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Foreword

LOREN BRIDGE, EXECUTIVE OFFICER

Research has long been a strategic priority for the Alliance. This means more than simply providing access to relevant, useful research, or delivering analyses of the latest academic studies into girls' learning and wellbeing. It is about engaging and exposing audiences to new ideas, thought-leaders, and data that they might otherwise not encounter.

At its most fundamental level, research seeks to advance our knowledge and provide us with the facts we need to verify what we hear and read. Whether it is anecdotal evidence, out-of-date theories, fake news, misinformation or disinformation, sometimes it's difficult to fact check everything that hits our screens. Robust research — whether it corrects earlier misunderstandings, disproves anecdotal evidence, or reveals new facts and learnings — can expose underlying trends, expand our understanding and provide us with insights that can inform our decisions, improve our practice and even drive social and economic outcomes for girls and women.

This edition of *In Alliance* shines a spotlight on some of the educators and academics who are contributing to the body of research undertaken in girls' schools. From conducting classroom-based action research projects and developing wellbeing programs for girls, to analysing workplace data and social trends, their research is addressing the challenges of today's teaching and learning landscape — driving meaningful progress for the benefit of the whole community and, importantly, making a difference for girls and women.

Our contributors include Kirsten Taylor from Otago Girls' High School — the inaugural recipient of the Alliance Fellowship whose Whaiora Pilot Project investigated the impact of culturally appropriate interventions for girls experiencing psychological distress; Ann Brownlie from St Ursula's College, Toowoomba and Janelle O'Neill from Mt St Michael's College in Brisbane who are respectively the 2020 and 2021 winners of the Roslyn Otzen Award for Exceptional Teaching and have written about their awarded projects; and Fellows from the Global Action Research Collaborative (GARC) pilot program for 2020–2021 — Karen Lewis from All Hallows' School in Brisbane, Margaret Adeane from Samuel Marsden Collegiate School in Wellington, New Zealand, and Leanne Horwitz from St Stithians College in South Africa. In addition to sharing their project findings on the GARC research theme, 'Feedback strategies to help girls move forward, thrive and grow', the Fellows have also written about the challenges of conducting action research during the pandemic, and the benefits of training and networking with like-minded and supportive colleagues from girls' schools around the globe. Five Fellows from Alliance member schools are currently taking part in the 2021–2022 program and the third cohort will commence training in January 2022.

Also sharing their insights in this edition are keynote speakers from our 2021 Summit on Girls' Education including American clinical psychologist and author Dr Lisa Damour who specialises in stress and anxiety in teenage girls; American psychologist Dr Jean Twenge whose research focuses on generational differences, including work values, life goals, and speed of development; Dr Ron Ritchhart, author, researcher and speaker; Madonna King, author and journalist; and Libby Lyons, former director of the Australian Government's Workplace Gender Equality Agency. Libby's discussion of data collected from Australia's mandatory gender equality reporting scheme reveals the need for systemic and cultural change to ensure that women are given the same opportunities in life as men.

Staying on the theme of gender differences our 2021 Research Grant recipients, Andrew Martin and Rebecca Collie, discuss their research project on academic buoyancy. One of the most consistent findings in research studies on academic buoyancy is a clear gender difference with girls reporting significantly lower levels of academic buoyancy than boys.

I hope you enjoy this edition of *In Alliance* and I thank all our contributors for sharing their practical and theoretical research outcomes, as well as allowing us to benefit from their considerable knowledge and timely insights. This coming together and sharing enables us, even during these challenging times, to continue our professional learning, to reflect on our own practice, to enhance our wellbeing through the generosity and collegiality of our network, and to encourage further research that will benefit the girls, educators and professional staff in our school communities.

Contents

Helping girls grow: A social, emotional, and academic development framework and program

DR NICOLE ARCHARD, PRINCIPAL, LORETO COLLEGE MARRYATVILLE, SOUTH AUSTRALIA

We are proud that in 2021, Loreto College Marryatville was recognised as one of eight schools in Australia, across all three education sectors, to be awarded Best Student Wellbeing Program (Australian Education Awards). This award acknowledged our specially developed Social, Emotional, and Academic Development (SEAD) Framework and SEAD Program.

Why we need specific programs for girls

As a Loreto school, our mission is firmly focused on developing girls and young women to be strong and confident leaders in society, who have the capacity to make a difference to the world through a moral and ethical framework. However, we also recognise that society is not equitable for women and while girls achieve higher academic outcomes in comparison to boys, they suffer from cultural and social underachievement in relation to certain occupations, leadership positions, and issues such as equal pay.

Because boys and girls have different social, emotional, and academic needs, as well as experience different life outcomes post school, it was important to develop a wellbeing program that was tailored to meet the specific needs of girls. As a wellbeing program that was designed specifically for girls and catering for girls from Early Learning to Year 12 did not exist, we were required to develop our own. The SEAD Framework and SEAD Program at Loreto College acknowledges the important integration between the social, emotional, and academic development of girls. The integration of social and emotional skill development in conjunction with learning outcomes ensures students develop holistically as resilient and confident girls and young women. This targeted and sequential framework and program acknowledges the phases of girls' transition from childhood to adolescence to adulthood, and the challenges and celebrations that accompany each stage of development. As a result, girls are prepared not only for school success but also success in their post school lives.

The SEAD Framework and SEAD Program are unique as they represent innovation in education through design and purpose and are firmly grounded in best practice for achieving optimal outcomes for girls. The SEAD Framework and SEAD Program are not only comprehensive in providing a holistic approach but are also demonstrating effectiveness in improving the wellbeing outcomes of girls at Loreto.

The purposeful education of girls

At Loreto College we purposefully educate girls to help shape their self-concept, self-efficacy, and self-confidence so that they develop the knowledge and skills required to reject and overcome the gender stereotypes that attempt to define them. Societal gender imbalances that we see represented in different professions and life outcomes (such as equal pay and leadership acquisition) are more likely to be influenced from school age if social and cultural influences that exist outside of school are replicated within it. Our job as educators of girls is to ensure that girls are equipped with the knowledge and skills required to overcome these challenges, and thus to actively challenge these norms and achieve equitable life outcomes in comparison to boys.

It was important to develop a wellbeing program that was tailored to meet the specific needs of girls.

Therefore, the aim of the SEAD Framework and SEAD Program at Loreto College is to provide an evidence-based structure (as well as related activities) that acknowledges the developmental stages of girls and young women in order to provide a holistic approach to the growth of knowledge and skills required for life success. In particular, the SEAD Framework and SEAD Program acknowledge that the development of a positive self-concept that is not defined by gender stereotypes, as well as the development of self-efficacy, are vital for ensuring girls and women achieve positive life outcomes both during their school and post school lives. At Loreto we are aware of the adage 'girls can't be what they can't see' but we also acknowledge that 'girls can't be what they don't believe'. Therefore, an understanding of self as leader and in particular self as confident and resilient are vital concepts addressed through the SEAD Program at Loreto.

The integration of social-emotional skill development in conjunction with academic learning outcomes ensures that all students develop holistically as resilient and confident girls and young women. Thus, the SEAD Program delivers targeted and specific outcomes that address the needs of girls as they develop and grow, making it unique. As girls move from childhood, through adolescence, to become young women, their social, emotional, and academic needs vary, both on a developmental level as well as in comparison to boys. Between ages eight and 14, girls' confidence levels drop by thirty per cent and during this time girls are more likely than boys to describe themselves as stressed, anxious, shy, emotional, worried, depressed, and ugly, while boys are more likely to say they are confident, strong, adventurous, and fearless (Ypulse, 2018).

The SEAD Framework provides a holistic structure for all areas of the College and while the SEAD Program is taught explicitly via two structured timetabled lessons each week, it is also embedded in all curriculum and co-curricular areas. The SEAD Program covers concepts such as identity and personal values, leadership and the development of voice, emotions, friendships, and relationships, as well as a focus on growth mindset, strategies for achieving academic success, and other important topics such as online engagement, post-school readiness, and future pathways. The SEAD Program is also complemented by other specifically designed curriculum programs such as the 'Year 6 Enterprise Garden' and 'Year 9 Futures Project'. These provide skills in entrepreneurialism and further develop an understanding of environmental and social justice issues while building girls' capacity to work in teams, respond to feedback, and think creatively and critically through a design-thinking framework. In addition, the SEAD Program encompasses the Reception to Year 12 camps and outdoor education programs which are designed to build girls' confidence, resilience, and leadership capacity.

A key component of the SEAD Program is that it is designed for students, parents, and teachers. Each group can access carefully selected and evidence-based resources to assist in all areas of girls' social, emotional, and academic development through the online platform 'Loreto Connect'. A parent seminar series also supports parents through difficult stages of child and adolescent development. The SEAD Program assists teachers and parents working in unison to achieve the best outcomes for girls. This important inclusion ensures that girls feel connected to their school, teachers, and peers. These factors, as researchers have identified, help to ensure that girls practise their skills in a real-world context where they are supported and encouraged by teachers and parents (Yeager, 2017; Krane & Klevan, 2018). In addition, students, parents, and teachers can access at their convenience evidence-based SEAD resources on topics such as study skills, e-safety, drugs and alcohol, sleep hygiene, mindfulness, growth mindset, and friendships to assist with their own education as well as their support of children and students. Considering the impact of COVID-19, it is more important than ever to have programs in place that directly influence the relationship that exists between girls' social, emotional, and academic development.

Developing SEAD

The SEAD Framework and SEAD Program were developed from the identified need within the College for an explicitly taught social, emotional, and academic program specific to girls. In developing the framework and program an extensive evaluation of empirically-based research was undertaken focussing on the social, emotional, and academic development of girls as they moved through specific developmental stages.

Experts in the field highlighted that a framework aimed at developing girls' social, emotional, and academic needs was a proactive measure to promote healthy social and emotional development. In addition, such a framework and associated programs would assist schools prevent the development of mental health difficulties, support school engagement and achievement, as well as improve students' ability to function successfully in society (Lawrence et al., 2015; Collie et al., 2017). However, despite this belief, many researchers noted the significant lack of empirically-based programs and research specifically for students, including girls, in the areas of social and emotional learning. Leading researchers also noted that a program tailored to meet the needs of girls and designed specifically to develop social and emotional skills for girls was essential (Rönkä et al., 2014). The importance of developing a specific program for girls was highlighted by the overwhelming evidence that the social and emotional needs of girls and boys differed from childhood to adolescence. Furthermore, researchers also emphasised other gender differences, such as emotional dysregulation and social skills challenges. In comparison to boys, studies revealed that girls reported differences in their interpersonal skills, such as higher levels of internalising behaviours, differences in managing and coping with the challenges associated with relationships, and friendships as well as differing factors that prevented school attendance (Jenkins et al., 2017; Rönkä et al., 2016).

Many researchers concluded that generic wellbeing programs do not cater for the unique developmental needs of girls and highlighted that the social, emotional, and academic needs for an adolescent girl are unique to gender and developmental phase. This research also reported that generic programs are at times limited in generating required skill changes and outcomes and are more likely to simply bring about a reported enjoyed experience by students (James et al., 2011). Subsequently, programs specific for girls that target particular skills in a school-wide population were seen as essential, rather than a 'one size fits all' approach. A fundamental difference between the SEAD Program and several other published programs is that the SEAD Program is tailored to suit girls throughout their whole schooling experience, from Early Learning to Year 12, as well as girls who reside in a boarding context.

Thus, founded on the evidence of best practice by researchers in their fields, the SEAD Program is a bringing together of evidence and best practice that encapsulates the inextricably linked social, emotional, and academic dimensions of learning and builds upon other previously empirically-based programs, such as Collaborative for Academic, Social, and Emotional Learning (CASEL), (Berman et al., 2018; Pace et al., 2019). A distinctive feature of the SEAD Program at Loreto is its all-inclusive approach, the program is not simply a siloed initiative or an 'add-on' program. The SEAD Program is based upon the key skills found to be necessary in girls' social, emotional, and academic development and exists throughout all areas of the College.

Using data to inform practice

While the SEAD Framework, which articulates the various areas and stages of development remains a static document, the SEAD Program brings to life this framework through a broad range of strategies and activities, remains fluid, and is constantly developed through the analysis of wellbeing and academic data. The SEAD Program utilises baseline wellbeing measures, such as the Australian Council for Educational Research's (ACER's) Social-Emotional Wellbeing Survey (SEW) and the Resilient Youth Student Resilience Survey (SRS). The results of this data are then examined by key staff to ensure best practice is used to guide the development of the SEAD Program for each specific age (developmental) group and more broadly across the differing areas throughout the College.

One aspect of the SEAD Program that allows staff to gain direct and immediate feedback from students is the use of Student Pulse, a program devised by Educator Impact. Student Pulse is an online tool for measuring the week-to-week wellbeing and engagement of students. It tracks the wellbeing of individual students so that the school can respond to those who express a need. It also tracks anonymised student attitudes using the Australian Research Alliance for Children and Youth (ARACY) Common Approach measures, thus providing weekly data on students' engagement with learning as well as their social and emotional needs. This process provides staff with real-time data enabling them to make informed as well as immediate changes to the SEAD Program based on the needs of different cohorts.

Through Student Pulse, the girls are sent a weekly email check-in asking them how they have been feeling this week. They can then choose from a range of responses including: 'I'm feeling great', 'I'm feeling positive', 'I'm feeling in the middle', 'I'm feeling negative' or 'I need some help'. If the student chooses that they need some help, they can then choose from three levels for assistance: firstly, their Class/Mentor Teacher; secondly, the Head of Junior School or Leader of Student Wellbeing and Academic Care; and thirdly, either the Principal, Deputy Principal, or College Psychologist. The staff member the student reaches out to for assistance will then be sent an email alert enabling them to touch base with the student to offer assistance. Students remain on an activity log until that staff member signs off that the issue has been resolved.

If a student provides a response other than 'I need some help', they will then receive five randomly selected questions to answer using the ARACY Common Approach measures. In these responses the student remains anonymous, however, through their answers the College

gains insight into the wellbeing and engagement of all our girls on topics such as positive emotions, challenging emotions, emotional regulation, self-image, physical activity, health, connectedness, friendships, resilience, etc. These responses provide an insight into the effectiveness of the overall SEAD Program and provide us with the information needed to target and develop our SEAD Program and thus better meet the needs of all girls.

Results of SEAD

At Loreto College we use many measures to identify community needs as well as assess the effectiveness of implemented strategies and programs. Our annual student, parent, and teacher satisfaction surveys had identified the need to develop a more comprehensive wellbeing program in the College. Since the implementation of SEAD survey data has demonstrated that parental satisfaction in relation to the College's approach to student pastoral care and wellbeing has risen to the highest level on a five-point scale, being 'excellent'. In addition, comparison data placed Loreto College above 'like' schools as well as 'all' Australian schools for parent satisfaction in relation to pastoral and wellbeing programs. Student and staff satisfaction also increased in this area. In relation to the Student Pulse data collected through the ARACY Common Approach measures which included the areas Valued and Safe, Healthy, Material Basics, Learning, Participating, and Positive Sense of Identity and Culture, the wellbeing outcomes of girls at Loreto had increased in all areas over the period of data collection between July 2020 and May 2021. The results also demonstrated that girls at Loreto College achieved higher wellbeing outcomes than students in other Australian schools.

Gaining immediate feedback in relation to student wellbeing was particularly important during 2020 when there were times of remote learning and student anxiety levels had increased due to the impact of COVID-19. Student Pulse became a key factor in monitoring student wellbeing outcomes. Data from Student Pulse demonstrated that from July 2020 to December 2020 there were:

- 5646 student pulse check-ins from students in Years 4 to 12
- 3.7 per cent of these students reached out directly for help from a staff member
- 41.7 per cent of students sent an expression of gratitude to another student (96.7 per cent) or teacher (3.3 per cent)
- the most common form of gratitude sent was for kindness (37.6 per cent)
- 94.5 per cent of students checked-in at least once during this time.

It was reassuring that the data not only supported the effectiveness of the SEAD Program but also assisted in ensuring that the program was tailored to student wellbeing and academic needs based on direct student feedback.

Conclusion

The SEAD Framework and SEAD Program are like no other wellbeing program as they are designed to meet a deficit in the area of wellbeing programs — that being a specific program to address the developmental social, emotional, and academic needs of girls. The SEAD Framework and SEAD Program also address the social and cultural inequities that exists for girls and women in society. ▲

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The impact of pornography: A theft of children's innocence

DR DEBORAH PRIEST, PRINCIPAL, IVANHOE GIRLS' GRAMMAR SCHOOL, VICTORIA

There has been increased media coverage over the past couple of months about the harmful impacts of pornography on the developing brains of teenagers. With good reasons, there is a growing call for regulators to create age-verification mechanisms that will limit or ideally prohibit access to pornographic sites by minors.

These calls are in response to the growing body of research that shows the online viewing of pornography by children and adolescents:

- is associated with stronger beliefs in gender stereotypes
- leads to boys holding increased sexist attitudes and views of women as sex objects
- is associated with stronger permissive sexual attitudes
- strengthens attitudes supportive of sexual violence against women
- can influence expectations about sex, with gaps developing between expectations and reality
- can increase the likelihood of earlier first-time sexual experiences, and
- is associated with unsafe sexual health practices (Quadara et al., 2017).

Furthermore, excessive watching of online pornography can lead to concentration problems, low motivation, depression, social anxiety, negative self-perceptions, and erectile dysfunction (The Council of Recovery, 2019).

From a physiological perspective, research has shown excessive consumption of online pornography is strongly correlated to changes in the size and structure of grey matter of the adult brain (Kühn & Gallinat, 2014). In adolescents however, at a time when the brain is already undergoing an "explosion of growth followed by a rapid pruning of neuron pathways" (The Council of Recovery, 2019), the brain is extremely susceptible to increased levels of dopamine that are typically secreted when watching online pornography. In fact, a teenager's brain is at its peak of dopamine production and neuroplasticity around the age of 15 years, reacting up to four times more strongly to images perceived as exciting. It is this excessive secretion of dopamine that can impact how the brain develops through these formative years and in extreme cases can lead to hypersexual syndrome (The Council of Recovery, 2019).

In February 2020 the Australian Government released its report into age verification for online wagering and online pornography (Commonwealth of Australia, 2020). The response took into consideration a range of research including the report entitled 'Parenting and pornography: findings from Australia, New Zealand and the United Kingdom' (Office of the eSafety Commissioner, 2018) and the 'Effects of Pornography on Children and Young People' report (Quadara et al., 2017).

The 2020 report noted that "just under half of children aged 9-16 had encountered sexual images" (Commonwealth of Australia, 2020a). It also cited current and historical challenges in restricting access to pornography in three areas — technological, cultural, and social. Three recommendations were stated to address the issues of unfettered access and exposure by adolescents and children to pornography. These recommendations are:

1. the creation of online standards of age verification for age-restricted products and services,
2. the extension of current developmental work by the Australian Digital Transformation Agency towards a Digital Identification Program to include age-verification programs, and
3. the eSafety Commissioner to develop a roadmap for the implementation of a regime of mandatory age verification.

The success of these three recommendations will contribute significantly to the protection of children and adolescents from online pornography. However, more can be done both in terms of school-based education and parental awareness and skills development. Furthermore, the associated challenges for girls and women need to be explored in all schools in a way that enables students to create an informed view, to understand the issues, and to have stronger agency about how to protect themselves.

Support materials to underpin student personal development programs in schools can be sought from a wide range of sources. Foundational concepts about the impact of sharing explicit images and videos online can be drawn from the highly regarded work of Maree Crabbe who founded an organisation called *It's Time We Talked*. Maree has been a regular speaker at parent information sessions in many schools across Australia. Her website is dedicated to supporting young people, families, and schools to access and understand the relevant information about the effect of internet pornography on adolescents. Her parents' resource page can be found on the organisation's website (Crabbe, 2021).

Having conversations with children and adolescents about sex or online pornography can often be awkward or challenging, with some parents (and teachers) feeling ill-equipped for these important discussions. Fortunately, there are a range of resources to assist parents to find the words to commence these difficult conversations.

A second useful website is the 'Raising children: The Australian parenting website'. This website not only has lots of useful information, it also has some short videos of role plays that demonstrate how to go about having conversations with your children. I also highly recommend to parents and educators the TedTalk presentation by Gary Wilson entitled 'The Great Porn Experiment' that explains in detail the physiological and psychological impacts of pornography on the brains of adults and developing teenagers (Wilson, 2012).

Protecting our children in a virtual world brings significant challenges for us all. However, working in partnership, we can ensure that our students are informed, empowered and confident enough to make the very best decisions to keep themselves safe. Our children are growing up fast enough without something as harmful as pornography stealing their innocence from them. ▲

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Tackling mental health

JENNIFER OATEN, PRINCIPAL, SANTA MARIA COLLEGE, WESTERN AUSTRALIA

Navigating adolescence has never been easy. Social, emotional, and physical challenges have always existed and needed to be dealt with.

However, our world has become more complex for our young people. With COVID-19 and the uncertainty surrounding this, there are so many more challenges. There has also been an increasing lens on mental health worldwide, leading to its inclusion into Sustainable Development Goals.

What is mental health?

Mental health is problematic because it is difficult to define, and it means different things to different people. There is incomplete and contradictory knowledge around the cause of and response to mental health. It is a highly complex problem that may stem from social, genetic, and environmental factors.

According to the World Health Organization (WHO, 2004), mental health is a state of wellbeing in which the individual realises their abilities, can cope with the everyday stresses of life, can work productively, and contribute to their community.

Australian statistics

Research indicates that students with higher levels of emotional, behavioural, and social wellbeing are more successful at school, and in life beyond school. This has led to an increase in schools' awareness of the need to build positive mental health during the formative years of our young people. It sounds easy — however, poor mental health in our adolescents is reaching crisis levels, and the time to address the issue is now. The dilemma is, there is no one simple solution. Below are some of the current statistics (Beyond Blue, 2021):

- Half of all mental health conditions we experience at some point in our lives, will have started by age 14.
- Over 75 per cent of mental health problems occur before the age of 25.
- One in seven young people aged 4 – 17 years-old experience a mental health condition in any given year.
- 13.9 per cent of children and young people (aged 4 – 17 years) met the criteria for a diagnosis of a mental disorder in the last 12 months.
- Young people are less likely than any other age group to seek professional help. Only 31 per cent of young women and 13 per cent of young men with mental health problems had sought any professional help.
- One in ten young people aged 12 – 17 years have engaged in self-harm.
- Suicide continues to be the leading cause of death for young Australians.
- The rate of suicide among Indigenous young people is significantly higher than among non-Indigenous young people.

