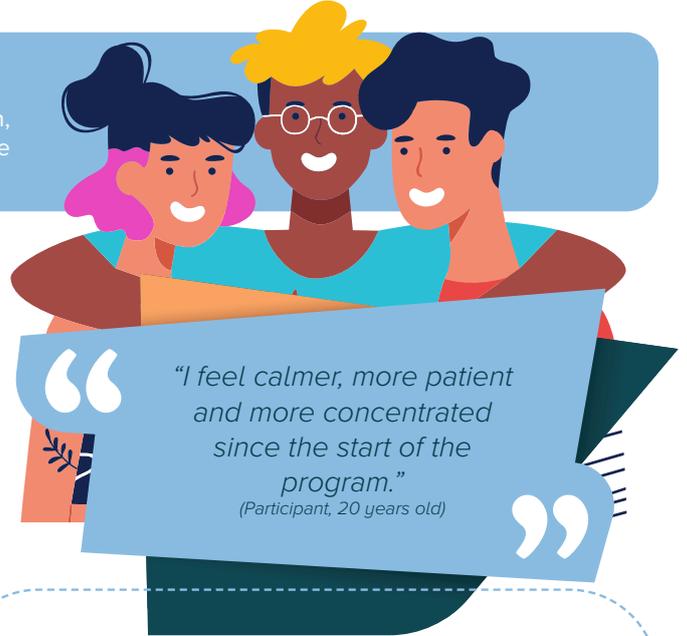
# BRAIN HEALTH & JOB SKILLS

## KEY FINDINGS

- Participants had substantial improvements in their brain health across all domains. This included problem solving, decision making, reasoning, logical thinking, focus and attention, memory and people skills. These are critical higher cognitive and social and emotional job skills required for the future workforce, which are also transferable across all sectors.
- The majority of participants who had experienced a large number of traumatic childhood events had improved brain health across all domains. Brain health improvements were sustained.
- At the end of the program the majority of participants were in the expected or above range for most of the brain domains.

## Participants told us ....

They felt calmer, were better able to think and process information, had improved concentration, focus and memory and felt more capable to learn and more job ready.



“I feel calmer, more patient and more concentrated since the start of the program.”  
*(Participant, 20 years old)*

## Site A

The majority of participants had improvements in their brain health and transferable job skills. These improvements were statistically significant for focus and attention, problem solving and decision making and processing speed.

## Proportion of participants who had brain health improvements

**66%** focus and attention

**66%** problem solving and decision making

**61%** processing speed

**63%** working memory

**44%** people skills

**IMPROVEMENTS**

The majority of participants who had experienced a large number of traumatic childhood events had improved brain health across all domains.

## Brain health improvements were sustained

Proportion of participants in the average or above range at the start and end

**+15%** Focus and attention: 62% improved to 77%

**+13%** Problem solving & decision making: 57% improved to 70%

**+13%** Working memory: 61% improved to 74%

**+12%** Processing speed: 36% improved to 48%

**+6%** People skills: 4% improved to 10%

**IMPROVEMENTS**

Proportion of participants who had improved brain health and who had experienced traumatic childhood events

% with improved...	All participants	No traumatic childhood events	1-4 traumatic childhood events	5 or more traumatic childhood events
Focus and attention	66%	65%	68%	62%
Problem solving and decision making	66%	56%	72%	67%
Processing speed	61%	44%	67%	69%
Working memory	63%	63%	60%	67%
People skills	44%	40%	44%	49%

## Site B

Participants demonstrated brain health improvements across most domains. The improvements were statistically significant for visual attention and working memory, visual processing speed and reaction time and auditory processing speed.