The increasing number and the complexity of wellbeing and mental health issues mean many schools have begun the journey of addressing these trends. Addressing mental health does not sit conveniently within the responsibility of any one entity within the school. The responsibility must be a partnership between parents, students, and staff — all having a role to play in positive mental health outcomes.

Where to start?

At Santa Maria College, we began with a simple goal. The goal to encourage our staff, students, and parents to develop a shared understanding of mental health so all community members could be proactive (rather than reactive) and comfortable having conversations about mental health.

As educators, we often want to find the solutions and implement them before gathering data to truly understand an issue. We felt we needed feedback from a broader stakeholder group to understand the issue more deeply. We decided on a co-design process to help develop a strategy that would guide our work into the future. Our students became the primary stakeholders. They are who we are trying to help, which is why it was so important for us to hear their voice.

The innovation we demonstrated at Santa Maria College was not in approaching mental health but rather in the way we coordinated the development of our strategy. We showed rigorous attention to process, and the inclusion of parties often left behind in this type of initiative. To create a strategy based on insight and understanding, we chose to engage students, staff, and parents in a range of conversations and data-gathering opportunities to understand our context of mental health.

When communicating with parents, we wrote: We can't do it alone, we need your help, you have diverse, lived experiences and ideas which are valuable, and this is an opportunity for our community to work in partnership with our staff, our parents and our students to develop a whole-school commitment to making a difference.

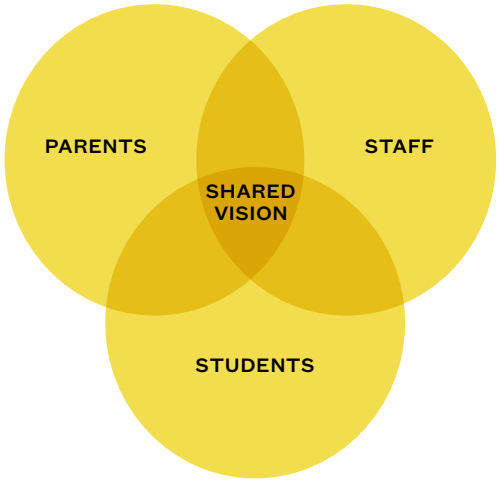

DIAGRAM 1: A COMMUNITY APPROACH TO STRATEGY DEVELOPMENT

The variety of data collection methods was time-consuming and labour intensive. However, the quality of the data and the engagement of the community helped to ensure a strategy that was thoughtfully designed and 'owned' by the community.

The tools employed in the co-design process included:

- We created Student Mental Health Ambassadors in each year group, and students nominated to the positions to form our student-steering committee.
- A 'Table of 20' workshop with parents, staff, and students to explore who contributes to the mental health of Santa Maria students and who should be engaged in the co-design process.
- A workshop was convened with the Student Mental Health Ambassadors to create the strategic objective.
  'To work together to ensure that all Santa Maria College students have the skillset to manage their wellbeing, tackle challenges, and thrive in school and life.'[1]
- We developed 13 questions to gather information that would give insight into what the College needed to know to create the strategy and achieve our goal.
- A workshop with the Student Mental Health Ambassadors discussed the design of engagement strategies, to gather information from a broad range of students in creative ways and start conversations about mental health.
- Student Mental Health Ambassadors assigned engagement strategies for each question, allocated tasks, and prepared materials for the data collection. They collaborated to decide on using surveys, online and face-to-face, voting boxes, and conversation tubes to gather data from students.
- Data was gathered, through an optional survey, from 70 staff and 178 parents. The questions focused on what our community understands and feels, our context, skills our girls already have, and what the girls want or need.

Data gathered

We gathered a range of data through a variety of engagement strategies, some of which are summarised in Diagram 2.

We also gathered data that indicated trends in year groups (Diagram 3), which was essential for us to determine if our pastoral care programs addressed the key issues, or just our perception as staff.

WHAT STUDENTS SAID	WHAT PARENTS SAID	WHAT STAFF SAID
1. Stress - school	1. Bullying / friendship issues	1. Anxiety
2. Anxiety	2. Anxiety	2. Bullying / friendship issues
3. Body image	3. Body image	3. Stress - school
4. Bullying / friendship issues	4. Stress - school	4. Body image
5. Stress - general	5. Depression	5. Depression
6. Depression	6. Stress - general	6. Stress - general
7. Family conflict	7. Alcohol / drugs	7. Family conflict
8. Suicide / suicidal thoughts	8. Family conflict	8. Alcohol / drugs
9 Emotional abuse	9. Suicide / suicidal thoughts	9 Suicide / suicidal thoughts
10. Alcohol / drugs	10. Emotional abuse	10. Emotional abuse
11. Other	11. Other	11. Other

DIAGRAM 2: WHAT ARE THE BIGGEST MENTAL HEALTH CHALLENGES FACED BY YOUNG PEOPLE?

1. By 'wellbeing', we mean their emotional, mental, physical, spiritual, and social wellbeing.

	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12
1	Stress - school	Bullying / friendship issues	Bullying / friendship issues	Stress - school	Body image	Body image	Stress - school	Stress - school
2	Bullying / friendship issues	Stress - school	Stress - school	Anxiety	Anxiety	Anxiety	Anxiety	Anxiety
3	Stress - school	Anxiety	Descriptive and Correlational	Bullying / friendship issues	Stress - school	Stress - school	Body image	Body image

DIAGRAM 3: YEAR GROUP DATA TRENDS

Mental health strategy

Using the data we collected, four focus areas were determined.

1. Culture and Values — an environment that encourages conversations about mental health.
2. Knowledge — for students, parents, and staff.
3. Skills — to manage life challenges.
4. Support — how to seek help and changing attitudes to seeking help.

Within those focus areas, there are eight key actions that can be allocated to appropriate parties and implemented powerfully.

Implementation

Once the strategy was developed, we began the implementation with the key drivers of the strategy being:

- Director of Pastoral Care
- Staff Mental Health Coordinators, who work with our Student Mental Health Ambassadors
- Student Mental Health Ambassadors
- Wellbeing Captain, a new Year 12 leadership position, to ensure the strategy is student-led
- Health Services Team – Psychologist, Nurses, Student Services, and the Deans of Years 5 –12.

Fast forward 18 months, and we have achieved many actions. One of the most significant and complex actions is the Wellbeing Scope and Sequence. We believe that the critical factors in a strong school pastoral-care approach are good people and an effective curriculum. However, very few schools worldwide have a well-researched, scoped, and sequenced curriculum for pastoral care. Santa Maria is nearing the completion of this. We have managed to develop this Wellbeing curriculum and align its priority with our academic curriculum.

ACARA (Australian Curriculum Assessment and Reporting Authority, 2012) identifies general wellbeing skills and knowledge that schools are encouraged to incorporate into the delivery of content in the various learning areas. Santa Maria believes these skills and knowledge are far too important to be taught incidentally. Our Wellbeing curriculum brings social and emotional skills and knowledge to the forefront. We have developed a specific curriculum called Mercy Wellbeing, prioritised with its own teaching time and content that directly addresses:

- Self-awareness
- Self-management
- Social awareness
- Social management, and
- Spirituality.

The team of staff currently creating a scoped and sequenced, social and emotional learning curriculum each bring a depth of different perspectives and experiences, which are complementary to this project. The document draws on the Australian Curriculum but is modified to meet the needs of Santa Maria, Catholic education, and girls' education. Other documents considered in the creation of the new curriculum included:

- Alice Springs Education Declaration (2020)
- National Curriculum
- Western Australian Curriculum
- Bishop's Mandate (2009)

Some examples of feedback from students during the data collection process

Q: Thinking about our co-design session with students, staff, and parents, what did you find most useful or interesting? A: The collaboration between students, staff and parents offered a unique insight into the views of other social groups and was very beneficial to hear what others had to say.

Q: What is important in how we work together to ensure that all voices can contribute to this process? A: We must appreciate and respect all input and ideas from every source/representative group, especially younger students who often aren't listened to as much. We must also open up the pool of contributors to many different groups within the school community, to gain as many different perspectives as possible.

Q: What role can parents play in building our mental health? A: Support, being aware of the symptoms of mental health, and knowing how to manage it.

MENTAL HEALTH STRATEGY 2019 - 2021

- Santa Maria College Strategic Plan
- Santa Maria College Learning for Life initiative
- Santa Maria College Mental Health Strategy.

It includes a year-by-year skills and knowledge continuum for Years 5 – 12. Mercy Wellbeing is student-focused, Christ-centred, and founded on evidence-based research, practice, and empirical literature.

Santa Maria College now has a strategic roadmap for addressing mental health in a way that is reflective of the community it serves. It has been wonderful to see our Mental Health Strategy gain momentum and be at the forefront of our thinking and planning. I look forward to seeing what can be achieved in the future. It is a formidable undertaking. However, we believe the document will hold us accountable and form the foundations of an even stronger culture of care and positive mental health at the College. ▲

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It takes a village

JODY FORBES, DIRECTOR OF STUDENT COUNSELLING, BRISBANE GIRLS GRAMMAR SCHOOL, QUEENSLAND

The most significant factors influencing student wellbeing occur outside of school (Sahlberg, 2021), and as such, Brisbane Girls Grammar School readily embraces the notion that *'it takes a village to raise a child'.*

Yet in today's world, the village can feel sparse, and parents increasingly report feeling isolated. In response, as a school we have conducted research into identifying the most effective ways to assist parents and invested in a comprehensive parent engagement strategy. The result is a bespoke program for parents, which comprises evidenced-based resources, articles, seminars, workshops, online presentations, and visits from leading experts. The program aims to equip parents with information and strategies relevant to their daughter's intellectual, emotional, and social development.

Research into school-based parent programs has identified a number of obstacles, including poor parental engagement (Hart et al., 2015; Spoth et al., 2007), high attrition rates (Butler & Titus, 2015; Ozbeck et al., 2018) and a dearth of empirically evaluated programs specifically targeted at parents of adolescents (Chu et al., 2012; Yap et al., 2019; 2016). In their systematic review of interventions involving parents, Hart et al. (2015, p. 167) highlighted a 'clear and current gap in our understanding of how parents can best be motivated to participate'. For practical reasons, generally both parents are unable to attend face-to-face programs, as one parent cares for children, while the other attends the program. Thus, engaging programs — that suit the particular needs of modern parents — have been suggested (Hart et al., 2015). With this in mind, Brisbane Girls Grammar School developed three unique events for our parents: Parent Seminar; Raising Confident Girls; and Fathering an Adolescent Girl. At the conclusion of each event, parents' experience and program outcomes were examined, and offered insights valuable to research focused on parental engagement in a school setting.

Parent seminar

First introduced in 2017, the Parent Seminar commences with a keynote address and includes twelve 30-minute presentations that encompass a range of academic and wellbeing topics. Sessions are delivered across three streams and parents can register to attend three of the twelve presentations available. Senior school staff deliver the sessions, which highlights the depth of relevant experience and knowledge evident within the school's staff cohort. Feedback indicates that the Parent Seminars contribute to increased awareness, knowledge, and confidence about typical adolescent issues, and that parents felt equipped with practical strategies to enhance their parenting.

> 'It was an absolutely fabulous showcase of all the expertise the school has to offer without any need at all to bring in outside presenters.'

> 'Congratulations, from my perspective (and those parents I spoke with after) the evening was an effective model for delivering, practical, well-informed assistance.'

> 'This evening demonstrated clearly the calibre, depth and breadth, not only of the available BGGS presenters, but also of the school's conviction and will for students to be professionally and appropriately supported as they journey through high school. Seeing some of the staff one doesn't usually come into contact with, and hearing of their roles within the school, was also helpful.'

Raising confident girls

Raising Confident Girls is a three-session seminar developed for Year 8 mothers. Raising Confident Girls was created to complement the Year 8 classroom-based, positive body image curriculum for students. The Raising Confident Girls seminar is novel, in that it sought to both improve the body image of mothers while providing them with the skills and education to assist to enhance the body image of their daughters. Etiologically based, Raising Confident Girls drew from several evidence-based resources and was designed, delivered, and evaluated by the School Psychologist.

Mothers attending Raising Confident Girls reported significantly improved positive body image, parenting knowledge, confidence, and skills, and positive role-modelling at the completion of the seminar, in comparison to a control group. Receiving both high acceptability ratings and attendance, the program was successful in overcoming traditional difficulties with engagment in parenting interventions (Hart et al, 2015). Follow-up evaluations revealed that Year 8 daughters whose mothers attended Raising Confident Girls engaged in significantly less appearance-based talk compared to those students whose mothers did not attend.

‘The seminars were fantastic, and I have had multiple opportunities to enlist some of the advice since the sessions started.’

‘Very positive and engaging project. Has opened my mind to some unintentional body image messages that I may be giving my daughter.’

‘I really appreciated knowing what my daughter was being exposed to through the wellbeing program at school. This helps me to have a more relevant conversation with her, as she usually clams up about these lessons when questioned.’

‘I enjoyed the seminars and the opportunity they afforded to discuss experiences with other mothers. I feel a little more prepared to deal with what may arise for my daughter during the next few teenage years.’

‘Thank you for allowing me the opportunity to take part. I also found it helpful in sharing and connecting with other mothers - the same-boat philosophy made me feel comfortable.’

‘I wish there would be more seminars similar to the Raising Confident Girls available to mothers in the future.’

Fathering an adolescent girl: the what and how

Targeted towards fathers with daughters in Years 7 to 10, the Fathering an Adolescent Girl seminar comprised two sessions that exposed fathers to ‘Girl World’ and offered simple and practical tips to assist with fathering an adolescent girl. The seminar is unique as a Girls Grammar father co-presented the seminar alongside the School Psychologist. In 2019, more than 100 fathers attended the seminar, which provided an additional opportunity for fathers to engage with one other and share insights, challenges, and successes.

Fathers were provided with information about adolescent development; identity formation, and how to navigate typical teenage situations such as emotional outbursts; staying connected; fathering for confidence; and helping to build their daughters’ assertiveness. The fathers proved a studious and captive audience. The seminar concluded with an activity requiring fathers to put their learning into action by outlining the best responses to various adolescent scenarios. The thoughtful and comprehensive answers provided by fathers demonstrated their level of commitment and dedication to their daughters. The school also provided fathers with a resource booklet for them to draw upon in the months after the seminar. The seminar was well received with most participants indicating they felt it was enjoyable, helpful, and important, and that they would recommend it to a friend.

‘I liked the fact that other Dads turned up and had the same interest in better understanding their daughters with all the challenges and imperfections of being Dad.’

‘It was great to hear about some real challenges from an ex-BGGS parent and how he did his best to understand and deal with them.’

‘Topics were clearly arranged and explained. Anecdotal examples from the presenters helped to illustrate their points.’

‘Great session. Will regularly refer to the booklets.’

‘I thought it was an excellent idea to include a parent co-facilitator in the presentation.’

‘I would strongly encourage this program. It was well done and I was surprised this was the first time it was done because it ran so well. Congratulations!’

Research outcomes

Findings from the parent engagement strategy offer valuable insights for the field, and highlight a number of recommendations for school personnel. Firstly, the outcomes suggest that when developing a program for parents it is important to invest in the process as much as the content. Creating an atmosphere where a large group of parents feel welcomed, have an opportunity to socialise, and find the event an enjoyable experience improves attendance and engagement. An opportunity to socialise with other participants prior to sessions, provision of refreshments, careful selection of a comfortable venue, seating in table groups, and welcoming each parent created a sense of group cohesion and contributed to parents feeling relaxed and engaged.

Secondly, while the Parent Seminar is open for all parents, the Raising Confident Girls and Fathering an Adolescent Girl seminars were tailored specifically to appeal to mothers and fathers respectively. Feedback from both seminars indicated that parents found them informative, helpful, and enjoyable. These outcomes highlight the value of using existing expertise within schools to tailor information for each specific school context, rather than engaging external researchers to provide a 'one-size-fits-all' approach. As such, the findings suggest that while researchers are experts in particular content, school personnel know their community and understand their needs, and therefore schools should be encouraged to work with researchers to modify or develop programs to best suit their particular parents' needs.

Finally, the feedback revealed that parents appreciated the opportunity to learn from school staff, as opposed to a visiting expert. Parents enjoyed the opportunity to engage in an experiential seminar and they felt empowered from gaining an insight into their daughter's wellbeing curriculum.

A holistic approach to education encompasses physical, cognitive, social, and emotional development. Thus, alignment and collaboration between home and school is essential. To sustain the 'village' approach, schools must continue to examine effective ways to engage their parent body and provide meaningful support to strengthen the village's capacity to fulfil their very important role. ▲

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The use of peer feedback in the classroom

MICHAEL RAFE, ACTING HEAD OF HISTORY, LORETO NORMANHURST, NEW SOUTH WALES

Research into the importance and effects of peer review and peer feedback is relatively new to the field of Australian high school education and most of the research has been conducted through tertiary students and international TESOL courses. However, if we as educators are expecting students to be evaluative and independent learners, it is our obligation to create a safe learning environment with a dynamic pedagogy to foster the development of this self-determining and student-centred learning.

There is a growing interest in developing the capacity of learners to evaluate and improve both their own work and that of others, in order to successfully direct their own learning. Thus, it is the intention of this paper to identify what the available research says about the importance of peer feedback; what prior research exists on the process of this feedback; what steps are necessary to implement a peer-feedback coaching system at a school; and how the first (pre-COVID-19) trial of this system went at Loreto Normanhurst. It is the intention that this pedagogy enables students to build independence, adequately analyse and understand marking criteria, and ultimately develop self-efficacy in supporting their peers' learning through appropriate and effective feedback.

The available literature indicates that, once they overcame their initial negative perceptions about peer feedback, students who engaged with the process of giving and receiving feedback showed improved performance. Conclusively, all literature collected identified the reciprocal nature of feedback and that by giving advice learners became more astute judges of their own learning. Moreover, through anecdotal evidence and student surveys — assessed in other academic papers and the trial held at Loreto Normanhurst — students often indicated a preference for receiving feedback from their peers. They were more motivational and empathetic towards each other in their written feedback which ultimately reinforced their self-esteem and willingness to improve.

As educators, it is our obligation to teach students essential skills for a dynamic and increasingly complex 21st century. Being able to critically analyse and provide appropriate and effective feedback is an essential skill for our ever-changing world (Walsh, 2017). However, the Australian education system at this stage has largely failed to teach this vital skill. Most of our students at

Loreto Normanhurst continue on to higher education and enter an environment where they are expected to develop as 'lifelong, self-regulating learners' (Hawe & Dixon, 2017, p. 1181). The skills of our students therefore need to go beyond simply receiving feedback, to encompass the giving of feedback which according to Moore et al. (2013), Nicol (2010), Lin et al. (2009), and Sadler (1983) is more effective for the 'growth' of the learner. As we deepen our understanding and knowledge of the beneficial impact that engaging with peer feedback has on students (Zhu, 2012; Gielen et al., 2010; and Lin, 2009) we can further refine the process of coaching students to give appropriate and effective feedback. There is a growing emphasis at universities — and in the NSW assessment and reporting requirements — on developing the capacity of learners' soft skills and their ability to evaluate both their own work and that of others (Masters, 2019).

Therefore, implementing a peer-feedback coaching system in the classroom enables students to incrementally build independence, adequately analyse and interpret written information, understand marking criteria, and ultimately develop self-efficacy by Year 12 to support their peers' learning through appropriate and effective feedback. For this process to be successful it is necessary to address the negative preconceptions of students around peer feedback and develop the culture of the school to be willing to adopt this form of formative assessment. We need to change negative impressions of 'fairness' and the issues around students' belief that marker comments will damage the social relationship between learners (Sato, 2013; Wood & Kurzel, 2008 in Boase-Jelinek et al., 2013). Thus, the teacher's job is to empower students, develop rapport, and create a safe learning environment where students are willing to share their work and ideas with others. Interestingly, the student reflections on the process by Boase-Jelinek et al. (2013) and the results of the Loreto Normanhurst Action Research Peer Feedback system identified that students generally perceived this activity as a 'non-threatening process that benefits their learning by providing suggestions from their peers about how to improve their work and by helping them understand the criteria used for assessment tasks' (Wood & Kurzel, 2008 in Boase-Jelinek et al., 2013). It is our obligation as educators to develop the culture of the school to create a safe learning environment with dynamic pedagogy to foster this self-determination and student-centred learning.

Literature review and action research findings

> Teachers are in powerful positions to build students' emotional engagement and positive attitudes to learning… teachers create classroom environments in which students feel supported to take risks in their learning, are not afraid to make mistakes, are recognised for the efforts and personal progress they make, and receive feedback that is encouraging, positive and helpful in guiding next steps in learning (Maters, 2019, p. 66).

There are a range of research studies on peer feedback and self-regulated learning. The studies, categorised in Table 1 by type, design, and method, helped to structure and implement the peer-feedback coaching system at Loreto Normanhurst. Action research that has been critically evaluated and adapted to structure the design, questions, and implementation of the program are highlighted. The work of Lin and Chien (2009, p. 79) investigated the effectiveness of peer feedback from communal, cognitive, cooperative, and pedagogical perspectives. It emphasised the need for a friendly dialogue and motivational support in which two-way feedback is established and thinking is negotiated between the two students (Rollinson, 2005, in Lin & Chien, 2009, p. 81). Although limited to only seven active participants, they unanimously concluded that peer-correction activities did make their learning experience more relaxing, gave more confidence, and intrinsically inspired them to improve (Lin & Chien, 2009, p. 84). The 2015 article by Harrison et al. helped reimagine the way that the philosophy and practice of assessment should be developed. It reconsidered the teacher as solely responsible for assessments or feedback. It is integral to 'changing practice and creating dramatically more innovative approaches to learning and teaching' (Timperleyet al., 2014, p. 4).

The assessment at Loreto Normanhurst comprised multiple components: formative and summative tasks, student criteria and data, informal initial meetings with teachers, formal post-activity interviews after each study, teacher observations, and a final research journal. It sets up the basis for implementation which focuses on 'using data effectively to inform school-level decisions, interventions, and initiatives' (Martret, 2014, p. 1). In this study, the sample size of 523 students, and their positive conclusions drawn about a peer system were repeatedly confirmed in a variety of contexts and made up the basis of the Loreto Normanhurst program. Moreover, the work of Boase-Jelinek et al. (2013) raised questions about the sustainability, quality, and fairness that comes with designing and implementing peer-feedback tasks. Although designed specifically for a tertiary and Information Technology audience, it corroborated the current understanding of this paper that 'peer assessment and review is an authentic, real-world approach to assessing student learning and achievement that contributes to development of these attributes by fostering students' capabilities for critical thinking and self-evaluation' (Ross & Rolheiser, 2003; Sood & Kurzel, 2008; in Boase-Jelinek et al., 2013, p. 119). They concluded that a coaching or training system is necessary to teach students to be critical and objective markers who focus on aspects of their peers' work that are important, and willingly and objectively engage with the feedback received on their work. While the article recommends that peer review should be kept anonymous (Howard 2010; Jelinek et al., 2013, p. 123), the system at Loreto Normanhurst

AUTHORS	TITLE	YEAR	DESIGN	DATA ANALYSIS METHOD	CONTEXT	STUDENT PARTICIPANTS
Hawe & Dixon	Assessment for learning: a catalyst for student self-regulation.	2017	Descriptive	Qualitative	New Zealand: Tertiary	9
Ion, Barrera-Corominas & Tomàs-Folch	Written peer-feedback to enhance students' current and future learning	2016	Correlational	Quantitative	Spain: TESOL, Tertiary	160
Harrison, O'Hara & McNamara	Re-thinking assessment: Self- and peer-assessment as drivers of self-direction in learning.	2015	Descriptive and Correlational	Qualitative & Quantitative	Ireland: Elementary, Secondary, Tertiary	523
Sato	Beliefs about peer interaction and peer corrective feedback: efficacy of classroom intervention	2013	Descriptive	Qualitative	Japan: TESOL	40
Boase-Jelinek, Parker & Herrington	Student reflection and learning through peer reviews	2013	Descriptive	Qualitative	Australia: IT, Tertiary, some distance education	300
Zhu & Mitchell	Participation in peer response as activity: An examination of peer response stances from an activity theory perspective	2012	Descriptive and Correlational	Qualitative & Quantitative	America: TESOL, Tertiary	2
Gielen, Tops, Dochy, Onghena & Smeets	A comparative study of peer and teacher feedback and of various peer feedback forms in a secondary school writing curriculum.	2010	Quasi-experimental	Quantitative	Belgium: Secondary (seventh grade, 12-13yrs)	85
Lin & Chien	An investigation into effectiveness of peer feedback	2009	Descriptive and Correlational	Quantitative	America: TESOL, Tertiary	16 (7 provided more specific feedback on the process)
Bell & Mladenovic	The benefits of peer observation of teaching for tutor development	2008	Descriptive	Qualitative & Quantitative	Australia: Tutors in University	52 (32 gave permission to use results)

TABLE 1: RESEARCH STUDIES ON PEER-FEEDBACK AND SELF-REGULATED LEARNING

identified that by making students accountable to each other reduced the likelihood of overly critical comments. Finally, the action research by Ionet al. (2016) cemented the importance of setting up a system designed to teach the skills needed for peer feedback, to develop a more self-directed attitude towards their own learning, and preparation for personal development.

However, the weakness of their methodology was the complex, and time-consuming collection of data (each response needed three peer reviews) and the time it took to return the feedback, thus skewing the students' perception of the effectiveness of the task. This was a minor issue that was addressed in the Loreto Normanhurst system by creating a block of three lessons where the task is delivered, students were coached in effective feedback, the peer feedback occurred, and was followed by the returning of feedback and task to the students for self-review. The most important observation from the study is: 'regardless of the quantity of feedback received, if we are not in a cohesive group… [that doesn't] collaborate together, it will be difficult to resolve the activities together' (Ionet al., 2016, p. 8). Hence, the most important aspect of developing the peer-feedback task is the initial coaching to demonstrate and teach grit, resilience, determination, peer negotiation, conflict resolution, and appropriate communication skills.

The Loreto Normanhurst system

Essentially, the peer-feedback system needed to prioritise 'coaching' students through the process of understanding marking criteria, modelling how to attribute marks to student work, and providing students with the confidence, self-advocacy, and willingness to give feedback to others (Moore, 2016; Moore and Teather, 2013; Lin and Chien, 2009). The peer feedback activities 'spark curiosity and intrinsic interest in learning and understanding… [that promotes] positive, constructive feedback on how they can continue to make progress' (Masters, 2019, p. 67). This invariably promotes students' personal development of negotiation and communication skills, to adequately and appropriately give and receive feedback, to improve written performance. It is this process of analysing other students' work, cognisant of giving motivational, empathetic, and effective feedback that created, through the Loreto Normanhurst Action Research Peer Feedback system, responsible, reflective, and self-regulated practitioners.

The Loreto Normanhurst system collected data from formative assessment activities and tested the system with 43 Year 10 students over the full year in 2019. Due to COVID-19 restrictions, an expansion of the trial was suspended for 2020, and instead it is to be expanded in 2021. Ultimately, this project examined how self and peer-assessment and feedback could change the philosophy and practice of assessment, reconsidering the teacher as solely responsible for feedback on student work. It is integral in 'changing practice and creating dramatically more innovative approaches to learning and teaching' (Timperley et al., p. 4).

This action research project used Chan's (2006) identification that feedback was more likely to enhance self-efficacy when it was formative, rather than

summative. Moreover, integrating Hattie et al.'s (2011) analysis of students' self-regulation skills, we identified and developed the marking criteria scaffold (based on teacher observations and student feedback) to allow students to provide effective feedback that targeted relevant analytical, structural, and literacy components of the written work. Developing rapport with students and a safe learning environment are two things that the research indicates are essential for the success of this type of learning. The students' confidence and willingness to engage in this type of learning was a direct result of their trust in the teacher and in the classroom environment (Higgins, 2001; Kaufman et al., 2011; Nuthall, 2007; Zhu & Mitchell, 2012; Timperley, 2014; and Sato, 2013). Additionally, student skills in self-evaluation and peer-evaluation throughout the process, provided greater confidence to engage further with the task, and assisted in the student seeking additional feedback from the student marker and accepting that feedback. It also enhanced the willingness of students to invest effort into seeking and dealing with feedback information. Students naturally became self-reflective during the process and commented, through anonymous surveys, on their natural inclination to reflect on their own work while marking another student's work:

'If I can learn what things to look for and the advice I should give to help others, I'd probably be able to use that to improve my own work'; 'Understand what the markers are thinking… so I am able to apply this feedback to my own work'; 'helped me to develop my answers and understand what was missing from my answers'; 'I found peer feedback task effective as it allowed me to view someone else's work and mark it so that I could reflect on my own'; 'It allowed me to gain more feedback…[and] consider myself what I would do to improve my own work by looking at the criteria'.

Additionally, in pre-surveys 91 per cent of the Stage 6 Ancient History cohort (72 students), and 87 per cent of the Year 10 cohort (167 students) identified a desire to learn how to give effective feedback to other students. Thus, there is an innate desire in the students before they were exposed to any of the literature or expectations on them for future tertiary studies to learn how to effectively support, review, mark, and provide useful feedback for their peers. Moreover, Hattie identifies that 'when students can monitor and self-regulate their learning they can more effectively use feedback to reduce discrepancies between where they are in their learning and the desired outcomes or successes of their learning' (Hattie et al., 2011, p. 6).

Methodology

While the research of Boase-Jelinek et al. (2013) and Howard et al. (2010) recommended that the peer markers be kept anonymous, the Loreto Normanhurst findings identified that students gave more targeted, supportive, and effective feedback when they were accountable to each other and this had the added benefit of allowing conversations between marker and student to further enhance their written responses. The findings also revealed that receiving feedback from peers can lead to a positive effect, and if the teacher fosters positive relations between peers, the feedback (particularly critical feedback) is more likely to be considered constructive and less harmful to the learner (Bradbury & Fincham, 1990; Nuthall, 2007; Hattie, 2011). The work of Ion et al. (2016) identified the need for a block of lessons where the task is delivered. This was implemented for the Loreto Normanhurst project using a three-lesson sequence where students were coached through the process of marking and providing effective feedback. This was primarily through teacher modelling where the teacher spoke aloud the process of marking, and the thought processes they go through, as they mark a response on the board in front of their students. The teacher must also make direct links to the marking criteria, to show students the importance of identifying aspects of a written response that meet the requirements of the marking criteria, and give an explanation and guide to appropriately attributing marks.

This is followed by students engaging with peer responses and using the model that the teacher has provided and the scaffolded marking criteria to engage with another student's written response. The teacher must circle the classroom to support students and help model ways to give feedback, targets, and allocate marks. This lesson is then followed by returning the feedback and task to the students for self-review (Ion et al, 2016). As this was a low-risk formative assessment based on individual growth and improvement in work quality, students were not focused on the marks and were more interested in the empathetic and motivational comments and student identified targets to improve. Interestingly, by the third time students engaged with this activity, they were able to mark the response without the guidance of the teacher.

This system was trialled and revised over three versions throughout the year (totalling nine lessons) — two versions in Term 2 and one in Term 3, 2019. These versions prompted an enhancement and refining of the resources, structure, and process, and gave ample time to coach students through the requirements and expectations of the task. The focus of their written activities was a 10-mark History Response (mini-introduction, two paragraphs, and a mini-conclusion — aligned to the structure taught for a 10-mark response in the NSW Higher School Certificate) under timed conditions of 20 minutes. This was artificially marked out of 20 to allow students a more nuanced understanding of how to attribute marks. Student post-feedback, work samples, anecdotal feedback from four pre-selected students, and teacher observations were collected on the process to develop the next version.

Lesson sequence

Lesson one: 'Coaching and modelling lesson' (break down the question and identify the key aspects of a practice question — in this case a 20-minute, two paragraph response, teacher guided analysis and discussion of the marking criteria, and the teacher marking of a 'model response'. The teacher marks the response out loud so students can see the teacher's thought processes while marking. The response was projected and marked on the board and the teacher wrote appropriate comments while drawing direct links to the requirements set out in the marking criteria. Students then interpret the marking criteria and attribute a mark and feedback based on the teacher's coaching and 'verbalised thoughts'. In the first iteration of the marking criteria all marks were within ±3 of the teacher's mark — however, after refining the scaffold this was reduced to ±1 by the second and third iterations.

- The first iteration used an unnamed student response from a 2015 summative assessment, with the teacher modelling of the process.
- For the second and third iterations a teacher sample was constructed with deliberate faults which allowed the students to critique the teacher's work. This developed rapport with the students, and the teacher was also able to model how to accept feedback and develop self-reflection skills.

Lesson two: Recap lesson one with a focus on the requirements of the question and marking criteria. Students write responses under examination conditions. An opportunity can be given at the end of the lesson for self-reflection.

Lesson three: Students use the marking criteria to mark and give feedback on another student's work from the previous lesson (this usually takes three-quarters of the lesson to be done effectively). Teacher circles room to support students. Students who were particularly anxious in the first iteration marked their own work, and the teacher spent time with these students reinforcing the benefits of peer-support and the 'low risk' aspect of the activity. By iterations two and three, all students were prepared to share their work with others. The last quarter of the lesson can be used to self-reflect and re-read/mark their own work, or this can be set for homework, or the start of a fourth lesson if there is a need for debriefing and additional time to reflect on their work.

Analysis of trends and academic results

The project collected and collated data from pre- and post-surveys, progress data from the three formative peer-feedback activities, and four summative assessments throughout the 2019 course. Two classes were used as case studies to test the impact of self-feedback verses peer feedback. The two sample classes contained 'like-students' who were coached through the process in the same way, students were provided with the same resources, the same instructions and the same modelling, the same teacher and the same scaffolded marking criteria, and teacher feedback was provided. One class used self-evaluation and self-marking only, while the other class engaged with peer feedback. While the starting point and academic performance of the students were similar (average of 71 per cent for the first summative assessment task), the peer feedback class significantly improved compared to the control class over the course of the year. In the end-of-year summative assessment, the peer-feedback class performed 8.4 per cent better than the cohort average, despite starting 0.9 per cent below the cohort average at the start of the year. While there was a dip in performance in their first peer-feedback formative assessment, this was put down to an ineffective marking-criteria scaffold that undervalued the B and C range students. Students' marks were on average 2.3 marks below that of the teacher's, and therefore skewed the results of this test. It prompted the need for an adjustment to the scaffold which led to the development of far more accurate scaffolded marking criteria. By the second and third iterations of the task, students were within ±1 mark of the teacher.

Students commented on issues with time management and structure and were able to adapt their writing style and coverage of information/evidence in their written response based on the expectations of the marking criteria. No explicit teaching was done on this aspect as there was a focus on not artificially elevating student performance in these selected classes compared to the cohort. Students in the peer-feedback class naturally became more self-aware of their fallibility; and the feedback provided by the other students gave achievable targets for the students. This realisation and improvement became significantly more obvious in the peer-feedback class as opposed to the self-marked, standardised class. The self-marked class was also far more critical of their own written performance but this did nothing to help their confidence or motivation to improve. Additionally, it had no effect on their improvement throughout the year, where those students finished with a negligible change compared to the cohort average.

Conclusions

The use and integration of peer-feedback as dynamic teaching pedagogy within the classroom has proven to significantly improve student academic results. The most important conclusion, however, is the students' natural inclination was to become more empathetic, not only towards other students in their work, but also towards the teacher and themselves. Students realised that the abundance of information, the listing of information, and providing a 'brain-dump' of their understanding of the topic was less important than meeting the requirements of the question and the associated marking criteria. This

significantly improved their on-task information and development of structure and argument, which positively impacted both their confidence and their academic performance. This student growth, however, is only achievable through an effective peer-feedback coaching system, where teachers model how to understand marking criteria and provide students with the steps required to provide effective feedback and targets for improvement. This ultimately provides them with the confidence, self-advocacy, and willingness to give feedback, and the openness to accept other student and teacher feedback in return.

By developing their ability to effectively give and receive feedback, while also improving their summative assessment performance, we have the potential to set up our students for the expectations and unpredictability of life beyond school. Modelling and providing clear directions, actions, and suggestions is the best way to develop students' skill base, motivation to participate in the activity, and quality of student feedback activities (Moore, 2016; Moore and Teather, 2013; Lin and Chien, 2009). The focus for the implementation of the coaching system must be designed around providing skills of negotiations and diplomacy, verbal communications, giving and accepting criticism, justifying one's positions, and assessing suggestions objectively (Lin & Chien, 2009; Topping, 2000). The importance of this type of learning will become more relevant where there is a stronger push toward project-based learning, attainment levels, soft-skills, and the creation of more adaptable students with skills rather than content knowledge, prepared for a volatile job market. Therefore, peer feedback on formative assessment can be used to promote intrinsic motivation in student learning and mastery, and encourage a willingness to take risks and make mistakes in a safe environment. This system has proven so far to 'encourage students' sense of autonomy and control over their own learning' (Masters, 2019, p. 72) and we as teachers have the potential to 'empower students to become more self-directed in their learning' (Masters, 2019, p. 73). ▲

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Disrupting the norms to transform learning: Learnings from 2020

CERI LLOYD, HEAD OF ENGLISH AND PROJECT LEADER: SENIOR YEARS LEARNING MODEL, ST CATHERINE'S SCHOOL, VICTORIA

"Real change takes place in deep crisis, you will not stop the momentum that will build." — Andreas Schleicher, Director for Education and Skills, Special Advisor on Education Policy to the Secretary-General at the Organisation for Economic Co-operation and Development, 2020.

The "deep crisis" came in the form of COVID-19, a pandemic that none of us could have predicted, which created the catalyst for significant educational change and reform. Educators recognised the necessity to shift their educational delivery and pivot quickly into a remote learning environment. At St Catherine's School, we have always been committed to adapting our model of learning and educational platform in a way that meets the needs of our students in a rapidly changing world. Teaching methodology needs to evolve to keep up with changing times and incorporate integrated technologies into learning in a relevant and accessible manner. Our role as educators is to equip, enable, and empower students with the learning and competencies they will need not only during their secondary schooling, but post school (Cummins, 2020). However, nothing we learnt could have prepared us for the 2020 year in education.

We wanted to create a form of hybrid learning that breaks down the traditional walls of teaching.

During St Catherine's School 2020 Learn@Home program, it became clear that we needed to harness and expand upon the remote learning environment that we had been thrust into. If we didn't take up this challenge, then we would be missing an opportunity for significant educational reform, and real and profound change. The student feedback in the weekly surveys expressed a desire for greater independence, flexibility to learn at their own pace and the ability to revisit a recorded online class or lecture. Through the challenge of COVID-19, we saw an opportunity to change our mode of delivery and create greater student agency. As Schleicher (2020) states, "We have seen massive disruption in response to the COVID-19 pandemic, which has exposed an obvious need for innovation and agility in the education system". The question was, and remains, how do we act on this and harness those opportunities for our students?

Schools are first and foremost about strong relationships, and we did not want to compromise on this at all. We also wanted to maintain continuity between our past, present, and our future. The students had engaged with remote learning during the Learn@Home program in 2020 and this had given them greater adaptive expertise and growth in their learning and wellbeing. This was widely welcomed and pointed the way forward to implementing a change in practice at the school. The teachers had shown significant capacity to meet these demands for continuity and change. Intensive professional learning took place on digital technologies and delivering classes in an online environment. Teachers demonstrated their ability to learn new skills and quickly refine their teaching delivery. We wanted to continue to encourage and support them to build on their learning during 2020.

We knew we wanted to create a form of hybrid learning that breaks down the traditional walls of teaching — ones that don't work for all students and allows teachers to tailor the learning experience for each student. A hybrid-learning model can provide the right mix of all learning possibilities in blended online and offline environments and can prepare students for a world where knowledge is not fixed, ensuring the development of lifelong skills and enable them to thrive in a rapidly changing world (Mahat, 2020).

The pandemic amplified this notion that learning can now happen anywhere and anytime (Di Prato, 2020). Our research and consultation were showing we needed to embrace the benefits of both face-to-face teaching and online delivery for students. Flexible time frames, that can be personalised for each student, allow them the ability to learn at their own pace. Most importantly, we needed

IMAGE: THE COVID-19 PANDEMIC ALLOWED ST CATHERINE'S TO ENACT POWERFUL CHANGE ACROSS ITS SENIOR YEARS

to create a model that enhanced student agency by giving students choice, self-direction, independence, and ownership of their learning. The challenge was balancing the competing demands of those more traditional school structures, the appropriate year levels to trial hybrid learning and the key question, how much asynchronous learning, do we want to offer students? This synergy needed to be carefully planned, implemented, and evaluated.

The development of our model had key objectives that needed to be met — flexibility through asynchronous delivery, reinforcing student learning by reviewing content, more choice and autonomy, and developing independence in their learning. We wanted students to control the pace of their learning, develop problem solving skills, creativity, and engagement in their learning.

Surveys and interviews indicate that students can see the benefits and understand the objectives.

Consultation was conducted with various tertiary institutions, and it became clear that universities were going to continue remote learning and online lectures/tutorials. The findings showed that this sector would not shift back to full time on-campus learning and that students would have choice in their mode of delivery in the future. Furthermore, career pathways and changes to workplaces reflect that remote work would become a feature of future employment. These changes created a dialogue on the possibilities and the preparedness of senior students for post-school study and employment. Schools could not afford to revert back to their traditional delivery of lessons if they want to effectively prepare students with the character and competencies for life after school.

Implementation of the Senior Years Learning Model 2021

Survey responses, data, research, the Learn@Home program, and ironically COVID-19 led to the introduction of the Senior Years Learning Model in Years 10 and 11 in 2021. This hybrid-learning model embraces both face-to-face learning and asynchronous Independent Learning Tutorials (ILTs). Courses are delivered as a combination of 10 synchronous face-to-face lessons on campus that are complemented by a program of Independent Learning Tutorials offering significant flexibility for students. For each subject, the ILT includes a combination of an optional on campus *Flexi-Tute* enabling subject-specific support with teachers. There is an asynchronous online tutorial delivered in the *Flexi-Tute*, designed to provide instructional videos to support study and homework, or a series of lectures in the form of a Masterclass. Students are timetabled with one double lesson per subject each fortnight to engage and participate in the Independent Learning Tutorials. For Year 11 students, their ILTs can be completed on campus with the support of a teacher facilitator or off campus at a time that suits their individual schedules.

The evolution of this learning model and educational platform has achieved a hybrid model of learning both on and off campus. It has created a growing independence and flexibility for senior students, while securing the relationality and educational benefits of face-to-face learning with teachers and peers.

Mastering the *Masterclass*

The *Masterclass* has become a key component of the Independent Learning Tutorials and varies in its delivery across subjects. The *Masterclass* lectures focus on the concepts, content, or skills that are relevant to the subject. They require students to view, listen, and engage with a range of multimedia during independent study. A key benefit of the *Masterclass* is that it has given students the opportunity to consolidate, review, revise, and replay lectures, allowing for deeper learning in each subject.

Students engage with a suite of lectures on texts on historical context, views, and values as well as skill development in the various essay types. Problem-solving strategies are developed by working through mathematical equations, responding to analysis questions, or listening to lectures in another language that students are studying to consolidate oral language skills. The more practical subjects like the Arts and Physical Education have embraced instructional videos on how to cut a lino print, construct a stage set model, plus short vignettes on visual diary annotations, and game strategies in matches. The ability for students to self-pace lectures and tutorials, to suit their own learning style and review them as many times as they need, has become a key feature of this model and has enriched student learning.

Ongoing professional development and support is given to all teachers enabling them to trial various approaches and the discussions on the model have led to heightened professional collaboration and critical thinking for teachers across faculties. Accessing and learning how to use the most effective digital technologies has been a significant focus for teachers in the development of the Masterclasses. Recently, our data analytics has allowed for tracking to see when students are accessing the *Masterclasses* and how often.

Most importantly, this model has improved our professional development program in *Teaching for Thinking*, a pedagogical approach that maximises student outcomes, optimises the efforts of teachers, and integrates a number of critical educational concerns

(Ellerton, 2020). Pedagogical imperatives are developed around shifting the focus from knowledge to enquiry, thinking, and planning in the language of student cognition, and working collaboratively where thinking can be shared (Ellerton, 2020). The Senior Years Learning Model has built on the *Teaching for Thinking* learnings and allowed teachers to develop lectures and tutorials that focus on student cognition allowing students to adopt critical thinking and values of enquiry.

Review and evaluation of the Senior Years Learning Model

The Senior Years Learning Model is being consistently evaluated using student and staff surveys and data which has informed any changes to ensure that we are delivering the best learning opportunities for our students. Targeted student interview groups, consultation, and communication to parents has been a consistent part of the implementation.

Importantly, through the student surveys we have found that students understand the rationale for the introduction of this model, commenting that they see it as: building on the positives of online learning; responding to university reality; creating flexibility to take control of their learning; and to have less reliance on teachers. They also understand the benefit of the model as they comment that they are learning: how to prioritise; manage work load; study independently; engage with active learning not passive; and it is setting them up well for careers after school.