### Proportion of participants who had brain health improvements

#### FOCUS AND ATTENTION

**74%** visual attention and working memory  
**53%** visual-spatial attention and working memory

#### PROBLEM SOLVING AND DECISION MAKING

**51%** executive control

#### PROCESSING SPEED

**67%** visual processing and reaction time  
**58%** auditory processing speed  
**51%** visual acuity, processing & reaction time

#### WORKING MEMORY

**52%** visual-spatial short-term memory  
**18%** auditory working memory

**IMPROVEMENTS**



### Brain health improvements were sustained

Proportion of participants in the average or above range at the start and end

#### FOCUS AND ATTENTION

**+11%** Visual attention and working memory: 63% improved to 74%  
**+9%** Visual-spatial attention and working memory: 67% improved to 76%

#### PROBLEM SOLVING AND DECISION MAKING

**+12%** Executive control: 74% improved to 86%

#### PROCESSING SPEED

**+13%** Visual processing and reaction time: 77% improved to 90%  
**+8%** Auditory processing speed: 61% improved to 69%  
**+6%** Visual acuity, processing and reaction time: 79% improved to 85%

#### WORKING MEMORY

**+4%** Auditory working memory: 91% improved to 95%  
**+9%** Visual-spatial short-term memory: 76% improved to 85%

**IMPROVEMENTS**

“I found it useful to know the strengths and weaknesses of my brain, the program was fun and entertaining and helped me to relax.”

(Participant, 25 years old)



Electroencephalography (EEG) assessments recorded participants' brain waves across five cognitive tasks: selective attention, response inhibition, conflict processing, working memory and emotion processing. On average the EEG brain maps showed significant changes in response inhibition, conflict processing and working memory, suggesting improved cognitive flexibility, which is essential for problem solving, decision making, reasoning and logical thinking. Selective attention and emotion processing also showed notable neuroplastic change.

SELECTIVE ATTENTION | RESPONSE INHIBITION | CONFLICT PROCESSING | WORKING MEMORY | EMOTION PROCESSING

## GETTING YOUNG PEOPLE JOB READY

Tom, a 20 year old unemployed young person, wanted to get a job in the social sector. Although he had finished Year 12, learning difficulties, mental health problems and traumatic childhood events had impacted his motivation to engage in education and employment. Tom enrolled in RTB through his involvement in a disability employment service. He wanted to learn coping strategies and get help to prepare for the workforce.

Tom was really engaged and motivated, completing 18 hours of brain training on site and at home. The facilitators noticed that over time he became faster with the training and started to show more social awareness by "looking facilitators straight in the eye and saying hello before jumping in with a question."

Tom was highly satisfied with RTB and demonstrated significant improvements in brain health and his job skills. Brain assessments showed that Tom was above average in problem-solving, decision making and working memory and had also improved his processing speed. He told us that he felt more patient and had developed thinking, coping and problem-solving strategies. Tom also felt less depressed, anxious and stressed. As a result of these changes Tom was more confident to manage challenges that he might encounter in his daily life and as a result was more job ready. Three months after RTB Tom was engaged in work experience, taking the first steps on the path to employment.

Tom demonstrated significant improvements in brain health and his job skills'



Changes to Lucy's brain were significant, with brain improvements across all areas.



## BRAIN TRANSFORMATION AND HEALING

Lucy was experiencing a vulnerable and traumatic period in her life. After surviving domestic violence, she was unemployed and residing at a women's refuge with her child. Lucy heard about RTB through TAFE, where she had enrolled in an Adult Migrant English Program to improve her English. At the start of RTB Lucy was distressed and told the facilitators that she was very worried and not sleeping well. Her mental health was suffering, and she lacked confidence and self-esteem. She hoped that involvement in RTB would help her to feel more settled after a particularly challenging time.

After six hours of brain training, the facilitators witnessed a transformation in Lucy who was visibly happy and smiling. She was using a range of coping strategies, sleeping 7-8 hours a night, exercising more, listening to music and drawing on her social support network. Changes to Lucy's brain were significant, with brain improvements across all areas. Remarkably, at the end of RTB she showed above average focus and attention, problem-solving and decision making, processing speed and working memory. Lucy expressed her immense gratitude to the STRONGER BRAINS team for helping her get through a tough time. Three months after RTB she was motivated to remain engaged at TAFE, where she hoped she would improve her English and gain further skills needed to get a job.