Study habits and skills are being further developed as students state that it is: a good reset to check organisation; removes the stress in organising homework; it's flexible to work from home; and they are more focused in their study – reusing videos and engaging with self-directed learning. The surveys and interviews indicate that students can see the benefits and understand the objectives of the learning model. At no other stage in my professional career have we sought so much input from students on their academic studies and the delivery of their curriculum. The implementation of this model has created a unique partnership of learning collaboratively between students and teachers. Furthermore, students have a voice and agency over their learning model. We recognise this as an empowering change that is another benefit of this model.

The students also offered suggestions for further improvement, a crucial aspect to further developing the model. If some aspects of the ILTs were not working, we needed to know, so we could shift the content and delivery. Changes emerged from the feedback such as shortening the lectures, creating more variety in tasks, developing diversified content, and differentiation for student abilities and subject needs. Changes are also being considered on the structure of the Flexi-Tutes and the scheduling of the asynchronous delivery in 2022.

Concluding comments

The most important rationale for developing the Senior Years Learning Model for Years 10 and 11 is to empower students in their learning and equip and prepare them for post-school life. A testament to the impact of any new educational reform must be that it offers positive student outcomes and I conclude with comments from a Year 10 student:

> Through the asynchronous learning structure, the ILT's have enabled us to develop an entirely new set of skills that we otherwise wouldn't have had access to and can apply to all aspects of our learning -both in class and during ILTs. The integration of the ILT's has taught students to look beyond the obvious solution and has allowed us to utilise and develop different methods of learning. Through the focus on working independently, students have both learnt and developed new learning techniques and skills in which we are able to gain more confidence in our own learning abilities. However, most importantly, I believe that the ILT's prepare students for life beyond the classroom, they allow us to utilise skills that will be necessary in university, future careers and ultimately, for the rest of our lives.

The literature teacher in me contemplates the broader philosophical view that in life we are always thrown challenges that seek to define us. The crisis of COVID-19 allowed St Catherine's School to enact powerful change and the momentum is well and truly building in this era of disruption. ▲

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Sustaining a vibrant village

DANIEL CRUMP, DEPUTY PRINCIPAL, AND DEB LONSDALE-WALKER, DEAN OF STUDENT WELLBEING, STUARTHOLME SCHOOL, QUEENSLAND

It is well established that optimising success for today's school students is a three-way connect whereby educators, parents, and students rally to deliver outstanding results. Policymakers have called for effective education that resides in a partnership between families, parents, and the community (Savelsberg & O'Hehir, 2014).

No one community member can take responsibility for the other when you are in the business of delivering the best outcomes for every child — it takes an equal commitment from all partners. An effective implementation framework is a critical success factor that accounts for stakeholders' diverse needs within school communities (Catholic School Parents Australia, 2021) and provides the direction for a successful partnership between parents, students, and educators.

The old adage "it takes a village to raise a child" is well in play at Stuartholme School. Situated in Brisbane's inner west, Stuartholme has a catchment from the CBD to rural, remote, and Indigenous communities, from around Australia and from overseas. As with many schools across the globe, COVID-19 put pressure on the partnership between educators, parents, and students. In sustaining our vibrant village, it was necessary to explore new frontiers to support parents. A creative solution was born in the genesis of the Stuartholme Lab Project, an essential part of the school's learning and wellbeing program, aimed at building parent capacity.

The driver behind the Lab Project was the longitudinal data indicating the compelling benefits of parental engagement. Parental involvement can positively impact a child's achievement, irrespective of the influence of background factors such as race or socioeconomic status (Desforges and Abouchaar, 2003, p.28). When parents work as partners in their child's learning it can have long-lasting positive impacts including engagement in learning, growth in academic buoyancy, enjoyment of learning, enhanced relationships, early intervention, and challenging student expectations (Catholic School Parents Australia, 2021).

Most importantly, the work of schools can only operate alongside what happens in the home and cannot ever replace the role and responsibility parents have in supporting the achievement of educational excellence (Institute of Positive Psychology, 2020). Additionally, there is benefit in both teachers and parents "sharing the how" about what works well to achieve more strength in this domain (Presland, 2004). Stuartholme is leading the way in this regard with the Lab Project.

A robust framework for implementing the Lab Project was developed, underpinned by a range of guiding principles to enhance parent capacity. Influenced by the Dual Capacity-Building Framework for Family-School Partnerships (Catholic School Parents Australia, 2021), implementation centred on the '4 C' areas to build and enhance the partnership's capacity. These are Capabilities (skills and knowledge); Connections (networks); Cognition (beliefs, values); and Confidence (self-efficacy). It was integral that these were present across learning experiences for parents, students, and educators to address the strong correlation between teacher quality, parent engagement, and student academic achievement (McCrindle Research Pty Ltd, 2021).

Strategically, a staged approach to implementation was developed to harness the collective wisdom of the parents, students, and educators, and target input on areas of need. Through this collaborative process, it was apparent that the unique approach, of parents mentoring and coaching other parents, was a key factor in seeing parents drive their own learning, and collectively build capacity through engaging and learning with each other.

Initial implementation involved a parent-led workshop facilitated on themes on which a panel of experienced parents provided insights and guiding direction. This was carried out through consultation with the Parents of Stuartholme forum to seek parental input, support, and buy-in.

A critical success factor for the workshops was parent facilitation. Of note, the project needed to acknowledge that parents have a range of different styles of parenting — from conservative through to liberal viewpoints. It was important that the model respected this and offered creative solutions for parents to customise to suit their circumstances.

Parent response to the Lab Project was overwhelmingly supportive. Feedback from the first facilitated workshop identified that parents were relieved to receive advice from other parents and took solace in knowing that they were not alone in navigating adolescent issues. In addition, they enjoyed the opportunity to learn from those who had been there before and explored ways to adapt this to their own home.

The Lab Project has now been complemented with input from Positive Education champions and international experts (Dan Haesler, from Power of Positive Psychology and Dr Ron Ritchhart, Senior Research Associate at Harvard University) to facilitate parent learning on issues around the power of Positive Psychology and cultures of thinking within the classroom. Over 120 parents engaged in the first face-to-face and online learning session with Dan Haesler to build skills to help their child's positive emotions, engagement with learning, respectful relationships, purpose, and achievement as part of the Lab Project. Ultimately, this process has enabled the capacity building of educators, students, and parents to optimise each child's success.

In looking to the future, Stuartholme aims to be proactive in supporting the wider educational sector, and the Lab Project has been extended to include a branch for educators. By providing opportunities for broader networking, The Lab for Educators supports educators to maximise learning and wellbeing success for all young people regardless of their school. This project is gaining momentum and will continue developing the educational sector's capacity to learn from one another through formal and informal connections.

Stuartholme's approach of enacting The Lab Project for parents and educators has strengthened the educational partnership. Early anecdotal evidence indicates parents and educators alike are keen for further engagement through this medium. Enthusiasm for the approach certainly was indicated by the increase from 40 parents at our first forum to over 120 families at the latest. The continual focus on the three-way partnership of parents, educators, and students is integral to ensure that strategic priorities are enacted to align with the vision of every child flourishing so that all stakeholders can engage and participate in its pursuit. ▲

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IMAGE: TEACHERS ENGAGE IN COLLEGIATE CONVERSATIONS THAT HELP TO DEVELOP WORKPLACE CONNECTEDNESS

How do schools adopt proactive approaches to wellbeing for their communities?

EMMA GRAVE, DEPUTY PRINCIPAL, SEYMOUR COLLEGE, SOUTH AUSTRALIA

Improving the mental health and wellbeing of young people has been identified as one of the most critical responsibilities our schools are charged with. It would appear that not all is well with the mental health of our youth, despite attention and emphasis on wellbeing over recent years.

According to Beyond Blue, half of all the mental conditions we experience will have started by the age of 14 and suicide continues to be the biggest killer of young Australians. These statistics are even more concerning for remote and indigenous youth. Given this context, schools play an important role in supporting students and their overall development. Furthermore, schools have the potential to deliberately adopt protective approaches to wellbeing for their entire community. Global studies show that a fifth to a third of young people today experience significant psychological distress or disturbance. This diminished sense of optimism in adolescents is a key driver for making wellbeing a critical component of education.

Wellbeing can be considered as systematically developmental, which suggests that schools have a responsibility to promote and prioritise personal wellbeing as a critical outcome. Schools can create both a sense of belonging and a safe space to grow and mature.

Headlines in Australian newspapers in recent years have flagged stories such; 'Morale Drives Teacher Exodus', 'More teachers, but fewer staying the course', and 'Why our teachers want to leave'. This focus on mental health has been on the rise and has had the attention of the media. The Association of Heads of Independent Schools of Australia reports there have also been concerns regarding the growing demands on school principals. Teachers report the highest levels of occupational stress in Australia, the United Kingdom, and America. And further, in Australia 41 per cent of teachers report high levels of occupational stress. In looking at WorkCover claims, in 2014 teachers made more mental stress claims than any other industry in Australia.

The cause of stress for students and teachers in schools can be difficult to quantify. Issues with workload, workplace conditions and climate, and overall expectations all contribute in some way. Poor student behaviour is seen as a growing area of concern, with

associated issues including a lack of motivation and effort, disrespect, violence, and challenging authority. Teachers feel the pressure to meet targets, adapt to new curriculum, and feel disempowered in relation to decision-making and strategic planning. Stress and burn-out may begin with pre-service and student-teacher engagement. The attrition rate among early career teachers is reported to be as high as 50 per cent.

For schools to adequately address these growing concerns, a focus on protective practices should be prioritised in the workplace. Individuals need to have a greater sense of self-efficacy, feel connected to the community and supported by leaders and colleagues, and receive timely feedback and authentic recognition.

There is growing evidence to suggest there is a clear link between teacher stress and student learning (Collie 2012). The teacher is one of the most significant contributors to student academic performance. The relationship between teacher and student must be respectful, positive, and solutions focused. The quality of this engagement will have a direct impact on possible outcomes in the classroom.

The research and literature suggest that school policy must drive positive culture. Words and deeds must be aligned. Professional development should consider both the need to develop further understanding in teaching and learning, but also in the need to upskill in wellbeing and pastoral care support. Leaders must also dedicate time and resources to staff wellbeing. A supportive school culture can reduce the risk of stress in schools. It needs to be tackled collaboratively, for the betterment of all.

Permanent pivot post pandemic

Should we begin with teachers when prioritising wellbeing in schools?

High levels of engagement in the workplace, overall career satisfaction, greater productivity, reduced presenteeism, and fewer sick days are the potential dividends for schools who get it right. Such benefits suggest it is in the best interests of school leaders to intentionally foster a staff wellbeing framework. In doing so, a clear delineation between happiness and wellbeing at work is important.

Teacher wellbeing must be included in an over-arching strategic vision for the school. The disposition of a school's leadership team also had a critical impact on the perception of workplace health for the employee.

Practices such as gratitude boards or starting staff meetings with a 'round-the-table check-in' can contribute to the creation of shared values and vision for the school. When wellbeing principles are visible and actioned regularly, there appears to be the most chance of shifting school culture towards one of compassion, perspective, and understanding. The research is clear that schools must continue to work to develop personal resources and programs for employees in a top-down approach, while also building connectedness and organisational health from a bottom-up perspective. In doing so, schools can create the climate for employee happiness more successfully.

School leaders have a role to play in modelling best practice related to their own wellbeing. Both teaching and operational staff must see the leadership team as genuine. Leaders who can manage the delicate balance of approachability and understanding with high expectations and high accountability have the greater potential to build staff wellbeing in their schools.

The top-down and bottom-up approaches could also be viewed as formal and informal opportunities to build workplace connectedness. Schools must have policies and procedures that anchor school culture and agreed ways of being but also more informal ways that allow wellbeing to live and breathe in day-to-day life. A staffroom culture of respect, community, and collegiality is a good place to start.

We must all prioritise positive organisational behaviour

School leadership teams must acknowledge the critical importance of self-efficacy, optimism, hope, and resilience for all employees within the organisation. A happy teacher will be more effective and engaged in the classroom, and the potential flow-on effect for students cannot be under-estimated. In considering the multiplier effect, happier and engaged teachers have the potential to create a contagion within a school community. The benefits for the broader culture of the school can be significant.

It has long been understood that individuals function best in both their personal and professional lives when they have a sense of meaning and purpose, and feel what they are contributing to their workplace is both meaningful and valued.

The strength of co-worker relationships and organisational connectedness can be powerful. This golden thread is a strong protective factor for staff against illbeing and workplace stress. A strong sense of community among employees predicts strong professional outcomes, job satisfaction, and overall commitment to the organisation. ▲

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Hands up ... who knows the secrets to effective learning? Increasing learner agency through neuroeducation

CATHERINE BRANDON, DIRECTOR OF THE GENAZZANO INSTITUTE OF LEARNING & BRAIN SCIENCES, GENAZZANO FCJ COLLEGE, VICTORIA

The Genazzano Institute of Learning & Brain Sciences was established in 2017 and is underpinned by the core Genazzano FCJ College values of lifelong learning and the pursuit of excellence. With a commitment to best practice and a focus on neuroscience, learning, and innovation, the Institute engages with industry and educational partners to offer progressive educational opportunities for educators, students, and the wider community.

From research to real life

The brain, of course, is fundamental to all learning. The field of neuroscience has made giant leaps in recent decades through research and the use of new technology such as functional medical resonance imaging (fMRI). This new evidence has seen erroneous ideas exposed, scientific information updated, and incredible insights into brain processes and function revealed. There is still a long way to go to unravel the mysteries of the brain, but the implications for education are obvious and urgent. If educators can effectively utilise current evidence about *why and how* humans learn, then the practices of learning and teaching can be revolutionised. The urgency is created by the rapidly changing landscape of learning. With no warning, learning online and blended models have become a global mainstay and we are preparing students for a future we can only imagine. Pathways to further study and employment are fast becoming unconventional. Time is precious and educational practices must be efficient, effective, and flexible (OECD, 2021a).

Enter the *Science of Learning*. This is a burgeoning field that broadly aims to link research in areas relevant to learning, such as neuroscience, with educational practice. In order to achieve this, researchers need to work closely with educational bodies and classroom experts (teachers) to translate neuroscientific findings into practical classroom strategies (Horvath and Donoghue, 2016).

Over the past few years, Genazzano FCJ College has been fortunate to engage with the University of Melbourne's *Science of Learning* team and the Science of Learning Research Centre to learn about educational neuroscience and to build capacity. Teachers have collaborated with researchers, explored neuroscientific principles, and undertaken action research to embed and evaluate learning strategies.

Dr Jared Cooney Horvath, neuroscientist, author, and educator, has led the College's professional learning and project work in the Science of Learning, working closely with leaders and teachers. Dr Horvath's inimitable work in this field is fresh, enlightened, and brings to life the notion of translation. Dr Horvath demonstrates how neuroscientific principles can be applied in learning and teaching through utilising stories, practical learning activities, and just the right amount of brain science, to guide teachers to understand the *why and how* of the learning process.

The concept of 'learner agency' is predicated on initiative and activity to effect change.

For Genazzano teachers, tried and true classroom activities were viewed through a new evidence-based lens and the way was paved to try out new learning strategies underpinned by solid principles from psychology, education, and neuroscience. The impact of teachers' work in the *Science of Learning* is evident through well over 100 action research projects, but perhaps more profoundly in the sense of enthusiasm and engagement that many teachers expressed over the past few years.

> I have reflected a great deal more when planning for teaching and learning. I feel very motivated as we have a common goal and language to discuss ideas and I am keen to see the impact of strategies on learning — Teacher, Genazzano Professional Learning Survey, 2018

Own your own learning … is teaching study skills enough?

The concept of 'learner agency' is predicated on initiative and activity to effect change, as opposed to the passive receipt of information. A core tenet of Genazzano Institute's philosophy is to support learners to develop agency and a passion for learning through understanding the brain and learning process. Genazzano challenges and supports students to 'own their own learning' and for many years study skills have been taught in classes to foster good learning habits. But is this enough?

In a recent article, Anderson (2021) contends that in order to foster learner agency, educators must not rely on delivery of content, rather we should explicitly and intentionally focus on teaching the processes of learning. This should be done in addition to teaching learning strategies, to enable students to become 'skilful' and 'powerful controllers of their learning.'

With first-hand experience of the influential impact of educational neuroscience on learning, Genazzano teachers saw the sense in equipping students with this information. While this knowledge can be passed onto students organically through classroom activities and discussions about learning principles in class, it was deemed important to offer students this material in a formal, consistent, and explicit way. It was hoped that an introduction to basic neuroscience and the learning process would benefit students in their approach to learning and life.

The Learning Blueprint

At Genazzano, students have their first experience of formal exams in Year 9. These occur mid-year and at the end of the year. For many students the exam process can be perceived as daunting. In the lead up to the mid-year exams, the 2021 cohort had the added weight of the significant educational disruptions of the previous year, with a sudden change to remote learning due to state lockdowns and stress related to the global COVID-19 pandemic. As it happened, Victorian students were again plunged into another lockdown in the week of their 2021 mid-year exams.

The Learning Blueprint program (Horvath, 2020) is designed to educate students about neuroscience so they better understand the learning process and can then identify which study practices are effective and why. This course was delivered to Genazzano Year 9 students over seven sessions leading up to the mid-year exams via a mixture of live and video instruction, supported by workbook questions, reflection, and teacher facilitation. Students learned basic brain anatomy with a focus on the processes of memory, attention, sleep, and importantly, practical strategies to apply this knowledge in the context of study and learning.

Empowered learners

The impact of the program was evaluated by Learning Made Easy (LME) Global and Genazzano Institute, with a focus on recall using pre and post-test data and student surveys to explore student engagement and student enjoyment. Seventy-three students (69 per cent of the

cohort) completed both the pre and post-intervention surveys which provided the LME Global comparison data.

Overwhelmingly, students said they valued and enjoyed this program. Ninety-five per cent of respondents indicated they would recommend it to peers and 100 per cent could elaborate on interesting facts learned. Many students commented on the engaging and interesting content.

> I learnt that to learn information we should put ourselves in uncomfortable situations and make mistakes. This was interesting to me because mistakes are usually seen as a bad thing — Siena

> I thought the brain stayed the same but it actually changes every second —Taylor

Data samples indicated that Genazzano students commenced the program with a strong baseline level of knowledge related to learning, especially in areas such as mindset, human learning capacity, and key learning strategies. As such, it was pleasing to see further gains of an average of 17 per cent in the knowledge of important thinking and learning concepts, and an average of a 42 per cent increase in student ability to identify and explain effective learning strategies based on neuroscience.

FIGURE 1. PRE AND POST PROGRAM INTERVENTION TEST DATA FOR 'CONCEPT KNOWLEDGE' AND 'MINDSET'

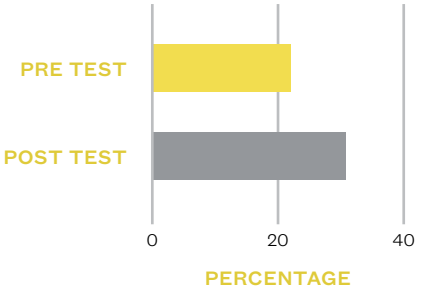

FIGURE 2. PRE AND POST PROGRAM INTERVENTION TEST DATA FOR 'LEARNING STRATEGY KNOWLEDGE'

Significantly, in a follow up survey after the exams, 95 per cent of respondents stated that they implemented one or more study strategies from the The Learning Blueprint course in their exam preparation.

> I used the study break technique ... I think I benefited from it quite a lot, considering once I got into the exams, I could recall almost all the information I had revised — Evelyn

The story behind the facts

While there were many aspects of learning throughout this program, one that seemed to capture the curiosity of students was the prominent theme of 'stories'. Many students commented on different stories or anecdotes from the program that influenced their thinking or learning through the qualitative feedback survey. The power of the narratives in *The Learning Blueprint* — often colourful or shocking, was a clear factor in student engagement, but more importantly, the use of narratives is a fundamental learning strategy for communicating concepts and promoting deep understanding and memory. This is a highly effective technique that has been well understood and used by many cultures for centuries. Students were also fascinated by the notion that our personal *stories* (lived experiences, knowledge, and understandings of the world) shape our perceptions of the world and experiences, our thinking, and the way in which we engage with learning.

> An interesting thing I learnt is that our stories drive our thinking. They influence our reality and even the outcome of things that happen — Charlotte

A different and evolving learning landscape is already here. It is more important than ever to empower and equip learners to own their learning experiences as skilled, confident, and active learners. *The Learning Blueprint* program provided Genazzano students with an opportunity to view learning as an active biological process, which they can influence through deliberate mindset and action. The final word goes to Yen, another Year 9 student.

> Learning about the relationship between the brain, our memories, and learning is interesting and useful. It gave me an understanding of what is actively happening when I am studying, which ultimately provides insight on how to improve efficiency. ▲

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Girl talk

KELLY ALFORD, DIRECTOR OF DURACK COLLEGE, ST MARGARET'S ANGLICAN GIRLS SCHOOL, QUEENSLAND

I began my career in girls' education in the late 1990s. Fresh-faced from the teenage years myself, I entered the education profession focused on opening my students' worlds to the beauty of literature and the science of human movement.

While this combination often raised eyebrows among the purists, I was passionate about literacy and health and couldn't think of a better way to fulfil my interests and share my knowledge. I dived right in and loved it.

For the first ten years of my career, I continued to share my passion and expertise and came to understand how girls ticked. And then something startling happened. Seemingly overnight, I began noticing a disturbing culture emerge. Unhealthy obsessions with academic progress, rising levels of anxiety, and a lowered sense of self began smothering our girls. But why now? Was it that I was a more experienced educator, working primarily in pastoral care roles, which invites closer insight to the woes of teen girls? Had becoming a parent opened my eyes to a different perspective of my students? Potentially. Yet my colleagues were sharing in my concerns. Educational conferences and professional development opportunities were increasing around the topic of 'student wellbeing'. It seemed I was not alone in my observations and concerns.

For a while there was the 'collaborative vs calamitous' debate.

Around this same time, schools were facing another challenge — smartphones. As technology improved, allowing phones to do so much more than make a call or receive an SMS, there were issues with students accessing devices during the school day. For a while there was the 'collaborative vs calamitous' debate. It was argued that smartphones can be a very powerful educational tool. However, often the distraction and misuse of the device caused frustrations for staff. The idea that the smartphone could be held accountable for far more than a sneaky game of 'Tetris' instead of completing the revision questions, was always speculated, but now there is proof.

According to the World Health Organisation (WHO, 2014), mental health is "a state of wellbeing in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" and is an integral and essential component of health. Dr Lisa Damour, American psychologist and recognised 'thought leader', says that except for the summer holiday months, today's teens now, for the first time, feel more stressed than their parents. They also experience the emotional and physical symptoms of chronic tension, such as edginess and fatigue, at levels that we used to see only in adults.