# SOCIAL AND EMOTIONAL WELLBEING

## KEY FINDINGS

- Participants had improved social and emotional wellbeing and resilience.
- Overall participants' depression decreased significantly, and there were also notable improvements in anxiety and stress. The vast majority of participants who were experiencing high levels of depression, anxiety and stress at the start reported improvements in their mental health at the end.
- Participants also felt significantly more equipped to manage daily life problems or challenges that they might encounter. Again, the majority of participants with the lowest baseline at the start reported improvements in their resilience.

**OVERALL**

**40%**

**OF PARTICIPANTS HAD**

**DECREASED DEPRESSION**

*“From the outset of the program it was clear that some participants did not have strong social networks, some had no friends at all. It has been a very positive (and unforeseen) outcome that the program has brought young people together in a safe place where they can form strong social ties.”*

*(STRONGER BRAINS facilitator)*

## Participants told us...

They had developed coping strategies to manage their social and emotional wellbeing. Mindfulness strategies, deep breathing and meditation had helped them to relax and feel calmer in stressful situations. They noticed improvements in their mood and energy levels and were making more positive lifestyle choices (i.e. diet, smoking and exercise). Participants also felt more confident speaking in group settings and making friends. These changes had a positive impact on participants' self-confidence, independence and resilience.

Site A

**Participants' depression decreased significantly, and anxiety and stress also improved. The vast majority of participants who were experiencing high levels of depression, anxiety and stress at the start reported improvements in their mental wellbeing.**

**ALL PARTICIPANTS**

**33%**  
decreased depression

**30%**  
improved anxiety

**23%**  
Reduction in stress

Participants with severe or extremely severe mental wellbeing at the start

**86%**  
decreased depression

**75%**  
improved anxiety

**78%**  
Reduction in stress

Participants had statistically significant improvements in their resilience.

**36%**

All participants felt more equipped to manage daily life problems or challenges

**78%**

Participants with low resilience at the start felt more equipped to manage daily life problems or challenges

*“But it's focused more on my mental wellbeing which has been a help for everything- getting jobs, getting ready for jobs...I've started implementing a healthier lifestyle...I also eat a lot healthier. Exercise and proper diet have improved so much.”*

*(Participant, 18 years)*

*“When I first came here, I was in and out of hospital for my mental health and I was not in a good place whatsoever and then now, I am applying for jobs. I'm ready to move out of home...I would not be the same person I am now if I hadn't of done the program.”*

*(Participant, 21 years)*

Site B

**On average the majority of participants had low mental wellbeing at the start of RTB. This improved significantly at the end, with most participants in the normal mental wellbeing range.**

**74%**  
Had Improved mental wellbeing

	START OF RTB		END OF RTB	
normal	27%	→	58%	normal
possible depression	15%	→	16%	possible depression
probable depression	58%	→	26%	probable depression

# Social & emotional wellbeing

## OVERCOMING CHALLENGES TO BUILD SELF-CONFIDENCE AND INDEPENDENCE

Tony was an unemployed young person who wanted to gain work experience and increase his independence. Autism Spectrum Disorder, anxiety and learning difficulties had impacted his self-confidence and engagement in education and employment. Tony was accessing School Leavers Employment Support to build his competencies and hoped that RTB would help with his anxiety.

Tony faced a number of challenges at the start. He found the activities overwhelming and had to remove himself from the room to calm down. Due to his anxiety he needed to be in a quiet space by himself to complete the brain training. Tony was also struggling with a recent friendship breakdown and had occasional thoughts of taking his life. A Safety Plan was developed, which outlined personal coping strategies, social support and professional services that Tony could access if he needed help.

Overcoming these challenges Tony started to really engage, completing 16 hours of brain training. Facilitators observed that he appeared focused and even started to stay with the group during the sessions. Tony particularly enjoyed the PEP activities, where he loved sharing with and listening to the other participants.

By the end of RTB Tony was thriving. Brain assessments showed huge improvements in focus and attention, problem-solving and decision making, processing speed and working memory. He was better able to manage emotions, had more job confidence, was more job ready and his anxiety had decreased into a normal range. Three months after RTB Tony had started studying at TAFE.