The consequences of teens dealing with the levels of stress that adults are used to is worrying on several levels. A young person does not typically have the experience nor resilience, often developed through adversity, to manage the emotional and physical manifestations of stress. In her book, *Under Pressure*, Damour (2019) says we need to change the way we view stress and anxiety. We need to understand the difference between their healthy and unhealthy forms. If we appreciate that stress and anxiety are mental states essential for human growth and development, we may be able to turn the tide on the mental health crisis tormenting our young people – particularly girls. But how much stress is too much stress? Damour (2019, p. 25) says "stress becomes unhealthy when it exceeds what a person can absorb or benefit from. The volume of manageable hardship differs from person to person and can even differ for a single person from day to day".

Having established that stress and anxiety are more prevalent among students now, than ever before, it's important to unpack the reasons behind why this is so. Let's begin with school and girls' heightened anxiety towards their academic performance. Girls tend to view their grades as a telling sign as to what they can and cannot achieve. They frequently believe that a grade is an absolute judgement on their ability. This puts a lot of pressure on them to excel academically – good grades reinforce their self-worth. When girls doubt and worry about their academics, they habitually find that studying actually soothes their nerves. The more nervous a girl feels, the harder she'll work. The dangerous thing about a hyper-conscientious approach is that it almost always works. As Lisa Damour (2019, p. 145) puts it, "Excessive preparation helps girls quiet their worries

about their academic performance, it consistently yields excellent outcomes that leave them feeling proud, and it earns them praise from their parents and teachers. For students who are motivated by fear, this system is exceedingly effective. Until it become unsustainable".

But why is there so much emphasis on top marks? There is a pervasive belief in our culture that your future 'success' in life has a direct correlation to one's high school grades. It's simple. Top grades get you into the top courses at the top universities, which in turn gets you a top job, earning top money. Everyone knows that professional status and financial gain leads to happiness, don't they? Anything less is, well, less ….

Much has been published about the ugly culture of impossible standards of success for girls and no place is this more prominent than the online world. The drive to achieve is fuelled in part by unhealthy social comparison and competition endorsed on social media. Teens spend most of their day at school — a source of much angst for some girls especially. And they spend a frightening amount of time online — a platform spruiked as a place to connect and communicate — when really, it's a more sinister place.

After a long day at school, girls are turning to social media to construct their 'duplicate persona' online. A girl feels it necessary to "amplify the features of her life to make herself appear prettier, smarter, more accomplished, closer with her friends, happier, and more popular than she really is" (Simmons, 2018, p. 30). It takes no small amount of effort and comes at a huge cost. Few girls get enough sleep. This is touted as likely one of the simplest, yet most powerful, explanations for girls' high levels of anxiety. The connection between sleep loss and anxiety is clear. When we get enough sleep, we can handle most of what life hands us; when we don't, we become frazzled and brittle. Plenty of things keep girls up at night, but none more so than online activity. While the blue light from screens is a known factor in sleep disturbance, it is the content encountered on social media keeping girls up at night.

Rachel Simmons (2018, p. 38), author of *Enough as She Is* says, "the internet is a giant, sprawling petri dish for social comparison: take a girl's feelings that she's not pretty, successful, or social enough, combine it with her inimitable drive to improve herself, then add a relentless stream of others' edited images. It's no wonder girls see social media as a way to establish their life is so much better than yours". A girl's social media brand is yet another highly demanding platform where she is expected to perform, achieve, and compare herself to others. Simmons (2018, p.28) goes on to explain that when "she taps on her phone, she will be likely to visit a visual platform like Snapchat, Instagram, or TikTok, where she will feel pressure to construct a physically flawless, hyper-social digital life through a carefully curated stream of videos and pictures" . Social media is known to put girls on a non-stop roller coaster of emotions, veering from surges of adoration to stomach-clenching lows of exclusion and insecurity. The rush of control, optimism, and even power you get from producing social media can swiftly evaporate while you wait anxiously for a response, or worse, don't get the one you're hoping for.

Dr Jean M Twenge (2017, p. 40), professor of Psychology at San Diego State University, reports in her book iGen that teens who spend more time than average in front of a screen are more likely to be unhappy. She directly blames the arrival of the smartphone for the precipitous decline in teen wellness. Social media invites and promotes incessant 'social comparison' to which girls are particularly prone. What was once private and intangible information — say how many friends you had or where you went and what you did — is now publicly visible online. One can measure and quantify social success by its own metric of likes and followers. It really is another world and extremely treacherous to navigate.

What girls need from parents and educators is not a conversation about what's wrong with social media, but what's wrong with the way many of them use and value it. As Simmons (2018, p. 44) laments, "we can tell girls all day that social media isn't a representation of reality — that it's an illusion crafted by shrewd magicians of their own lives — but until a girl decides that social media can't be the barometer of her own self-worth, very little will change".

Both Damour and Simmons agree that our current culture holds girls and young women to unfair and unwavering expectations. Despite the overwhelming 'success' girls are experiencing, they have never struggled more. Simmons (2019, p. 173) believes we have "failed to cut loose our most retrograde standards of female success and replace them with something more progressive. Instead, we've shoved more and more expectation onto the already robust pile of qualities we expect girls to possess". Recognising these irrational standards to which girls are held is the first step in addressing them. From here we need to work on letting our girls know that they are, in fact, enough as they are. ▲

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Robust flexibility

KATE MANNERS, DIRECTOR OF STRATEGIC INITIATIVES, AND KATH WOOLCOCK, DEPUTY HEAD OF SENIOR SCHOOL – STUDENT WELLBEING, CAMBERWELL GIRLS GRAMMAR SCHOOL, VICTORIA

Depending on who you ask, whether student, teacher, parent, or politician, you are likely to garner dozens of explanations about the purpose of school.

The purpose of school

As educators, 'The purpose of school' is a statement that must be considered through the contextual lens in which we operate. Different schools serve different communities and therefore, how they define and deliver their purpose reflects these things. However, as the ripple effect of COVID-19 continues throughout the globe, a pattern has emerged across all schools, regardless of their operational contexts.

Extended periods of lockdown in Victoria during 2020 have seen schools reinforced as the reassuring constant in the lives of students, families, and more broadly, communities. Without doubt, it was schools that set the standard of how to pivot complex ecosystems for learning and work. Consistently doing this in response to information first shared in media press conferences, they became, and continue to be, adept at developing plans and contingencies for the most nuanced of circumstances and settings.

When schools can absorb and be responsive to change, so too can communities.

Schools triaged the fears of, not only students, but anxious families and extended home communities. It was schools that navigated, the at times, devastating financial consequences of furloughed jobs and fractured businesses. It was schools that scaffolded students and their families to absorb the challenges of the time, but also to look forward with optimism to what lay ahead. Their robust flexibility has meant that the metronome of academic, social, and wellbeing learning and work, whether onsite or offsite, has never missed a beat.

It must be acknowledged then, that one of the panaceas to pervasive uncertainty, is how schools do their work. They are in many ways the cultural pulse of society. When schools function well, society functions well. When schools can absorb and be responsive to change, so too can communities.

The purpose of school … now

Global conditions since early 2020 have been characterised by what has become known as the VUCA definition, that is, today's world is more volatile, uncertain, complex, and ambiguous than it has ever been before. Universally, the pandemic experience has changed how we live our lives.

The University of Sydney Business School's Institute of Transport and Logistics Studies (ITLS) expects to see working from home figures to rise by 25 – 30 per cent compared to pre COVID-19 levels (Beck & Hensher, 2020). Earlier this year we saw the announcement by Atlassian, one of Australia's most successful and dynamic companies, of a move to a 'Team Anywhere' policy for their 5,700 global employees, which will see them required to come into the office only four days per year.

This change has also extended to the tertiary setting where there is a sustained trend to adopt blended-learning programs, and there is now a hybrid of onsite and online learning taking place in courses (Croucher et al., 2020). Although a direct response to pandemic restrictions, the economical and logistical benefits of this learning design for these large institutions is clear (Price Waterhouse Coopers, 2020). Moreover, innovation and investment in video conferencing platforms as universities reimagine the experience of lectures and seminars online, has transformed the way they are delivering post-school pathways.

In acknowledging these post-school and societal trends, we must also accept that how we connect with each other, how we work, how we learn, and indeed all aspects of our lives, have not just been temporarily impacted but permanently changed.

Thus, if schools are the cultural pulse of society, it must be a priority to equip students with the necessary skills to navigate, and more importantly absorb and thrive, amid these changes and recognise them, not as a temporary shift in practice, but a social evolution. The development of agility and tenacity in the way that students learn and understand the transition into tertiary studies and work is therefore essential for a post COVID-19 world.

Camberwell Girls Grammar School (CGGS) has looked to embrace the opportunity to build on the learnings and successes of 2020 to nurture this robustness. To facilitate this, we have explored, and continue to explore, how we can use time and resources differently and creatively. Forefront in our thinking is the world that we are preparing our students to transition into, whatever their chosen future pathway.

Like all schools, the challenge has been to do this in a way which is efficient, purposeful, and sustainable for our whole community. The design and creation of Upskill … BY DESIGN, is one such initiative that has emerged for CGGS.

Designing for the purpose of school

In response to feedback about various school programs that were adjusted to suit the changed conditions of 2020, the Upskill … BY DESIGN program combines online learning conversations, seasonal, pop-up learning opportunities, and wellbeing time in a hybrid design.

CGGS's own teaching and learning design principles, which are informed by the Organisation for Economic Co-operation and Development (OECD) 2030 Future of Education and Skills project (OECD, 2021), seek to add value, make sense of things, take responsibility, and practise wellbeing. Collectively, it is these principles which invited the opportunity to reimagine what we already had in place operationally, enhancing it to align with what really matters now, for our students, teachers, and parents.

Conscious that we did not wish to add to an already full calendar of events, but also seeing the very real need to prepare our students to respond to a world that will continue to be highly "digital, visual, mobile, social, and global" (Renton et al., 2020, p.5), it was clear that by embedding technology into program design we could provide avenues of learning that weren't previously possible (Williams, 2016). Feedback from our whole school community was overwhelmingly positive about the switch to our remote-learning program, granting both a segue and permission to explore this opportunity.

The characteristics that we want to cultivate and grow are those that make up our DNA — connection, growth, grit and sustainability.

In the design of our remote-learning program we intentionally embedded self-care practices through wellbeing days. Teacher wellbeing, school wellbeing, and student wellbeing are inextricably linked (Waters, 2017), so addressing stakeholder wellbeing was a significant factor in the initial design stage of the Upskill … BY DESIGN program.

Consequently, dedicated wellbeing time for our whole school community, that is, students, teachers, and parents is an important feature.

Added to this, our community continues to demonstrate an ongoing appetite to develop what most would colloquially recognise as life skills. At CGGS the micro-credentialling of these is a priority, as is the transferable skills that sit alongside them. Enhancing the value of life skills and amplifying their use in a wider context has been an important part of the design brief, enabling students to develop depth in their skill portfolio, which is essential to lifelong learners, who will transition from school to the wider world.

As a result, three stakeholder objectives crystallised. For parents, the overarching purpose of the Upskill … BY DESIGN program is to provide greater flexibility and accessibility to attend learning conversations, recognising the growing complexity of location and work commitments during and after COVID-19. Similarly for staff, the program seeks to enable participation in learning conversations in a more sustainable and flexible way. For students, Upskill … BY DESIGN intends to provide innovative and authentic learning experiences geared at developing the behaviours, mindsets, and skills of students to be adaptive in the way they work going forward.

Additionally, for CGGS, investing in the personal and collective wellbeing of our school community is a priority. We recognise that in building, developing, and embedding

wellbeing practices into all key programs such as Upskill … BY DESIGN for students and staff alike, there is likely to be a direct impact on student academic outcomes and achievements (Nobel et al., 2015). This again aligns closely with our teaching and learning framework, where wellbeing is part of our DNA and the fabric of what we do.

CGGS appreciates that effective wellbeing practice requires an integrated and multi-dimensional approach linking culture, pedagogy, and practice (Nobel et al., 2015). Students, staff, and parents see wellbeing as visible and purposeful, recognising the role that an intentional focus on wellbeing has in each of our lives. This involves providing students with meaningful opportunities to develop self-regulation and self-awareness, and more significantly, the capacity to draw upon these to navigate and respond to challenges. Turning theory into action, Upskill … BY DESIGN seeks to provide opportunities for students to develop the skills and resources to be buoyant and resilient, both now and in the future.

What does it look like?

The name of the program Upskill … BY DESIGN recognises that to 'upskill' means to expand your skills and capabilities. As we do this, we grow and encourage the characteristics that enable us to thrive in our lives. At CGGS, the characteristics that we want to cultivate and grow are those that make up our DNA — connection, growth, grit and sustainability.

When we Upskill … BY DESIGN, we use our existing knowledge and transferable skills and apply these to new situations. Therefore, we're able to intentionally develop new knowledge and transferrable skills and improve those that we currently have. This includes the practice of wellbeing alongside a specific and individualised year-level program.

Each year level from 7 – 12 has a bespoke program, aligning with the relevant year level spotlight from our teaching and learning architecture, providing inspiration and the sequential theme. The design of the program recognises the growing independence, learner agency, self-efficacy, and self-regulation of students as they get older, and the need to apprentice younger students into these behaviours and routines. While an initial scope and sequence of the entire program was designed, this planning has been intentionally flexible, to adjust and absorb opportunities that might arise during the year.

Students undertake the program either onsite or offsite according to their year level. If a year level is involved in Learning Conversations, the program is flexibly designed to enable students to participate in these, regardless of their location.

Wellbeing in the Upskill … BY DESIGN program is characterised by a range of activities which are open to the entire CGGS community in a shared block of time in the afternoon. Activities are designed to revive, refocus,

IMAGE: BY DESIGN YEAR LEVEL SPOT LIGHTS

recalibrate, and reconnect participants across the three domains of wellbeing — Mind, Body, and Soul. For CGGS, wellbeing is characterised by a sense of resilience, purpose, engagement, and optimism about the future, and we understand that this must be fostered in different ways for different people.

Structurally, Upskill … BY DESIGN runs parallel to our Learning Conversations, which all moved online this year. Learning Conversations are spread over the entire day, occurring in dedicated blocks of time. While break times are fixed, these blocks range in length from 45 minutes to two and a half hours, the latter being the whole school, extended block of wellbeing time.

This is an intentional change from the previous structure of Learning Conversations, which were identified through staff feedback as chaotic, rushed, and exhausting. In the revised design, staff can conduct their conversations from home, without the pressure and stress of teaching a concertinaed-class program, and then rushing to a full schedule of conversations. The new model priorities wellbeing, as much as it does more personalised and meaningful conversations for everyone involved.

Staff not involved in Learning Conversations, support the delivery of the Upskill … BY DESIGN program, in either a supervisory, facilitator, or design capacity.

Purpose in action

Throughout 2021, the Upskill … BY DESIGN program has encompassed the delivery of accredited and non-accredited short courses, co-curricular experiences, and other seasonal and pop-up learning opportunities for all

year levels. These are designed and led primarily, though not exclusively, by our staff.

We have empowered our Year 9 MITS (Melbourne Indigenous Transition School) alumni to design and lead an Upskill … BY DESIGN workshop on 'Deadly Learning' for our Year 8 students. The program for this day amplified the natural symmetry of the year-level spotlight of Identity, with the intentional development of activities that would provide students with a deeper understanding of the importance of keeping Aboriginal culture alive and their important roles as allies in this.

The OECD 2030 Future of Education and Skills project identified the wellbeing of society as a shared destination for the individual and the collective.

Our Year 10s already undertake a financial-literacy program and extending this through their learning spotlight of Exploring, was achieved through a specific analysis of financial intelligence for women. Recent media scrutiny of gender inequality provided the impetus for this pop-up learning experience in the Upskill program and sought to position our students to understand the need for women to be empowered to pursue and sustain financial independence. We utilised online learning resources from the Sydney Women's Fund and their series Women's Work and partnered with a local female enterprise, 'Bloom Capital', and its founder and CEO Rachel Farrell, to present in real time. The hybrid structure balanced accountability for students through required submission of proof point tasks, with flexibility to undertake these, when it suited them.

Years 11 and 12 students, whose learning spotlights are Independence and Connection & Opportunity respectively, are invited to undertake accredited short courses on these days, engage with asynchronous learning that may be provided by their teachers, or use their time for learning consolidation and preparation. Whether they're building their Barista skills or undertaking a course in self-defence, these students make decisions regarding their individual program according to their needs.

Across all year levels, students can achieve CGGS micro-credentials, certifying their achievements in specific skills or capabilities that can then contribute to their digital portfolio. For example, all students will be offered the opportunity to complete an online graphic recording credential as part of the Upskill … BY DESIGN program, a qualification that can then be shared with employers, industry, and tertiary institutions. We've partnered with a CGGS alumni, Jessemy Gee and her business 'Think In Colour', to offer this to every year level, and this now forms part of our personalised, professional learning suite for staff too.

In our shared wellbeing time, curated activities cater for a range of interests and needs. The OECD 2030 Future of Education and Skills project identified the wellbeing of society as a shared destination for the individual and the collective. Therefore, valuing wellbeing through providing designated time for the whole CGGS community in the Upskill … BY DESIGN program is intentional. Choice and agency in the practise of wellbeing, is an essential part of building robust flexibility in mind, body, and soul. Mindfulness, strength and conditioning, self-defence, and random acts of kindness, are examples of some of the experiences that have been provided.

Did it work?

At the time of writing, we are two-thirds of the way through the first iteration of the Upskill … BY DESIGN program. We know though, that this is only the start of the journey. Like all CGGS programs and initiatives, Upskill … BY DESIGN will go through a rigorous evaluation process. Anecdotal feedback thus far has seen us tweak aspects of the program design, communication, and delivery, but there is still more to come as we look to deliver and stretch our stakeholder objectives.

The intended impact of this evaluation will be to gather qualitative and quantitative data to determine the success of the program for parents, teachers, and students. The data gathered will be used to make decisions that will improve the program's efficiency and effectiveness going forward, while identifying potential assumptions and barriers to success. The evaluation will also serve as an avenue to explore opportunities for program growth in the future.

In seeking feedback, our intention is always to do better. When we initially conceived this project, designed, and then delivered the first iteration, we did so knowing that it wasn't going to be perfect but it was going to be purposeful.

While the initiative in principle is well supported by staff, students, and parents, the pace at which it was rolled out has given us cause for reflection. Delaying the initiative in the hope of an eventual return to normal was ultimately a flawed strategy. Had we waited another year, we risked two things — losing the traction and growth that 2020 had brought about for all in our school community and retreating to the hopeful nostalgia of the way things used to be, only to be disappointed as the need to pivot once again occurs.

Quantitative data will be the measures of our success. Attendance at Learning Conversations by families and parents, the uptake of accredited short courses by our Victorian Certificate of Education students, and student attendance data for each Upskill … BY DESIGN day will

all contribute to our evaluation. Already short-term anecdotal feedback from students, staff, and parents has provided some indication that we are achieving our stakeholder objectives, but more data will come from long term satisfaction surveys and focus groups at each year level. These interviews, feedback, and stories will inform and provide clarity around the challenges and opportunities that we will look to address in our next design iteration.

What to next?

Ensuring that our students develop essential skills and capabilities, alongside the characteristics that enable them to thrive in these 'new' settings needs to be a part of all learning design. Upskill … BY DESIGN gives us the flexibility to do this in a way that is more intensive than we would achieve when constrained by the daily operational structures of a regular school day.

Schools are the epicentre in the lives of students, their parents, and the wider community (Lonsdale et al., 2012), and this means that they need to be dynamic communities willing to respond to the future. While we're only in the first iteration of this program, we've started a journey to provide opportunities for our students to explore and operate in spaces that reflect the future, not just the now. While this creatively carved out space has its origins in the responses taken to learning and working in a pandemic world, we are by no means encumbered by these. The opposite has occurred, and we're excited to look to the future potential the program offers.

Our hybrid approach to this iteration of the Upskill … BY DESIGN model has enabled the facilitation of onsite and online programs simultaneously, though whether this becomes the status quo moving forward is something that we will explore. Also, on our horizon is whether Learning Conversations remain as they are, organised by year level. We're wondering if there might be a better way to do these, perhaps by department, thereby freeing up collaborative planning time and the opportunity for departmental upskilling in credentials relevant to their disciplines.

Student voice will also be an area that we look to amplify moving forward. A collaborative dialogue among our alumni, with firsthand experience of the very tangible and dynamic skills required in the transition to post-school pathways, will be a substantial part of our discussions and resulting actions.

Whatever happens, our intention remains clear. At CGGS, our obligation is to prepare our students to learn and work in settings that are responsive to now, as much as they are anticipatory of the future. In setting in motion Upskill … BY DESIGN we are building upon the work that is already happening through our teaching, learning, and wellbeing programs, and simultaneously working in service to meet the operational requirements accompanying the delivery of these. ▲

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More than an ‘add on’: How a co-curricular ethos can enhance educational outcomes

JODIE JURGS, HEAD OF THE ARTS, IPSWICH GIRLS’ GRAMMAR SCHOOL, QUEENSLAND

As tertiary institutions increase fees for Arts degrees and QTAC scales subjects to disappointing lows, it seems that the debate around the value of the Arts has re-emerged, as students are led towards more lucrative career prospects.

But, since when is success driven by a dollar amount, and why is this outcome a driving factor in education? How about a broad, liberal education that strives for enduring relevance through a focus on happiness, compassion, creativity, and collaboration? Student engagement in co-curricular pursuits does more than strengthen talents and discover new areas of passion — it develops critical life and leadership skills and inspires contribution to a greater purpose. This article aims to initiate a conversation about the immense power the Arts have in shaping our girls to become confident, well-educated young leaders, and how we as schools can better promote and celebrate student engagement in co-curricular pursuits for the diverse and valuable range of 21st century skills they inspire.

Preparing students for the new global economy

Leading research into Arts Education is widely published, acknowledging how the Arts improve both attention and cognition. The “Mozart Effect” has been widely acknowledged for its brain boosting powers. However, despite copious studies, the Arts are often victim to a decline in student numbers from middle to senior school as students opt for ‘better performing (ATAR) subjects’ (White, 2019). There still exists this social and cultural pressure to pursue ‘more serious’ subjects, more acclaimed jobs. So how do we as educators go beyond the aesthetic value derived from the Arts to promote their immense power to actively prepare students for the 21st century workforce? For their capacity to foster the enduring life skills required to succeed in a changing world and drive social change? Furthermore, how can we promote student engagement in a wide range of co-curricular pursuits, and celebrate these successes as an educational community?

Ultimately, it must be realised that the measurement of a human being cannot, and should not, be limited to assessment outcomes. We must shift our mindset from individual learning areas, to view skill development as wholistic to the growth of every learner. This focus on building student capacity across the general capabilities is necessary to best prepare our learners for the new global economy. A school’s robust co-curricular program empowers students to be resilient, strengthens their minds and bodies, and develops the grit and determination required for success. Co-curricular engagement affords students the opportunity to select and try out a range of ideas, identities, and interests, promoting personal transformation. The design of co-curriculum programs fosters these learning and innovation skills. They provide a great model to apply new pedagogical approaches to co-curricular programs that shine a spotlight on the development of 21st century skills.

Curriculum beyond content

Students typically study the Arts because they enjoy them, not necessarily because they want to pursue a career in the field. In fact, students flock towards co-curricular engagement in general, covering activities such as debating, sports, and service learning as an opportunity to build friendships and networks that challenge them, as part of a team, to achieve shared goals and outcomes. This intrinsic drive to do well at something that they love allows educators to tap into a strengths-based approach and empower students to push the boundaries of possibility, supporting their physical, mental, and social wellbeing. In establishing safe learning environments, students are encouraged to use their interests and strengths to contribute to a greater purpose. It is this culture that students are attracted to as members of a larger community. The heightened endorphins and emotional responses learners gain from such connections positively arms our girls against the ever-growing mental health problems of society.

If a student is emotionally well then, they will be a lot more educationally well. Herein lies an opportunity for all educators — in framing learning through a co-curricular ethos. If we want to provide our future leaders with the opportunity to make an impact on the world around them, we need to enrich our practice and frame units of work with skills and capabilities that transcend individual subjects. This theme repositions the Arts in relation to developing applied skills such as innovation, communication, and critical thinking, and not just as an aesthetic; sport beyond skills to establish teambuilding, self-direction, and collaboration; service as ethics and diversity. Too often we, as an educational system, focus on the aesthetic value of the Arts, and the cultural and social value of such activities is overlooked.

Education is transformational, and it is the work of schools to provide programs and opportunities that challenge students' understanding of themselves and the world.

So how do we blend the domains of learning to create programs that balance guiding syllabi, student interest, and cognitive demand, while supporting them to achieve academic success? How do we ensure schooling systems develop a sense of belonging engendered by a community of shared beliefs, while fostering 21st century skills?

The brain is curious, thus as educators we must provide opportunities, structures, and experiences that will feed the brain more than content. It is widely known that students are currently preparing for future jobs that do not yet exist. In a highly competitive world, top exit scores will not be enough; students need a broader range of cultivated skills to succeed in a modern society. Given that this generation are likely to experience several professions in their lifetime, we must shift the focus away from direct career pathways and ATAR scores to the skills and experiences that will inspire students for future success. To achieve this, we must be actively teaching and assessing critical thinking, creativity, and collaboration, and acknowledge that co-curricular programs are champions for this. The very nature of their activity places equal value on process and outcome, embedding knowledge and innovation into daily practice. Just as all subjects have a curriculum to follow with an inherent sequence of how students accumulate knowledge and skills, so too must we develop and monitor 21st century skills and ensure alignment across curriculum, assessment, and pedagogy.

The Australian Council for Educational Research (ACER) and Centre for Assessment Reform and Innovation (CARI) have published an evidence-based approach to skill development for the new Global Economy, recognising the integration of 21st century skills across the curriculum as one of the five key challenges Australian schools currently face. ACER's combination of skill development frameworks, levels of skill development, and curriculum-orientated assessment and teaching

tools aim to empower teachers to measure and monitor these skills in their classroom, and better develop general capabilities, reinforcing the partnership between the 21st century skills and success.

Given that there is a huge mismatch between the activities students choose to engage in through co-curricular pursuits and curriculum content, perhaps this framework is the starting point to explore activities such as debating, Arts, service, and sport as more than an 'add on' and rather investigate how the enduring life skills promoted by co-curricular programs can be used within the classroom to further enhance student engagement and educational outcomes.

Conclusion

Education is transformational, and it is the work of schools to provide programs and opportunities that challenge students' understanding of themselves and the world. Every activity in school life plays a significant role in the development of students. When the culture of student engagement is positively reinforced through co-curricular involvement, students develop the skills to stand out from the crowd in competitive selection processes. The fundamental change here is that we as an education system must acknowledge the centrality of these 21st century skills as an indicator of success and happiness to best prepare our learners for the future.

A future that … needs people who are adaptable, flexible, agile, empathetic, intelligent and responsible. People who are reflective thinkers-in action, who will understand the complexities of working co-operatively and collaboratively, and whose sources of satisfaction and measures of success will be different from what we value today (Morgan & Saxton, p. 234). ▲

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IMAGE:STUDENTS WORK TOGETHER TO DEVELOP POSITIVE COPING STRATEGIES IN A CREW SESSION

Mental health strategy

LIANA GOOCH, DEPUTY PRINCIPAL, KOROWA ANGLICAN GIRLS' SCHOOL, VICTORIA

Louka Parry indicates that according to the World Health Organisation "... the biggest global health burden by 2025 will be mental health." (Yiannouka and Parry, 2019).

Foresight

It is remarkable to consider the high degree of resilience, flexibility, and energy drawn upon by students, staff, and our wider Korowa community to deal with the challenges of a COVID-19 world in 2020. The effects of responding to this ongoing emergency continue to be felt. In 2020, Mental Health constituted one of the three most important issues and personal concerns for young people in Australia (Mission Australia, 2020). However, even before the advent of COVID-19, the development of a Mental Health Strategy was already on Korowa's agenda, particularly with alarming Australian youth mental-health statistics. Data from a study by the Murdoch Children's Research Institute in Melbourne between 2008 and 2015, identified a tripling of mental health presentations for children aged 10 – 14 and 15 – 19 years.

During 2020, there was significant upheaval in life and school for students due to COVID-19 which exacerbated the mental-health challenges of young people. The Headspace National Youth Mental Health Survey 2020 registered a decline in the ability of 12 – 14-year-old girls to cope with daily life stressors (Headspace, 2020). As students and staff emerged from the 112-day Victorian lockdown to begin the return to face-to-face learning, Korowa had already begun shaping our Mental Health Strategy, to support our students and staff to continue to thrive academically, emotionally, and socially.

Coping with trauma

Korowa's wellbeing team (comprised of our school Psychologist, Counsellor, and Chaplain), drew upon the research of Professor Helen Cahill, the Director of the Youth Research Centre, and the Deputy Dean, from the Melbourne Graduate School of Education (MGSE) at the University of Melbourne. Professor Cahill is a renowned innovator of Australian school-based wellbeing interventions addressing mental health, social, and emotional learning (SEL), resilience, gender education, and drug education. Cahill's research has highlighted that for many children, a world experiencing COVID-19 is similar to a war zone. The trauma experienced will see most children recover; but for others an array of mental-health issues may emerge. After experiencing a public health crisis or recession, young people are at a higher risk of developing mental-health conditions, such as anxiety, depression, and post-traumatic stress disorder, and are at a higher risk of self-harm and suicide (de Miranda et al., 2020; Duan et al., 2020; Qi et al., 2020). According to Cahill and her colleagues (2020), "Schools can make a major contribution to the prevention of mental health problems and to the promotion of resilience post emergency".

The Korowa Mental Health Strategy 2021-2023 (2021, Figure 1) has also been influenced by research related to social-emotional learning (SEL) with its emphasis upon the important role of character and its acknowledgement that wellbeing and academic learning are complimentary to each other. We have also applied Louka Parry's work in the field of SEL as part of the implementation of the strategy in the classroom. A strong understanding of self and strength-based conversations are considered important to reduce anxiety. Research has shown the benefits of implementing social and emotional strategies following ongoing conflict-related emergencies, and has emphasised that such strategies '… can help reduce the mental health effects of the emergency, and reduce rates of depression, anxiety, and post-traumatic stress disorder' (Cahill, 2020).

A whole community approach for the Korowa context

The Korowa Mental Health Strategy's intention is to enable the prevention of, and early intervention in, wellbeing and mental-health issues of students. It has been designed to engage and support the whole community — staff, students, and parents. The metaphor of a growing tree represents our strategy's key elements in the form of a framework designed specifically for the Korowa context. The tree roots ground us and acknowledge the core values which inform our decision making, and our commitment to embedding SEL into all we do to foster social, emotional, and cognitive development, as we develop people of good character. With an emphasis upon positive growth, the branches and leaves constitute evidence-based coping strategies, which are implemented to enhance wellbeing through self-care and positive health practices, and meaningful community connections.

The branches of the strategy complement each other and are considered of equal importance. Connectedness revolves around the importance of belonging within a community. Ceremonies anchor our community and reconnecting with one another was important following a return to school. We also recognise the important role that kindness (both for self and others) has and continues to play in each individual's self-care and response to stressful situations. Self-Care and Health Practices are providing an array of positive coping strategies pivotal to reducing or dealing with stress. We cannot underestimate the stability afforded by the daily routines we may take for granted. As Dr Jena Lee, medical director of paediatric consultation/liaison and emergency psychiatry at David Geffen School of Medicine at University of California, Los Angeles indicated, "Daily structure is important to everyone, but particularly to children in their psychological and emotional development. The consistency of schedules, predictable rules and consequences, and set expectations teach children how to behave, develop self-discipline and impulse control and, importantly, a sense of safety and control" (Gramigna, 2020).

How are we implementing the strategy?

Louka Parry referred to the fact that we find ourselves existing amid a pandemic in a VUCAH world — volatile, uncertain, chaotic, complex, ambiguous, and hyper-connected (Parry, 2020). Understanding the complexities and challenges arising from the pandemic event, its ongoing impact upon students, as well as the role of potential positive-coping strategies, was an initial starting point to inform and upskill our staff, teachers, and students in the associated research and coping strategies to build ongoing resilience. A cornerstone of this strategy is social-emotional learning, which was emphasised as essential to be embedded in our classrooms because "Only an integrated social, emotional and cognitive understanding will create an experience that enables children and youth to grow and thrive as young people" (Parry, 2020).

In 2021, our community are learning about and integrating the strategy in a variety of ways. Korowa has drawn upon the expertise of Professor Cahill and Louka Parry, so staff acquire an understanding of the ongoing mental-health challenges and needs of girls in a COVID-19 world, along with the associated social-emotional learning approaches and coping strategies. Through the internal expertise of our wellbeing team, staff have continued to unpack the categories of coping strategies into practical actions that can be delivered through different vehicles including classroom activities, our Circle/Community/Crew classes, co-curricular activities, and assemblies.

KOROWA
ANGLICAN GIRLS' SCHOOL

Korowa's MENTAL HEALTH STRATEGY

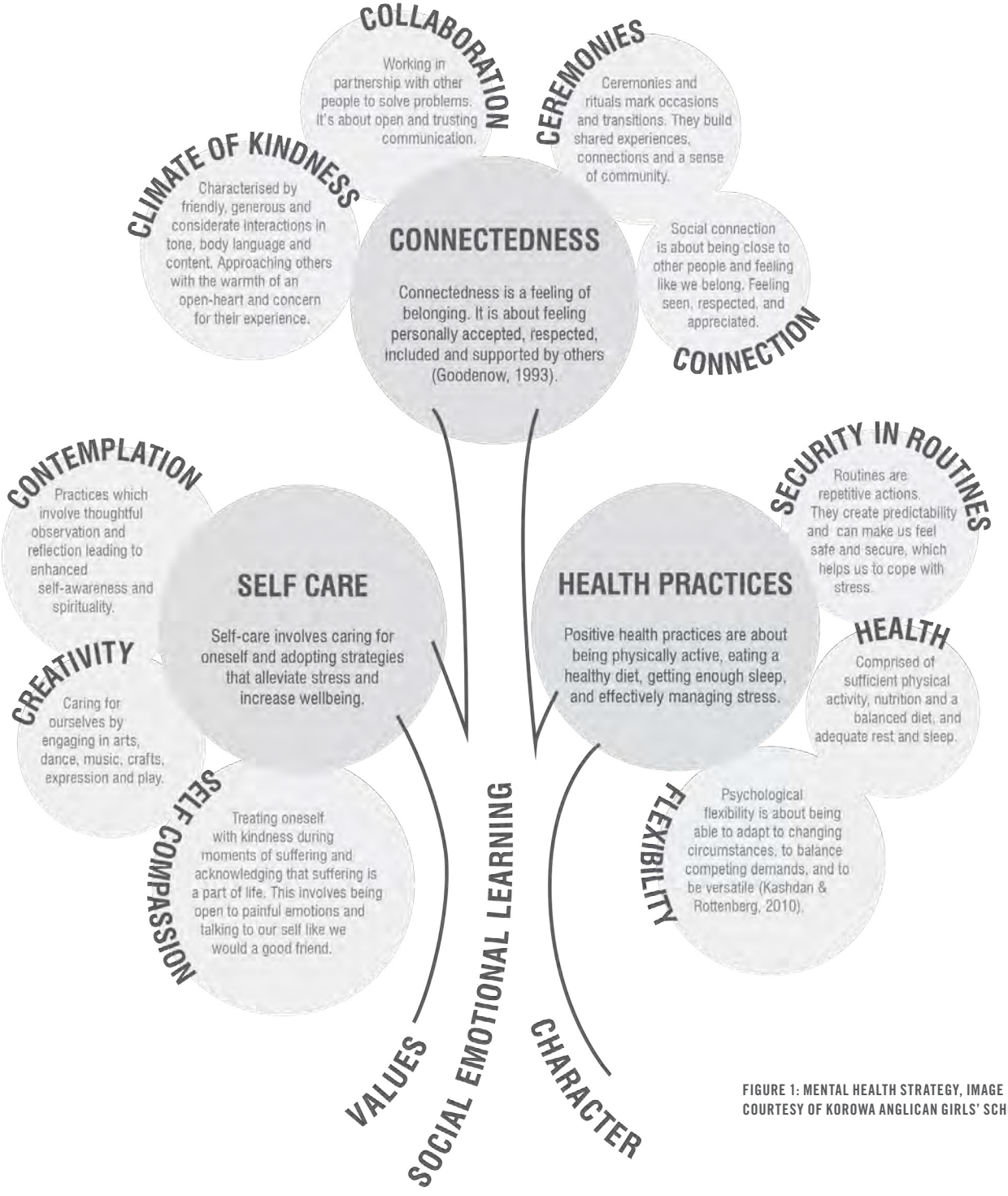

FIGURE 1: MENTAL HEALTH STRATEGY, IMAGE COURTESY OF KOROWA ANGLICAN GIRLS' SCHOOL

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Empowering students to support both themselves and others is an important feature of the Korowa Mental Health Strategy. Providing students with language to articulate their emotions is essential. Students in the Junior School are working with an intervention known as RULER — which originates from the work of lead developer Marc Brackett and other staff at the Yale Centre for Emotional Learning. "RULER teaches emotional intelligence skills — those associated with recognising, understanding, labelling, expressing, and regulating emotions" (Lee & Moore, 2020). Students in Year 6 are taking up the role as trained 'Support Sisters' who are able to offer simple care and support to students in the playground. Student leaders are sharing the strategy's common mental-health language and strategies with the student body. Year 7 and 8 students are working with mindful kits to implement self-care routines.

This year, we also have a group of teachers who are undertaking further tertiary studies or professional development in the field of support for youth mental health.

Korowa acknowledges the important role that parents, staff, and students play in a partnership to effectively support the wellbeing and academic growth of students. Our Pop-Up Parenting Program provides a unique level of access to our school community to outstanding experts from various fields. A prominent theme in 2021 has been mental health. The intention is to equip our parents and staff with the necessary research and strategies to support students. Our speakers have included Professor Helen Cahill, Dr Louisa Hoey, a clinical psychologist who is an expert in the field of body image, and Dr Mark Cross, a psychiatrist who has first-hand experience with anxiety, and the author of 'Changing Minds' and the recent book 'Anxiety'. Topics have included understanding how to support your child during the ongoing pandemic, promoting positive body image, and dealing with anxiety.

An evidence-based approach

A strong evidence-based approach has informed, and will continue to inform, Korowa's decision making related to our Mental Health Strategy. Data gleaned from our involvement in external surveys, such as that of Mission Australia, allowed us to identify how our student wellbeing is tracking and will enable us to measure progress of the initiatives implemented in relation to the Mental Health Strategy. Empowering our students to take ownership of tracking their own wellbeing and implementation of positive coping strategies has been enabled by Korowa curating its own wellbeing dashboard. Students can track their healthy routines and self-care, while also setting goals each term for a range of coping strategies. This evidence-based approach will allow our students and staff to identify suitable interventions, focus upon deliberate practice, track the progress of routines, and engage in discussions around wellbeing and learning.

We envisage that as we implement the Korowa Mental Health Strategy, and collect and track associated data, it will continue to evolve in its delivery, as will the design of the dashboard to suit the future needs of our students. ▲

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Future problem solvers

KATE FREWIN, ASSISTANT HEAD OF PRIMARY SCHOOL – CURRICULUM, ST MARGARET'S ANGLICAN GIRLS SCHOOL, QUEENSLAND

Globally, the highest performing students in Science, Technology, Engineering and Mathematics (STEM) are also the least represented in STEM career fields by a startling margin.

A recent meta-analysis of more than 200 individual studies from around the world revealed that girls outperformed boys at all ages. The study showed that girls earned 7.8 per cent higher average grades than boys across non-STEM subjects, and although the margin narrowed across STEM subjects, girls still maintained a higher average grade than boys. The analysis also considered various factors for gender gaps across the distribution and found that gender representation in the top 10 per cent of students within a STEM subject was equal (O'Dea et al., 2018). With the meta-analysis eliminating a higher representation of boys at the top of academic performance as a causal factor, questions need to be asked about the leading causes for the gender gap for girls enrolling in undergraduate courses and going on to pursue STEM careers.

The STEM Equity Monitor, an Australian data report on girls in STEM, reports the current state of STEM gender equity in Australia (Department of Industry, Science, Energy and Resources, 2021):

- Since 2015, the proportion of women enrolled in university STEM fields of education has increased by two per cent. This reached 36 per cent in 2019 (more than 81,000 women), up from 34 per cent in 2015 (70,000 women).
- The proportion of women working across all STEM-qualified industries has continually increased from 24 per cent in 2016 to 28 per cent in 2020.

Centuries-old gender-based stereotypes have had lasting impacts on engagement in STEM. Despite males and females demonstrating equal proficiency, perceptions that men possess more agentic qualities than women continue to be present in society. In recent studies, when asked to draw a mathematician or scientist, girls were twice as likely to draw a man as they were to draw a woman. Gender-based stereotypes seen in the media continue to under-represent women in STEM and instead focus on their roles as wives and mothers (Chimba & Kitzinger, 2010). These misrepresentations have lasting negative impacts on girls' perceptions of themselves in STEM pathways.

Further compounding the problem is a lack of diverse female role models. Statistics show that the presence of a STEM female role model has proven to substantially influence girls' decisions to pursue STEM

beyond secondary education. For girls, female role models have proven to have a positive impact on perceptions of themselves in all STEM subjects. Research indicates that, on average, positive STEM female role models have resulted in a 12 per cent increase in female participation in STEM subjects across all fields.

Role models not only assist girls in seeing themselves in those fields, but they greatly increase both their interest and passion for the subjects. The number of girls interested in STEM almost doubles when they have female role models compared to those who do not (26 per cent of girls without a role model report an interest in STEM subjects, versus 41 per cent with role models) (Microsoft, 2018). Programs such as Australia's Superstars of STEM aim to build the public profile of women employed in STEM, smash society's gender assumptions about scientists and increase the public visibility of women in STEM.

A contemporary understanding of modern STEM professionals and career contexts is long overdue. Shifting perceptions of what it means to be a scientist or a mathematician and developing a broader understanding of the contexts in which they work, are required. Positively, studies that address stereotypes and science suggest that perceptions of successful scientists are likely to change as more women enter those fields. Shifting stereotypes about scientists, to a less idealised and more balanced set of traits, may ultimately help facilitate increased interest in STEM careers for both women and men (Carli et al., 2016).

While there is no simple fix to resolve the continued underrepresentation of girls in STEM, there is a lot that can be done to encourage girls to enter and stay in STEM fields (Reinking, & Martin, 2018). The shift has begun, and St Margaret's Anglican Girls School is ensuring its girls are afforded opportunity to develop a deep passion for STEM from an early age. From Pre-Prep, students participate in dedicated STEM lessons helping them to understand that mathematics and science are tools to solve problems.

Integral to St Margaret's prioritisation of STEM in the primary years has been the development of Atelier, a flexible workshop-style space that features the newest educational technologies. These learning contexts foster students' curiosity and encourage exploration through a range of design thinking and problem-solving opportunities. It is a commitment that fulfils the school's mission to prepare confident, capable women able to contribute in a global community.

The focus on hands-on learning with real-world applications and project-based learning opportunities ensures the development of essential future-focused skills including innovation, problem solving, design thinking, leadership, decision making, and entrepreneurship.

The learning experiences provide opportunities for students to develop knowledge and appreciation of real world, global challenges. As an example, students in Year 3 are learning what goes into successfully designing, building, launching, and landing a rover on Mars while taking advice from the female scientists and engineers who have worked on NASA's Perseverance Mars rover mission. Students in Year 6 are participating in 'Solve the 17' as they collaborate to discover, define, develop, and deliver a unique solution to a global issue in relation to one of the 17 United Nations Sustainable Development Goals (UN Department of Economic and Social Affairs, 2015).

In addition to STEM in the curriculum, a number of partnerships and programs help deepen dispositions and knowledge in STEM fields including The Academy for Enterprising Girls, Code Camp, Solar Buddies, and the school's Robotics Clubs. Through the Primary Career Education program students have the opportunity to meet and hear from trail-blazing females working in STEM-based careers.

Through the prioritisation of STEM in primary classes, St Margaret's is equipping its students with a solid foundation for their learning into their secondary years and beyond, ensuring they thrive in a complex, technological world.

The young women at St Margaret's are the future problem solvers of the world. They are empowered to have a voice, to know their voice matters, that it will be heard, and it can make a difference. ▲

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IMAGE: STAFF LEARNING SESSION

The shared purpose of learning

CHRISTINE WINTLE, DIRECTOR OF STAFF DEVELOPMENT AND RESEARCH, METHODIST LADIES' COLLEGE, VICTORIA

Learning at Methodist Ladies' College (MLC) Melbourne is a shared experience. Professional learning is a process that is supported by the school-developed Teacher Development Framework.