Three months after RBT, STRONGER BRAINS continued to work with Sally, liaising with her TAFE learning support teacher to ensure that Sally continued with her education.

## PERSONALISED SUPPORT DEVELOPS TRUST AND ENGAGEMENT

Sally was one of the youngest participants to enrol in RTB at the age of 15. Sally was experiencing severe anxiety which was impacting her life and engagement in education. She struggled to get out of the house and had not been to school for a year. At the start Sally had panic attacks and could not get out of the car. The facilitators would sit in the car and teach her self-regulation and breathing strategies, for example throwing a ball, mindfulness or just having a conversation. Over the weeks Sally gained confidence and started to enter through the back entry, however she needed to engage in the activities in a separate space. Slowly the facilitators started to introduce Sally to the other participants. Amazingly after building trust and feeling comfortable in the environment Sally overcome her anxiety and started to do the brain training in the same room as the other participants, completing over 50 hours. Facilitators continued to provide a personalised program based on Sally's interests and goals, such as facilitating activities based on history, maths and English, and even completing a mock NAPLAN test. They also accompanied Sally on a bus to provide her with strategies to increase her confidence to travel to school independently.

The changes in Sally were extraordinary. Her brain assessments showed significant improvements across all areas and she was above average for her visual attention and acuity, working memory, visual and auditory processing, reaction time and short-term memory. She was comfortable interacting and laughing with people and voicing her opinions. Sally was also more motivated to learn which led her to enrol in TAFE. Three months after RBT, STRONGER BRAINS continued to work with Sally, liaising with her TAFE learning support teacher to ensure that Sally continued with her education.

# LEARNING AND EARNING OUTCOMES

## KEY FINDINGS

- Participants were significantly more motivated, confident, equipped and ready to find a job.
- These positive changes had a substantial impact on participants' learning and earning outcomes.
- Three months after the project the vast majority (90%) of participants were engaged in education or had secured/retained a job.

**AFTER THREE MONTHS**

**90%** EDUCATION OR EMPLOYMENT  
ENGAGED IN EITHER

**10%** WERE NOT STUDYING OR EMPLOYED

"I am better at decision making and visual skills. I'm also very motivated to continue with study at university."  
(Participant, 30 years old)

## Participants told us...

They felt more motivated and focused to start or continue studying. They were also considering possible career pathways and setting goals for the future.

### Site A

Participants were significantly more motivated, confident and ready to find a job. The majority of participants with the lowest motivation, job confidence and job readiness at the start reported improvements across all areas.

**ALL PARTICIPANTS**

- 41% felt more motivated to find or maintain a job
- 38% felt more confident to get a job
- 44% were more job ready

Participants with low motivation, job confidence and job readiness at the start

- 81% felt more motivated to find or maintain a job
- 88% felt more confident to get a job
- 79% were more job ready

<b>AT THE END</b> 82% were engaged in education or employment 18% were not studying or employed	<b>AFTER 3 MONTHS</b> 90% were engaged in education or employment 10% were not studying or employed
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### Site B

Participants had statistically significant improvements in employability skills and confidence.

**AFTER 3 MONTHS**

- 92% of participants were employed or engaged in education
- 8% were not studying or employed

Learning and earning outcomes improved and were sustained. At the end 8 in 10 participants were engaged in learning or earning activities. Three months after RTB, this increased to 9 in 10 participants.

"More focus placed on study, more motivated, can prioritise better and aiming to further education."  
(Participant, 21 years old)

# Learning & earning outcomes



## SETTING GOALS FOR THE FUTURE

At 31 years old Rebecca was unemployed when she enrolled at TAFE. After completing school, she had worked in jobs without direction, not knowing what she wanted to do as a career. Rebecca had experienced a number of traumatic childhood events and had received professional support for anxiety and depression. She enrolled in RTB as she was interested in the online brain exercises.

Overall Rebecca was highly satisfied with her experience. She found the self-regulation strategies extremely useful and said they helped her to feel less stressed about TAFE exams. Through the PEP activities Rebecca identified that she really wanted to commence a nursing degree at University. Facilitators worked closely with Rebecca to set goals to achieve this dream. Mid-way through the program Rebecca started a casual job to support herself while she continued to focus on getting into University.