This model of professional growth for staff has been developed as a continuous, collaborative process based on identified College and staff needs and one that develops open, trusting, collegial relationships. The primary purpose of the professional growth model is to improve the growth of all learners in the College, both students and staff, in the shared purpose of learning. This article attempts to provide an outline of the options that have been historically provided for staff to be actively involved in research designed to promote innovation and evaluate their impact as part of this framework.

Time is allocated to research projects through Staff Learning Sessions in a Professional Development Program. These sessions occur twice per term and time is also provided in the end of year program to share, reflect, and celebrate learning in the format of a conference. Through these regular sessions, teacher development is intended to provide clear directions on what quality teaching and learning looks like, how MLC teachers engage in reflective and responsive practice in order to set goals, collect and then evaluate evidence to provide feedback on this practice, and continually develop as professional learners.

A range of research projects are offered to staff as they develop their teaching and learning against evidence-based research. The duration of each project may vary but all projects are aligned with research priorities and the strategic directions of the College. According to Timperley et al. (2014), "the integration of substantial new knowledge requires a minimum of a year of focused collaborative effort to make a difference. Two years is much better. With three years of intensive engaged effort, movement towards a transformed learning environment is usually well under way".

Action research and collaborative practice groups

The core element of the professional growth model is the involvement of staff in a Collaborative Practice Group (CPG). These groups are designed to provide support for staff as they develop their teaching and learning goals and establish their action research plans. The CPG is a collaborative, curricular, or cross-curricular group generally built around a team of three to four teachers that help to support colleagues through an action research project.

Teachers are expected to set a teaching and learning goal and share this goal with their Head of Department. Goals are visible to all, to facilitate effective collaboration, engender feedback, and enable sharing of resources. Teachers then work with colleagues in their CPG to undertake research in the classroom, to improve student learning around this teaching and learning goal.

In the CPGs, teachers form curricular and cross-curricular teams and are asked to work towards trialling strategies and approaches designed to address their goal and improve learning. Classroom observation of colleagues is an important component of the process. The CPGs are essentially learning groups, where teachers will share goals, provide and receive feedback, and discuss the group theme and application of teaching and learning strategies in classroom practice. It is a continuous practice.

Importantly, these groups provide opportunities for teachers to share ideas, support each other, and to celebrate success. This means creating opportunities for dialogue, observation, reflection — for second, third, and fourth tries without fear of judgment or failure (Timperley et al 2014, p. 18).

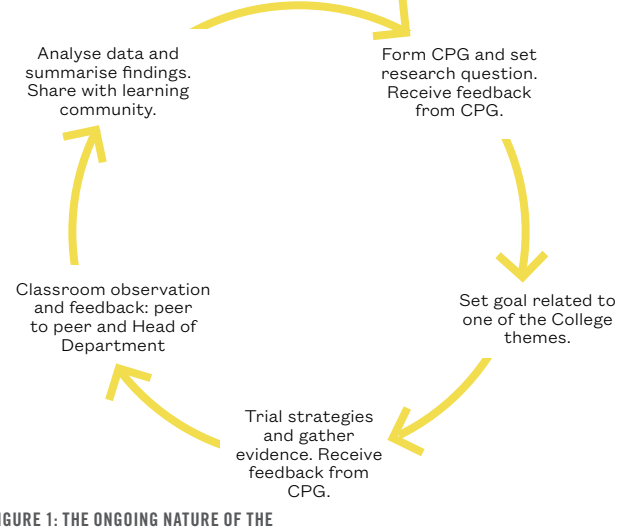

FIGURE 1: THE ONGOING NATURE OF THE COLLABORATIVE PRACTICE GROUPS.

The action research plan focuses on an element of practice related to a College theme. Themes have included differentiation, critical thinking, feedback, designing and implementing innovative and effective assessment for learning, and creating team-developed formative-assessment tasks. Formative assessment has been a key focus for the College over a number of years because the achievement gains associated with formative assessment have been described as "among the largest ever reported for educational interventions" (OECD, 2005, p. 2).

Teacher learning communities

In 2021, we grouped 3 – 4 staff-nominated Collaborated Practice Groups into a Teacher Learning Community (TLC) of 12 – 15 teachers who meet to share experiences, engage in new learning, and plan how to implement the techniques into the classroom.

Students have been integral in designing the learning experiences for teachers.

A facilitator was allocated to each TLC and follows a standard format in each session. There is:

Time to share — a chance to reflect on how teachers have experienced trialling the techniques, share their experiences, and hear from other teachers.

New learning — each session explores three new techniques.

Personal action planning — dedicated time for teachers to plan how they will trial one or two techniques in their classroom, as well as arrange classroom observations.

As cited by research from Wiliam and Leahy (2014, p. 17), "we realised that there could be considerable benefits of adopting a standard structure for these monthly meetings. The fact that each meeting follows the same structure means that participants come to the meeting knowing the roles they are to play, both in terms of reporting back on their own experiences and providing support to others".

Sessions to date have included such strategies as jigsaw technique, entry slips, questioning, feedback as actions, matching comments to work, and whole class feedback. As quoted by one teacher,

> I came away with new, practical strategies I can use and it was also a great reminder of some strategies I haven't used for a long time. The structure of the session meant we got through a lot, and it was a great mix of cooperative and independent work.

Formative assessment and growth mindset

Beginning in 2017, MLC partnered with Research Schools International (RSI) to evaluate and deepen the use of formative-assessment practices throughout the school. We defined formative assessment as 'ongoing assessment throughout the learning process for the purpose of improving learning and teaching'. The RSI research team engaged MLC in a professional-learning partnership involving cycles of research and professional development.

Research began with a survey and reflection questions in early 2018 to capture a baseline measure of formative-assessment use at MLC. RSI researchers analysed the data to identify strengths and areas for growth. Key strengths included teacher feedback and class discussion, while areas for growth included peer and self-assessment, and gathering and using data effectively.

The RSI researchers led a professional development workshop early in 2019 in which they shared the study's first results and supported our 70 teachers to strengthen their practice. This was followed by a three-month, teacher-directed intervention to increase formative-assessment use, with a particular focus on the areas for growth identified by the research.

After this three-month intervention, in the latter half of 2019 the survey and reflection questions were repeated to compare with the baseline data. The focused efforts and improvements were captured among teacher's practice. Results revealed improvements in the areas of clearly communicating learning intentions and success criteria, embedding formative assessment in practice, peer and self-assessment, and gathering and using evidence of students' learning (Perry and Hinton, 2019).

Plans to Pedagogy and learning spaces

The Plans to Pedagogies (P2P) project was a three-year partnership with University of Melbourne's Learning Environments Applied Research Network (LEaRN) team which focused on activating learning spaces to generate more dynamic and engaging learning experiences for students.

Research conducted during 2019 involved 20 teachers exploring the material affordances for teaching and learning, and the pedagogic encounters occurring in their classes. This research was undertaken with a view to generating shared understandings among teacher participants about how to activate learning spaces to promote student agency, curiosity, critical thinking,

creativity, strong relationships, and opportunities for a diversity of achievement. These are the key elements of MLC's learning statement.

This phase of the research found that teachers share a repertoire of common pedagogical encounters, which they promote regularly in their classes — including across curriculum domains. Further, teachers were able to collectively identify the education value of these encounters.

Distilling these learning spaces and practice relationships into communicable outputs was pursued with the objective to share favoured, spatialised, pedagogic routines between teachers via the creation of shared language and visual media (Morris & Imms, 2019). Communication strategies were developed through the Term 4 Staff Learning Conference in 2019 to enable teachers to participate in ongoing discussions about how they and their students may use space to create dynamic and engaging learning experiences.

Common language we are beginning to use when discussing pedagogical encounters and learning and teaching at MLC includes one to many, one to one, individual reflections, group to many, encounters, innovative learning environments, and student to student. When placed in the position of a learner at the Conference, staff felt well equipped for the variety of learning encounters they experienced, as well as different ways of recording and reflecting on their own learning. As quoted by one teacher on operating within the learning environment, "Thank you for making me think about how we can use current furniture for activating learning and not just focus on new pieces".

Microcredentials

A partnership was established in 2020 with Monash University to collaborate on a competency-based assessment research project. This competency-based assessment framework is based on the enterprise skills outlined by the Foundation for Young Australians (Foundation for Young Australians, 2017). Consultation with students, teachers, and industry partners resulted in building the framework for eight competencies across four ability levels. Elements of each competency and progression points have been further developed.

The framework is currently being trialled by teachers across a small number of subjects in 2021. The trial of the framework sits alongside current curriculum units and links to the competencies are made explicit. The result of trialling the framework will allow for further customising of the progression points to ensure the framework suits learning contexts, while maintaining the fundamental property of each progression point. This phase of the research is focused on how teachers operationalise the framework for teaching and learning, how students work with the framework, how this influences their learning, and how teachers, student, and industry partners moderate the attributes of competencies within and across disciplines.

Learning at MLC is a shared experience. In summary, the effectiveness of professional learning is dependent on the relationships that we have with our students and the representation of 'student voice and agency' within the Teacher Development Framework. This describes how our students give their input to what happens within their school, in the classroom, and in their learning. Students have been integral in designing the learning experiences for teachers so that we can progress their learning using evidenced-based research, understand how to effectively use assessment to progress their learning, configure learning spaces to support pedagogy, and articulate the competencies that are the most valued in the curriculum and in the workforce. Finally, the Teacher Development Framework at MLC is used to ensure learning is engaging, focused, and appropriate for everyone. ▲

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The Whaiora Pilot Project: Rangatahi wāhine experiences of healing when engaging with Rongoā Māori and bicultural counselling

KIRSTEN TAYLOR, HEAD OF GUIDANCE COUNSELLING, OTAGO GIRLS' HIGH SCHOOL, NEW ZEALAND

The Whaiora Pilot Project was generously enabled by the award of the Alliance of Girls' Schools Australasia Fellowship. This abstract provides an overview of the research question, methodology, findings and conclusions. The full report is available from the Alliance's Research Library: https://www.agsa.org.au/research/

Introduction

Internationally our young people are taking their own lives at an increasingly alarming rate. The World Health Organisation (2018) reported that in the generation aged 15 – 29 years, suicide is the second most prominent cause of death (Jeffreys, 2020). Rates of youth suicide in New Zealand are the highest among 19 of the world's most-developed, wealthy countries (Shah et al., 2019, p. 57). Despite the downward trend in youth suicide in other countries, New Zealand's rate has stayed steady for 12 years (Davison, 2019). We are losing our Māori youth to suicide at almost double the rate of their non-indigenous counterparts (McLeod et al., 2020). There are increasing rates of mental disorders among our community, with females more likely to experience a common mental disorder than males, regardless of age. Our Māori and Pasifika youth are diagnosed with higher rates of mental disorders and psychological distress than the rest of the population (Hobbs et al., 2021).

A Western deficit construct might ask: 'How can we prevent suicide?' By contrast a *Kaupapa Māori* stance, embracing the principles and values of *Te Ao Māori*, positively strives to promote a state of thriving or *'Mauri Ora'* [life force]. In *Te Ao Māori*, a person is considered well when their *wairua* [spirit], *tinana* [body], *hinengaro* [mental health] and *whānau* [family and community connection] are flourishing and in balance (Durie, 2010). McNeill (2009) postulated that the essential difference between Western and most indigenous models of health is the inclusion of a spiritual element, which is vital when addressing mental health needs.

In New Zealand it is particularly appropriate to integrate *Kaupapa Māori* approaches when seeking to ameliorate trauma. Pihama et al. (2014) highlighted the growing need within a New Zealand context to craft a *Mātauranga Māori* [Māori knowledge] specific approach that stems from distinctive Māori and indigenous experiences of trauma. This is pertinent as two-thirds of adult Māori have experienced one or more traumatic events in contrast to half of the adults in the general population (Hirini et al., 2005).

Partnership

Whaiora, in the context of Aotearoa [New Zealand], are in the unique and fortuitous position with access to both Western practices and *Rongoā Māori* methods that are *he taonga tuku iho* [treasures of our heritage]. It is vital that we understand how those seeking wellbeing relate to their experience of participating in all forms of healing available to us here in New Zealand, particularly regarding those modalities and approaches that have historically been ignored.

The *Whaiora* experiences included here are both *Tangata Whaiora* [Māori seeking wellbeing] and *Tangata Tiriti Whaiora* [those other than Māori seeking wellbeing]. The subjects were adolescents from all cultures, and their reported healing experiences journeying towards the restoration of wellbeing, facilitated through *Rongoā Māori* practices within a bicultural school counselling context. The research question asked: *"What are the rangitahi wāhine experiences of healing when engaging with Rongoā Māori and bicultural counselling?*

Study design

The Whaiora Project included quantitative, qualitative, and *Kaupapa Māori* data-collection methods. The decision to include these study methods is a deliberate echo of the Western and indigenous integrated bicultural approach that underpins this research process — one is linear and numerical while the others are holistic and narrative.

Rangatahi Wāhine

A purposive sample of 12 students, who previously had voluntarily accessed counselling at Otago Girls High School, was invited to take part. The *rangatahi wāhine* [young women], eight senior and four junior *Whaiora*, represented a mixture of ethnicities — eight were Māori, two Pasifika, and two of New Zealand European descent. Māori and Pasifika students currently represent 16 per cent of the Otago Girls High School student body but accounted for 83 per cent of those who qualified for the pilot project. The *Whaiora* were deemed to be 'at risk' across a broad range of data and markers, including attendance, pastoral behavioural entries, and adverse childhood experiences. Current presenting issues included mood disorders, alcohol and drug use, dissociative identity disorder, eating disorders, childhood sexual abuse, physical/psychological abuse, and engagement in self-injurious thinking and behaviour including suicidal thinking, suicidal planning, suicide attempts, and non-suicidal self-injury. The six most vulnerable students were seniors aged 15 – 17 years and the majority of the lower risk students were juniors aged 13 – 14 years.

10 of the 12 participants recorded a higher and improved wellbeing score.

Intervention

I conducted seven semi-structured counselling sessions using open ended questions with each student, using the Bicultural Counselling Framework (Lang & Gardiner, 2014). In conjunction with the counselling approach, the students participated as a group in a three-day workshop led by cultural partners, *Manawa Ora*. During the three-day workshop the 12 students took part in a two-day, overnight wananga (learning). On the third day the students introduced their families to the body-centred skills and techniques they had acquired, to maximise the potential for family involvement. The central modality employed over the three days was *Mirimiri*, a recognised Māori holistic form of bodywork and healing which assists the individual to release stress, tension, blockages, and trauma that accumulate in the body over time and contributes to unwellness and chronic disease. *Mirimiri* is also a powerful tool to 'reconnect' people back to themselves, cultural knowledge, self-awareness, self-empowerment, and, ultimately, wellbeing.

Findings

The self-reported data showed that from the beginning to the end of the project 10 of the 12 participants recorded a higher and improved wellbeing score. The greatest gains in the students' sense of wellbeing were for students who were supported by their families on the clinic day and who have continued to receive *whānau* [family] support. Family involvement in the therapeutic process, with the inclusion of a clinic day and the students practising their self-help skills on family members at home, seems to have been essential for the success of this project. The most noticeable improvements occurred for the six senior students who were deemed to be most 'at risk'. The program was highly effective for students who were both older and who presented with the highest level of risk.

At the outset of the project 11 of the students reported suicidal ideation, two were previously hospitalised for more than one attempt on their lives, and most students had experienced self-harm. All but one of the 12 students are now moving towards a position of safety.

Observations and narratives

Facilitating *Whaiora* engagement in the therapeutic process and forming a positive, culturally safe relationship was pivotal to facilitating healing for these students and was central to the adopted approach. This is consistent with the recommendations of Piripi and Body (2010) and Durie (2001), who advocated the primary use of *whanaungatanga* [relationships] when counselling Māori. There was a strengthening of the therapeutic alliance across the project, with reported high levels of mutual trust, respect, and inclusion. The young women valued feeling energised, involved, stimulated, and joyful, indicating the interactive approach was effective. Importantly, the sense of belonging that evolved was sustained well beyond the parameters of the project. Three of the four now tertiary students returned to share their success with teachers and the pastoral team. The remaining eight students regularly access help and participate in group-based *Mirimiri* sessions and report a sense of security and 'belonging' to the *'Whaiora Whānau'*.

The students transferred the skills they learnt into their family environments, utilised these on the clinic day, and continue to use these techniques at home. The therapeutic relationship became multi-dimensional with the involvement of whānau members and supportive staff members, which led to excellent treatment outcomes. Anecdotal evidence showed that the more interconnected the relationships were between the young person, their family, the practitioners, and the school pastoral wellbeing

team, the greater the potential for the adults surrounding the young person to communicate and address any emerging risk. The strength of the relationships also enabled help-seeking behaviours by all the young women, enhancing the protective factors which continue to be sustained. Five of the students immediately sought assistance from the school counsellor for themselves and their families when they moved into positions of heightened 'risk' of suicide. The breadth of personal safety was expanded to include a sense of themselves as spiritually located beings and ten *rangatahi wāhine* discussed how connected they felt to special people within their *whakapapa* [genealogy]. Intrinsically operating from a position of cultural safety has provided a rich, trusting relationship platform to increase the personal safety for these young women, regardless of their ethnic background.

Effective relationships proved to be a foundationally 'safe' structure upon which *Mirimiri* could occur, allowing for understanding gained through active participation and reflective *korero* [conversation].

Where this relationship with practitioners and/or *whānau* was not strong enough, it predicated a barrier to success. Two students were unable to continue with counselling, demonstrating how critical *whanaungatanga* [relationship] is in predicting outcomes. Similarly, for those four students whose families did not participate in the *whānau* clinic day, their outcomes were less positive and less sustainable, highlighting the importance of family involvement to sustain student wellbeing.

Effective relationships proved to be a foundationally 'safe' structure upon which *Mirimiri* could occur, allowing for understanding gained through active participation and reflective *korero* [conversation]. Understanding themselves holistically was a *toanga* [gift] given to them with *aroha* [love], along with the associated skills necessary to regulate their bodies and 'still' their minds. All four junior students now report feeling a clarity of mind, an ability to minimise their thought ruminations, an increased ability to reflect on decision making, and a decreased 'reactivity' to triggers. Reports of feeling settled, focused, and calm, and an understanding of how suppressing hurtful emotions can be counter-productive were consistent across this group.

By contrast the senior students experienced more pronounced, stable, and transformative *whakamārama* [self-knowledge] consistent with their cognitive level of maturity, reporting mental clarity and an increased ability to utilise *whatumanawa* [internal guidance]. All eight attested to a reduction of 'over-thinking' and an awareness of being more present in their bodies. Four seniors demonstrated increased self-reflective capacity and honesty with themselves and family members. Six seniors reported a deeper connection to their family and acknowledged the benefits of this for their wellbeing. Three senior students experienced themselves as more 'authentic', transitioning from observing themselves to actively being engaged in their lives. Observations also revealed that the junior students found it difficult to sustain the positive effects of the intervention.

This coupled with the more marked positive effects on the senior *rangatahi wāhine* has led to the tentative conclusion that future studies of this kind may need to adapt to cater for the unique needs of the two developmental groups. It also highlighted a need for ongoing support for all the students, that extends beyond the project's time frames.

Both junior and senior students during this therapeutic process disclosed challenges and histories for which they had previously not sought help, and which were adding to their risk of self-harm and suicidal ideation. These included violence in the home, sexual assault, physical assault, and eating disorders. Disclosure meant that nine of the 12 students were empowered to seek medical, emotional, and mental help, and ongoing support. Early intervention with parental cooperation will undoubtedly save resources and, more importantly, lives. As the gaps between the student, staff, helping professions, and parents closed, the safety net for these students grew.

A direct consequence of connection, support, and understanding also occurred in more subtle ways. Three students moved away from harmful caregivers. Four students transitioned into tertiary studies. Three students formed new friendships and discontinued harmful ones. Three junior students were each enabled to 'teach' groups of 30 Year 9 peers how to care for their bodies using *rākau* [pressure releasing tools]. The participants reported a reduction of post-traumatic stress symptoms and of depressive or anxiety-related symptoms, improved self-management in relation to externalising behaviour problems, and improved self-esteem. All 12 *rangatahi wāhine* had a renewed sense of hope. All were able to articulate both present and future visions for themselves that were achievable and fulfilling.

The *Kaupapa Māori* culturally responsive framework, which focused on the individual and collective strengths of these *Wahine Toa* [Women of strength], reinforced the right to self-determination for both the Māori student participants and those from other ethnic backgrounds, and was ultimately empowering for all the young women. Growing towards the light, rather than getting lost in the dark undergrowth of their suicidal ideation and trauma,

was liberating. Empowerment also evolved from the group-based approach where the young women drew on the strengths of one another to thrive and become increasingly whole. The younger students found it difficult to consolidate their learnings but, with the guidance and mentoring of the senior students, they are increasingly managing themselves effectively.

Conclusions and recommendations

The 12 experiences of adolescent *Whaiora* that quantitatively and qualitatively make up this project have positive implications for the inclusion of *Rongoā Māori* in the context of bicultural counselling to facilitate healing in New Zealand. Three major themes specific to this group of *Rangitahi Wahine* were identified.

Integrating a strength-based bicultural framework with the treasures of our indigenous past and present could provide ways of working effectively with adolescents.

(1) The young people experienced healing and safety through connection —connection to the practitioners/counsellor, connection to each other, and ***connection*** to *whānau*. Participation tangibly increased protective factors for the 12 students. The students experienced a sense of belonging fostered by being a part of a group — they did, and still do, identify as *Whanāu Whaiora*. Family involvement in the project was a critical component influencing experiences of wellbeing. Participation also encouraged connection to the strengths of their *whakapapa* [genealogy], both past and present. The protective factors identified through ***connection*** included increased and timely communication between all stakeholders in the relationship, intercession when risk was apparent, and the development of help-seeking behaviours in the students themselves.

(2) The *rangatahi wāhine* experienced healing through ***self-awareness***. The process and practice of learning how to attend to their spiritual, bodily, mental, and community selves through the practice of *Mirimiri* increased the young women's *whakamārama* [self-knowledge] and gave them the tools to physically ground and regulate themselves emotionally. Participation enhanced their awareness of themselves as spiritual beings.

(3) The *Whaiora* experienced ***agency*** in their lives. Active, physical participation in the project translated to empowering the young women to act and enhanced their overall sense of wellbeing and hope. The greatest shifts towards flourishing, holistic health were made by the senior students and those who initially presented as most 'at risk'.