Rebecca was highly engaged in the brain training, completing 15 hours at TAFE and at home.

At the end, Rebecca's brain assessments showed sizable improvements in focus and attention, problem-solving and decision making, processing speed and working memory. These positive changes contributed to Rebecca making better decisions and feeling more confident for the future. Three months after RTB, STRONGER BRAINS was thrilled to hear that Rebecca was focused on furthering her education and had achieved her goal- studying nursing full-time at University.

## OVERCOMING BARRIERS TO EDUCATION AND EMPLOYMENT

Lauren was a 22 year old TAFE student who was living with her family. In the past she had experienced a high number of traumatic events in her childhood and she was currently facing severe mental health problems such as Autism, Obsessive Compulsive Disorder, anxiety and depression, as well as high levels of stress. Her previous trauma and mental health were an ongoing barrier to her engagement in TAFE and as a result she had low motivation to find a job.

At the start of RTB Lauren's social anxiety was a barrier which prevented her from engaging in the sessions and interacting with the facilitators and other students. Her anxiety presented in extreme self-doubt and she needed encouragement to do anything in class, including eating food. Lauren provided feedback that she found the brain training frustrating, however she was highly engaged in the PEP and found the meditation really useful. As time progressed the facilitators witnessed Lauren start to overcome her low self-esteem and confidence. She started to shake hands with the facilitators and other participants when entering every session. By the end she was making eye-contact, introducing herself to the other students and asking questions about their studies and interests.

After 7 hours of brain training Lauren had improvements in her attention and focus, problem-solving and decision making and working memory. Incredibly Lauren's depression, anxiety and stress improved considerably. She had a renewed focus on her study and felt more motivated to find a job. Lauren told us that she had found RTB to be very helpful, 'The program has started to improve my concentration, mood, motivation. I feel more refreshed when I wake up in the morning as well.' As a result of these remarkable changes Lauren started a casual job and after three months was also studying full-time at University.

*"[Before RTB program] I was completely wasting my life. I was spending up to twelve hours a day playing computer games. Not applying for jobs and I had no motivation to go into further study or even to do a TAFE course. I wouldn't help myself...I've found that the program and the people here have really helped me and I actually want to go on and do further study and get a job. Stop being a burden to those around me."  
(Participant, 20 years old)*

# SOCIAL VALUE

## KEY FINDINGS

- The results indicate that RTB produces a substantial social impact (benefits minus the cost), in terms of Return on Investment. The overall net social benefit was \$1,644,743, representing a benefit cost ratio of 1.6.
- This validation provides evidence that using STRONGER BRAINS Model of Neuro-development with vulnerable people at risk of long-term unemployment and welfare dependency delivers considerable social value. In particular, the net social benefits demonstrate that the model is efficient, cost effective and widely applicable to a range of Priority Investment Groups. Further, the model can be easily scalable and sustainable, when it is incorporated into existing education and employment services.

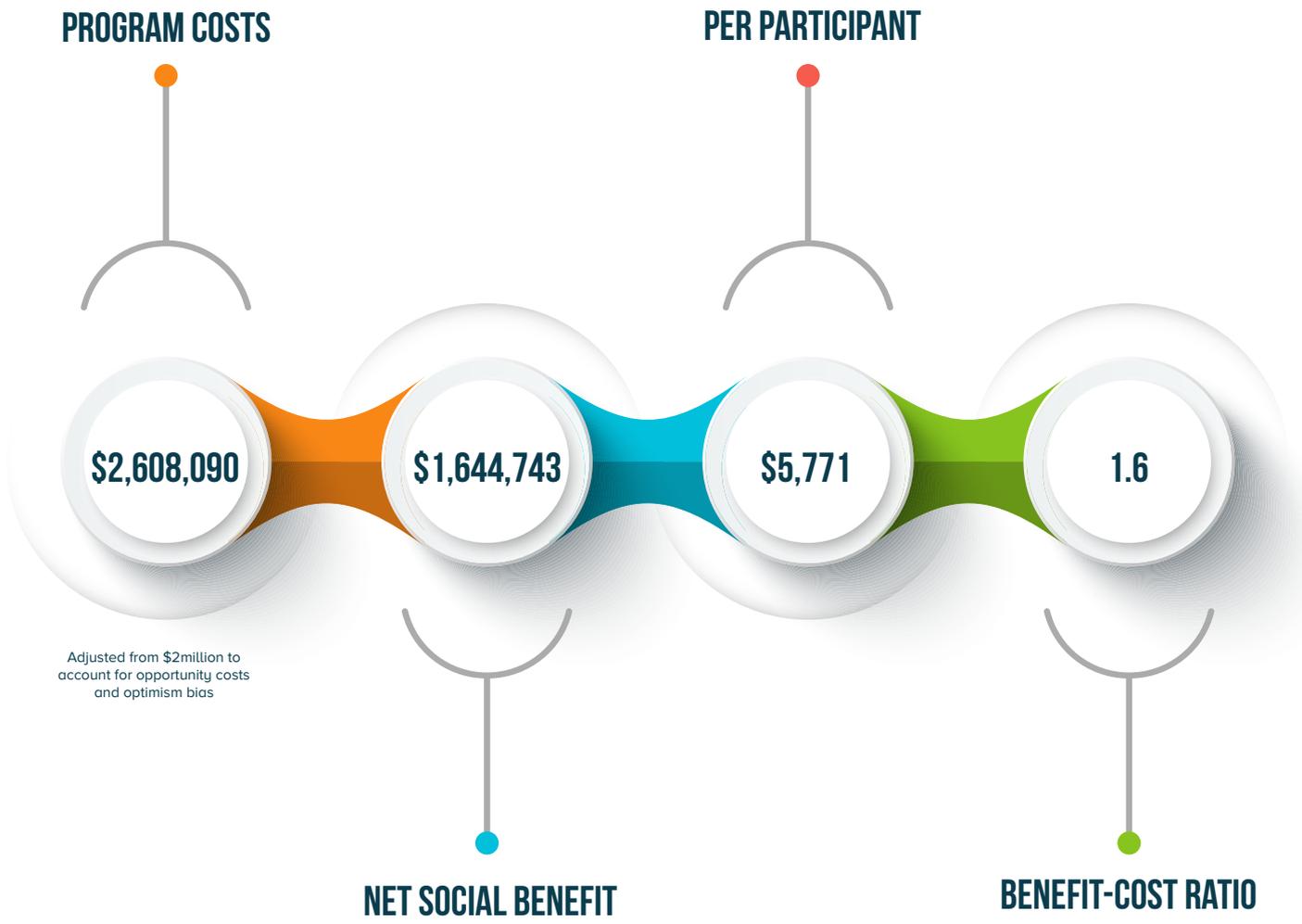
The Australian Social Value Bank Calculator was used to certify the social impact of RTB. Social value was calculated using the following two measures:

### IMPROVED OVERALL HEALTH

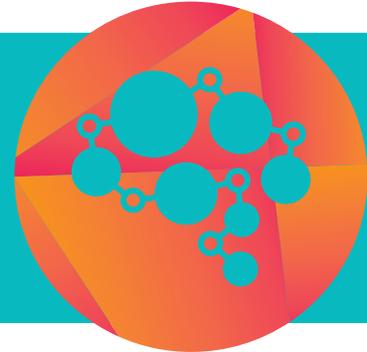
This outcome shows the social impact of improving the health of participants, measured by improvements in brain health.

### RELIEF FROM DEPRESSION/ANXIETY.

This outcome shows the social impact of improving depression or anxiety of participants, measured by the Depression Anxiety Stress Scales (Site A) or the Warwick-Edinburgh Mental Well-being Scale (Site B).



RTB was a large-scale trial across 10 locations in NSW and QLD. It involved a range of education and employment service providers and utilised different delivery models to determine the most effective and scalable model. The lessons from the project have important implications for future practice and service delivery.



1.

**The STRONGER BRAINS Model of Neuro-development is relevant, applicable and effective in a range of education, employment and disability services.**

There is evidence that the model can significantly improve learning and earning outcomes for a range of Priority Investment Groups, and other vulnerable people, who are at risk of long-term unemployment. This includes young people (16-24 years), Aboriginal and Torres Strait Islander young people, unemployed older people, migrants and refugees, people from low socio-economic backgrounds and people with disabilities or mental health problems.

2.

**Train the Trainer (TTT) is cost effective, efficient and scalable.**

RTB showed that the STRONGER BRAINS Model of Neuro-development can be delivered using a range of service delivery models however, TTT offers a number of advantages:

- TTT was shown to be the most cost effective, efficient and scalable service model.
- Builds the capacity of local facilitators who have existing relationships with participants, ensuring they feel safe and secure, which is an essential prerequisite for the brain training and learning.
- Ensures that some of the most vulnerable young people, students and job seekers receive effective, integrated and streamlined services.
- Supports organisations to sustainably embed the model into existing programs and courses.
- Supports organisations to deliver innovative, fun and engaging services, which complement and strengthen their existing programs or courses.

3.

**Embedding STRONGER BRAINS into existing programs is critical.**

Embedding the model into existing programs and services is critical to increase participant engagement and ensure that service delivery is sustainable. This should involve:

- Ongoing funding and organisational commitment to embed the STRONGER BRAINS Model of Neuro-development as a core component of existing program. For example, the model could be embedded as a core Job Readiness Module within employment services.
- Provision of a dedicated safe space for participants to complete the model during course or program time.
- Providing every participant with access to a computer or a device for every session, to ensure there is equity across all students and job seekers. This is also important to reduce peer pressure and stigma.
- Organisational support for local management, facilitators and teachers. This includes ongoing professional development opportunities and formal recognition of staff responsibilities, time and resources required for service delivery.
- Supporting participants to engage with STRONGER BRAINS for as long as they need, to ensure that every participant reaches their potential. STRONGER BRAINS recommends at least 30 hours of brain training for each participant, however each brain is different and training times vary according to baseline brain health. We also know that traumatised brains can take longer to become calm and receptive to brain training. Therefore, mechanisms and strategies are needed for participants who are involved in shorter courses or programs to continue with STRONGER BRAINS for longer periods of time if needed.

4.

**STRONGER BRAINS service delivery is flexible and can be delivered face to face or remotely**

This is important given the current need to invest in and expand remote service delivery and learning, to ensure all people, particularly the most vulnerable, have timely access to the services they need. There is also the potential to digitise the assessments and utilise virtual mentors to support participants who complete the program online.

# IMPLICATIONS FOR POLICY

This report evidences the successful impact the STRONGER BRAINS Model of Neuro-development had on improving the brain health, transferable job skills, social and emotional wellbeing, resilience and job readiness of disadvantaged people who were at risk of long-term unemployment and welfare dependency. These results are significant given the complex needs of participants, many who had experienced childhood trauma and serious mental health problems. Aligned with the theory of change, these positive changes had a substantial impact on participants' learning and earning outcomes, delivering considerable social value and cost saving to the government. To build upon this success, STRONGER BRAINS recommends the following:



1.

### Invest in the STRONGER BRAINS to further reach Priority Investment Groups.

Government funding should be continued and increased to ensure that the STRONGER BRAINS program further reaches key Priority Investment Groups and other vulnerable people at risk of long-term unemployment and welfare dependency. The use of TTT would provide a cost effective and efficient service model, to quickly and sustainably upscale the model across a broad range of social services. Investing in the STRONGER BRAINS program will provide a substantial social impact and is a small cost compared to the enormous social and economic cost of long-term disadvantage, unemployment, poor mental health and welfare dependency.

2.

### Integrate STRONGER BRAINS into all existing employment programs to increase job readiness.

STRONGER BRAINS should be integrated into all existing employment programs, such as TTW, SEE, Jobactive, SLES, DES, Jobseeker and other government wage subsidy schemes, as a core Job Readiness Module. A Job Readiness Module based on the STRONGER BRAINS Model of Neuro-development, would address a significant service gap by targeting the intrinsic drivers of a person's social, emotional and cognitive function, which research shows is critical for the future workforce. Brain training in these areas would ensure that job seekers are ready to transition to a changing workforce and have the capacity and skills for ongoing job success. This would not only strengthen the service system but also decrease service and wage subsidy demand, thus providing the government with significant cost savings.

3.

### Redirect mental health funding into TAFE to make sure young people are ready to learn.

There is the need to recognise the large number of young people with long-standing mental health problems who are accessing TAFE. These young people have complex needs and, in many cases, have given up on existing mental health services. TAFE teachers are bridging the service gap and providing critical mental health and lifeline support to some of the most disengaged and disadvantaged young people in Australia. Mental health funding should be diverted or redirected into TAFE to support teachers to address young people's mental health needs and trauma, which is critical to ensure that young people are ready to learn. Funding should also be provided to enable all TAFEs to widely embed evidence-based neuroplasticity programs within courses as a key initiative to improve mental health and learning outcomes. .

4.

### Invest in early intervention and ensure that no disadvantaged child or young person falls through the cracks

Research shows that early childhood is critical for brain development and that trauma, abuse or neglect can result in detrimental changes to brain function. These findings highlight that it is essential that early intervention programs based on the principles of neuroplasticity should be widely available, so they reach disadvantaged children and young people as early as possible. For example, STRONGER BRAINS could be embedded in universal services, primary and secondary schools and healthcare settings. STRONGER BRAINS should also be embedded within existing programs which reach 'high risk' young people, such as juvenile justice, Out-of-Home care, Aboriginal Community Controlled Organisations, and youth homelessness services.

Using STRONGER BRAINS as both an early intervention and targeted program will provide children and young people who have experienced trauma with an opportunity to heal their brain and live happy and productive lives. It will also ensure that disadvantaged children and young people develop their higher cognitive, social, emotional and technical skills, which will be required for the workforce of the future

**5.**

#### **Provide social services staff with neuroscience training and professional development.**

Widespread training and professional development should be provided to staff who support vulnerable children and young people. This is important to increase sector knowledge about neuroplasticity principles and the outcomes for vulnerable children and young people, as well as demonstrate the potential benefits of using neuroplasticity programs across government and non-government social services

#### **Investment in longitudinal research.**

The time constraints of RTB resulted in many participants not being trained to effect. This means that many participants, especially those who had experienced trauma, needed longer to calm their brain to be receptive to the brain training. This calls for investment in longitudinal research to allow for longer service delivery and brain training. Measuring outcomes over a longer period would also further add to the evidence-base for the STRONGER BRAINS Model of Neuro-development. Future research should also include data linkage with government agencies to track long-term employment and welfare outcomes.

**6.****7.**

#### **Investment in measurable impact**

This study shows that effective interventions produce evidence of measurable impact. For many existing programs and human services, there is little or no evidence that they are having a positive impact. This is especially true in relation to disadvantaged Australians where outcomes have not improved, regardless of increased government funding. It is time for a radical change in funding policy. It is time to invest in new interventions that show a measurable and positive impact on the lives of vulnerable Australians.

**8.**

#### **Investment in further product and professional development**

There are many newly unemployed and disadvantaged Australians who are not engaged in education or employment services but who would benefit from the Stronger Brains interventions if they could access them from home. Since completion of the study, as a result of limitations imposed by COVID-19, Stronger Brains have adapted their program to be run 100% online with huge success, utilising virtual mentors to support young people who complete the program at home. Investment in further product development and the professional development of virtual mentors, would provide access to unemployed and disadvantaged Australians during the pandemic, improving mental health while developing job skills for the future workforce. At the same time, this would upskill virtual mentors and provide employment opportunities for them to work from home. An Uber-like system could be developed where mentors can work as little or as much as they choose and participants can quickly access a virtual mentor at any time of the day or night.