This study is aimed at the pastoral care and senior leadership teams who allocate funds in Australasian schools. The implications for practice are that addressing the complex needs of individuals impacted by suicidal ideation and trauma, in a culturally centred, holistic way, can proactively ensure safe outcomes. The Whaiora Project identified several concerns. Firstly, the healing gained through participation of those under the age

of 15 was compromised by the challenge of sustaining the experience. Secondly, to manage the cost of integrating school and community resources it would be pertinent to source *Rongoā Māori* practitioners from local *iwi* [tribe] and *hapū* [subtribe]. Finally, to maintain safe practice moving forward for all participants the connections created through the project need to be maintained, which presents challenges around the ongoing financial cost. Ultimately, however, the 'cost' of youth suicide is immeasurable within our schools and wider communities. Investing time and energy in the formulation of relationships, utilising a rich culturally responsive foundation within a secondary school setting, may be the cord that can hold our young women safely, while they seek healing on their pathway towards thriving.

Future research could also explore traditional indigenous practices for use in secondary schools throughout the Australasian area, drawing on the strengths of the geographical region, as an alternative counselling treatment. The assumption here is that cultural knowledge is required to work with healing and empowering our youth. Respectfully protecting the rights of the original peoples and developing indigenous ways of working with at risk Māori, Pasifika, and other youth within Aotearoa and Australasia may increase experiences of healing. Integrating a strength-based bicultural framework with the treasures of our indigenous past and present could provide ways of working effectively with adolescents from a cross-section of cultures to support them to hold firm to life. ▲

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Evidence-based practice using whole school data from a contextualised student perception survey: A reflection on four years of implementation in an all-girls school

JANELLE O'NEILL, DIRECTOR OF PROFESSIONAL LEARNING, MT ST MICHAEL'S COLLEGE, QUEENSLAND

Janelle O'Neill was the 2021 recipient of the Roslyn Otzen Award for Exceptional Teaching. Named in honour of Dr Roslyn Otzen, Alliance co-founder, the award honours exceptional teaching practice and serves as a means for teachers to share best practice and innovative teaching approaches.

Beyond immediate cognitive achievements

How do we gain an insight into adolescent thinking? A formative quiz? A summative piece of assessment? Standardised testing? This type of performance data reflects a culmination and interplay of complex constructs of holistic habits, support, and intellect. While teachers and students can feed forward using these formative and summative learning experiences, there is a continued need to delve deeper than the cognitive system to fully support the learner. *The Queensland Curriculum and Assessment Authority (QCAA) Senior Syllabuses* that were implemented in 2019 include 'The New Taxonomy of Educational Outcomes' in the Teaching and Learning section (Marzano & Kendall, 2007) and reaffirm the need to develop all three mental processes: cognitive system, metacognitive system, and self-system. The metacognitive system and self-system are supporting the cognitive system, but how can the development of these

systems be measured? Zimmerman (2000) identified metacognitive strategies as regulating attention and effort, and monitoring and evaluating progress. Marzano and Kendall (2007, p.108) posited, "the self-system process of examining efficacy involves examining the extent to which individuals believe they can improve their understanding or competence relative to a specific type of knowledge". Wang and Holcombe (2010) described the extent to which students feel this sense of mastery and efficacy is related to their effort and intrinsic motivation in school. Students' perceptions of their belief, their confidence, their positive intentions, or actions would seem interconnected and crucial in the development of mental processes. This article focuses on how student perception data can provide this crucial insight, inform professional conversations and teacher practice, and drive initiatives for improved student outcomes.

Locally devised student perception surveys

The Student Perception Survey, based on a design used by Ingvarson (2017), consisted of twenty statements using a four-point Likert-type response scale. The interval descriptors — 'All of the time', 'Most of the time', 'Some of the time', 'Not at all' — guided student responses. The twenty statements were positively framed to reflect the expected learning-environment messages and strategies for the school's context. The statements were worded to enable the range of age groups across an all-girls school (12 to 18 years) to complete the same survey. The survey has been distributed bi-annually since Semester 1, 2018. Fifteen of these statements remain unchanged and five have been interchanged to reflect the changing landscape and needs of the girls. The final prompt was an open-ended opportunity to respond to 'My learning in this subject could be enhanced by …'. Participation in the survey was compulsory and anonymous. The survey was emailed to students with brief instructions and a link to each subject's survey. Students were allocated time in an exam block study session at the end of each semester to complete the surveys. Every student in the school completed the survey for each of their subjects and averaged five minutes to complete each subject's survey. The school is capped at 900 students and the data over the past four years has averaged 5,200–5,400 responses per semester. Random sampling of data was included to ensure students were not 'aimlessly' completing the surveys, with the difference between responses in the open-ended prompt across subjects being the measure.

Analysis of the data each semester included whole school responses, year-level responses, subject responses, grouping of Year 7 and 8, Year 9 and 10, Year 11 and 12 whole year and subject data, and class data for each subject. Data was presented in easy-to-interpret pie-graph representations with the ability to hover over each sector to obtain raw data. Each teacher could access their class data and all Middle Leaders could access subject and year-level combinations. Analysis of whole school data was shared with all staff in designated Professional Learning time at the end of each semester and included the opportunity for professional dialogue and implications of the data for future pedagogy. The pie graphs have been reproduced as tables for this publication.

Initial implementation of the Student Perception Survey

In 2018, the teaching staff was apprehensive about the implementation of the Semester 1 Student Perception Survey. This was known from evaluative surveys in the past, where teachers perceived feedback as student judgement, rather than insight, and reacted by dismissing potentially informing data. A professional approach of mutual respect was required to diminish this resistance and encourage engagement with this valuable opportunity to inform their practice. All teachers were included in the development of the Student Perception Surveys, and even with the reframed positive statements many were keen to supervise the students completing the surveys to give their interpretation of the statements. Students in turn were perplexed with the decision-making part of using the Likert-scale in the reflective process for each subject. Is it 'most of the time'? Can I have an 'undecided'? By the second semester, students were better able to complete these independently and staff could see there was no hidden agenda for these surveys. The purpose, as evidenced by the following instruction in the email to each student, was clear: "The purpose of these surveys is for you to reflect on your learning in each subject … This is your personal reflection, so we ask that you complete the survey without asking your teacher to interpret any of the questions. Thank you in advance for your honest reflection." The culture for students to honestly reflect on their learning in each subject closely correlated with the teachers engaging with this new format and showing students how they actioned this insight.

Professional dialogue: What do we do with the data?

The Student Perception Surveys were devised to capture insight beyond performance data. The complexity of thought at each student's age and stage, in relation to the study of each subject in the learning environment, was under the spotlight. It was envisaged that this aspect of student voice would provide further insight to inform practice. Platforms from which to engage with this data were included in the professional learning programd specifically on student-free days. The following indicate the questions posed to staff at key reflective junctures and prompted professional discussion:

> End of Semester 1, 2018: Please reflect on the messaging in these surveys and decide where explicit teaching, or routines, or other modifications of practice could further support students' learning in Semester 2.

End of Semester 2, 2018: What do we do with the data? You have engaged with class, subject, and year-level data within grading, moderating, and reporting practices, and student perception data. Discuss the explicit teaching required to enable a B-grade student to reach A-grade standard.

End of Semester 1, 2019: How does your general class-performance data, analysed during reporting, compare to the student-perception data? Are the trends in your class data similar to the cohort's or subject's data?

End of Semester 2, 2019: Professional dialogue — In the cycle of reflection for students to develop their metacognitive and self-system, what key messages and insight would you like the Student Perception Surveys to provide in 2020?

This professional dialogue was a crucial opportunity to interact with the data and move these measures into a positive space for pedagogy renewal. After four consecutive semesters of implementation, the opportunity for all stakeholders to reflect and provide feedback regarding the survey messaging added value to guide this evidence-based practice. Furthermore, by providing opportunities and time to absorb and discuss data with colleagues, the Student Perception Survey was anchored as a school-improvement tool. This shifted the mindset of such surveys from individual staff evaluations to an integral tool to improve student learning.

Messaging with in-built contextualised strategies

The learning environment in which every student could reach their potential was characterised by contextualised expected-learning behaviours, positive psychology derived strategies, and purposeful practice. The messaging of this desirable learning environment was inherent in the Student Perception Surveys. As the teaching staff discussed class, subject, year level, or whole school data, trends and patterns became evident. For example, in 2018, over 50 per cent of the school did not, for most of the time, "follow a study plan to develop my confidence in completing assessment". To address this apparent issue, teaching staff discussed data and implications for their pedagogy, and were then able to share understanding of a proposed consideration for intervention. A simple system for intervention in response to this data was delivered using an acronym PQRST. This acronym was added to as patterns of needs, as voiced by students, emerged over time:

- **P**lan study around your schedule.
- **Q**uestion in class, self, and peers to clarify meaning.
- **R**eview class work — keep trouble spots and rework these.
- **S**elf-explain concept using 'think aloud'.
- **T**ime task completion in class and at home.

The professional collective was given time within the presentation of whole school data to discuss implementation or intervention, such as in the response to "How can you utilise elements of PQRST for your Year 7, 8, 9, 10, 11, or 12 class?" Over the first four semesters, the least positive movement was observed within year levels and whole school data in response to the Student Perception Survey statement "If I am absent from class, I can catch up on the work using a class buddy or by seeking teacher help". Hence, 2020 started with a reminder of strategies associated with PQRST and the addition of 'U'. Use strategies shown in class e.g. catch-up with learning buddy, if you miss a lesson.

Acronyms are usually incorporated in rote-learning activities, however the purpose of this acronym was simplicity for the teaching staff. It was an acronym of guides derived from student voice. The acronym has been used as an aid in parent-teacher conferences, new staff inductions, and as a reminder of the needs of our clientele. The thousands of responses received to the open-ended prompt "My learning in this subject could be enhanced by …", in the past two semesters, have called for the most recent addition 'V'. **V**isible home study intention and outcome.

There is autonomy in the use of the acronym. The whole school data in relation to class data remains important for informing teacher action so that professional judgement remains intact. Notably, Fullan and Langworthy (2014, p. 20) described the need for teachers to have a repertoire of strategies, and a highly proactive role, in driving the learning process utilising the best strategies for their class. By using whole school data to inform a contextualised system of tailored interventions, teachers are included in the analysis of data and devising strategies to enhance the learning process.

Reflecting on measures of impact

Each member of the teaching team is required to complete an Annual Professional Plan. This includes setting short-term goals which align with the Australian Professional Standards for Teachers (APST) and annual goals for the College, middle and long-term career goal setting, completing lesson observations of their colleagues, and reflecting on measures of impact. In 2018, reflecting on the measures of impact focused on the feedback provided through lesson observations and the evidence that demonstrated short-term goals had been achieved. Some staff used the Student Perception Survey data or semester grades to demonstrate these. In 2019 the template for the Annual Professional Plan was modified to include the following prompts to use data: "Reflection on lesson observation and student-performance data (how will you modify your teaching practice in the future based on the feedback received?)" and "Results of student feedback".

At the end of Semester 1 and Semester 2, whole teaching-staff professional learning was built into student-free days. This signaled time to access, discuss, and use the data to inform future practice. The ease of access and simple display of data allowed for the diverse adult population to engage and interpret the data for their needs. The outcome of presenting whole school data with implications, interventions and encouraging staff-professional voice in relation to this student-learning voice, was a significant shift in the use of data to inform practice. This was evidenced in the Annual Professional Plans completed and submitted at the end of 2019: 97 per cent of the teaching team used at least one comparative display of Semester 1 to Semester 2 Student Perception Data for a class or year level and reviewed this to inform their practice. This led to a further development of the Annual Professional Plan template for 2020 as shown in the modified wording to guide the use of data: "Reflect on lesson observation(s) and student performance and/or student perception data. (How will you modify your teaching practice in the future based on the feedback received?)" and "Results of student feedback such as comparison of Semester 1 and 2 Student Perception Survey data." The following excerpts are a representative sample of the insight gained from the Student Perception Survey data as included in the teaching team's 2020 Annual Professional Plans.

Semester 1 Reflection:

> The Student Perception Data for my classes demonstrated that a significant proportion of my students have low self-confidence, and do not always seek help when they are confused or disappointed with a result. In future, I will be more consistent with student conferencing so that I can spend individual time with the students and allow them to feel confident in expressing their concerns or asking questions. The Student Perception Data also revealed that most of my students utilise draft feedback to improve their final assessment pieces. This is a positive habit that I will continue to encourage. I will also work to provide more opportunities for formative feedback, so that students do not have to solely rely on drafting feedback to improve their responses.

Semester 2 Reflection:

> I have noted summarising texts as an area for improvement. While the response from Semester 2 is more positive, I will continue to work on integrating in-class and home-study activities to enable students to develop these skills.

I SUMMARISE A TEXT OR CONTENT IN MY OWN WORDS TO HELP ME LEARN

Responses	Semester 1	Semester 2
All of the time	24%	42%
Most of the time	52%	41%
Some of the time	24%	17%
Not at all	0%	0%

TABLE 1: STUDENT RESPONSES

IF I AM ABSENT FROM CLASS, I CATCH UP ON THE WORK USING A CLASS BUDDY OR BY SEEKING TEACHER DIRECTION

Responses	Semester 1	Semester 2
All of the time	65%	77%
Most of the time	25%	23%
Some of the time	10%	0%
Not at all	0%	0%

TABLE 2: STUDENT RESPONSES

> This data represents a strong improvement from Semester 1 to Semester 2. I have made a concerted effort to encourage students to seek support from both their peers and myself. I will continue to incorporate this practice in my future pedagogical practice.

I PREPARE FOR CLASS BY REMEMBERING THE PREVIOUS LESSON'S LEARNING AND COMPLETING THOSE SET TASKS

Responses	Semester 1	Semester 2
All of the time	53%	80%
Most of the time	47%	20%
Some of the time	0%	0%
Not at all	0%	0%

TABLE 3: STUDENT RESPONSES

> This comparison of the whole cohort of Year 12 Mathematical Methods students indicates a significant shift in student cognisance in this area. The simple intervention included students exiting the classroom with a summary of the lesson's learning and the intention to consolidate that learning. This vocalisation of their learning served as the routine conclusion of each lesson and was guided by a chosen student, or by the teacher, or in unison. The green to red ratio aligns with my review of their set homework over each semester so the insight regarding how well they thought they were remembering the previous lesson's learning was most interesting.

I CREATE MY OWN STUDY PLAN TO ORGANISE AND CONSOLIDATE MY LEARNING

Responses	Semester 1	Semester 2
All of the time	8%	23%
Most of the time	51%	57%
Some of the time	23%	0%
Not at all	18%	20%

TABLE 4: STUDENT RESPONSES

These responses from my Year 11 class show that the emphasis I place on interleaving practice and consistent revision has had some impact. As this survey is anonymous, I have not been able to align the 'not at all' with their performance data to ascertain whether their approach to study is effective. As I continue to teach this class next year, I will include initial consultation with each student to reflect on their study strategies, alongside their performance data, and action areas to improve.

Self-efficacy, self-regulation, and motivation

For the purposes of this article, elements of the data outcomes have been included to demonstrate insight, implication, and intervention. After seven semesters of implementation, a new cohort of Year 7s each year, some changes in staff, and the ongoing use of PQRSTUV in varying platforms, it is pertinent to seek the current status of the girls at Mt St Michael's College. Psychological capital has been defined as "an individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success" (Luthans et al., 2007, p. 3). The following statements from the Student Perception Survey are direct measures of self-efficacy, optimism, hope, and resilience:

1. I display a positive attitude towards my learning.
2. I learn through the struggle of an academic challenge.
3. I believe consistent effort can improve my performance in assessments.
4. I have a strategy to seek help if I am stuck on a home study task.
5. I learn from a disappointing result by seeking advice and applying advice.
6. I am confident I can continue to master the skills learned in this class.

These measures have been consistent features of the Student Perception Survey over time. Table 5 reflects the most positive indicators of psychological capital to date.

A targeted commitment to assessment design and moderation has occurred over the past four years in response to the development of the new Queensland Certificate of Education (QCE). This has affected both adult and adolescent behavioural and cognitive engagement. Behavioural engagement includes participation, effort, attention, and persistence (Fredricks et al., 2004), while cognitive engagement includes self-regulated learning and exerting the necessary effort for the comprehension of complex ideas (Fredricks et al., 2004; Zimmerman, 1990). Teachers have readjusted their pedagogy in response to some challenging aspects of the new Senior syllabuses and design new assessments which meet quality assessment accessibility and validity parameters. Arguably, the following data capture, grouping the General and Applied Senior Subjects offered to students in Years 11 and 12, (Table 6) reveals positive behavioural and cognitive engagement for both teachers and students. The data in Table 6 also prompted inquiry questions for colleagues: How do they know where to start if the assessment is not accessible? What adjustments are required for my pedagogy if they are not recognising the subject-specific vocabulary, unpacking

I DISPLAY A POSITIVE ATTITUDE TOWARDS MY LEARNING			
Responses	Year 7 and 8	Years 9 and 10	Year 11 and 12
All of the time	38%	45%	48%
Most of the time	45%	42%	43%
Some of the time	14%	10%	9%
Not at all	3%	3%	0%
I BELIEVE CONSISTENT EFFORT CAN IMPROVE MY PERFORMANCE IN ASSESSMENTS			
All of the time	58%	59%	66%
Most of the time	31%	34%	30%
Some of the time	10%	5%	3%
Not at all	1%	2%	1%
I AM CONFIDENT I CAN CONTINUE TO MASTER SKILLS LEARNED IN THIS CLASS			
All of the time	44%	52%	58%
Most of the time	40%	36%	36%
Some of the time	13%	10%	6%
Not at all	3%	2%	0%

TABLE 5: STUDENT PERCEPTION DATA SEMESTER 1, 2021 COMPARISON OF YEAR 7 AND 8, YEAR 9 AND 10, AND YEAR 11 AND 12 RESPONSES

I READ AND UNDERSTAND THE ASSESSMENT TASK CONFIDENTLY				
Senior subject areas	All of the time	Most of the time	Some of the time	Not at all
English	50%	46%	4%	0%
Humanities	51%	43%	6%	0%
Languages	48%	44%	8%	0%
Maths	46%	48%	6%	0%
PE	30%	52%	15%	3%
Religion	45%	46%	9%	0%
Sciences	48%	44%	8%	0%
Technologies	40%	42%	16%	2%
The Arts	54%	44%	2%	0%

TABLE 6: STUDENT PERCEPTION DATA SEMESTER 1, 2021 CROSS-CURRICULAR YEARS 11 AND 12 RESPONSES

of the criteria (instrument-specific marking guides), or the language and higher cognitions of the examinations? If they read and understand what to do how does that translate to their final submission?

Extending the conversation of learning as a mutual endeavour beyond teacher and student is an ongoing challenge. While academic performance is communicated transparently to parents through systems provided by the school, it is the conversations about the incidental learning that is often missing. Anecdotal evidence reflects escalated emotive communication between students, parents, carers, and teachers correlates with the peak time for assessment submissions. This could be in response to a disappointing result or the stress-related coping strategies and reactions that co-exist with last minute effort to meet assessment deadlines. The inclusion of 'I share my learning in this subject with my parent(s)/carer(s)' (as shown in Table 7) has enabled initial insight for teachers and further reflection for the student: When would I do that? Which part of my learning do I share? Should I be sharing my learning? Is that what everyone else is doing? Interestingly, at a recent Senior Subject information evening for Year 10 parents, some of the Semester 1, 2021 Year 10 Student Perception Survey data was shared in the presentation for parents. This also prompted parents/carers to consider: When would I do that? Which part of her learning does she share? Should I be asking about her learning beyond performance results? Is that what everyone else is doing? Building positive relationships with and between parents/carers and students is a continued avenue we seek to strengthen to enhance our learning environment.

I SHARE MY LEARNING IN THIS SUBJECT WITH MY PARENT(S) / CARER(S)

Responses	Year 7	Year 10	Year 12	Whole school
All of the time	30%	42%	27%	36%
Most of the time	32%	34%	34%	33%
Some of the time	26%	17%	28%	22%
Not at all	12%	7%	11%	9%

TABLE 7: STUDENT PERCEPTION DATA SEMESTER 1, 2021

Conclusion

A perceived 'rate your teacher' survey was replaced with a Student Perception Survey as a reflective tool for both students and teachers, to gain insight into and strengthen the learning environment. The design was accessible for 12 – 18-year-old girls and included affirming messages and strategies expected in the learning process. The data was collected and displayed over the course of seven consecutive semesters for the teaching staff to analyse, alongside its performance sibling, to inform practice. Strategic systems were built into the Professional Learning program to enable teacher engagement with the data. Explicit instruction was the hallmark of the data presentation to staff, the professional dialogue, and the consequent interventions. Teachers demonstrated an engagement with data to inform pedagogy as evidenced in their Annual Professional Plans over time. The essence of analysing and interpreting self-perceptions enabled a lens for understanding the development of self-efficacy in our adolescent-learning environment. Whole school data allowed leverage to action student voice and target student needs. ▲

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IMAGE: YELLOW RIBBON OF HOPE EMBRACED BY THE GIRLS WEARING RIBBONS ON THEIR RETURN FROM HOME SCHOOLING

Listening to their voice: Towards an authentic student leadership culture

ANN BROWNLIE, HEAD OF HEALTH AND PE FACULTY, TEACHER IN CHARGE OF STUDENT LEADERSHIP, ST URSULA'S COLLEGE TOOWOOMBA, QUEENSLAND

Ann Brownlie was the 2020 recipient of the Roslyn Otzen Award for Exceptional Teaching. Named in honour of Dr Roslyn Otzen, co-founder of the Alliance of Girls' Schools Australasia, the award honours exceptional teaching practice and serves as a means for teachers to share best practice and innovative teaching approaches. Ann designed a school-wide leadership program enriched by student voice.

There is no disputing the role that schools have in the development of leadership within the student body. School is a positive way to develop social and emotional wellbeing for students including self-confidence, enhanced attitudes to self, others and the school, and improvements in academic outcomes (Durlak et al., 2011).

Essential 21st century skills such as collaboration, problem solving, creativity, and critical thinking are a by-product of a student-facilitated model of leadership. While student leadership is a well-voiced term at our all-girls Catholic secondary school, with the development of a new and refreshed model of student leadership comes a need for a level of accountability to ensure that appraisal measures of the model continue to be developed. Establishing an authentic student leadership culture takes time, persistence, and more than this, the encapsulating of the student voice through the provision of "opportunities for authentic student

decision making over matters that affect them" (The Australian Wellbeing Framework, 2018. p. 5). Central to the effectiveness of student leadership is the role of the principal in developing a school culture that respects the student voice and facilitates that voice to be heard. Students must be prepared effectively to take on leadership roles and to this end, in 2019, I was appointed to take on responsibility for the development of a school-wide leadership program to be known as the ASPIRE program, developing leadership skills for all students from Years 7 to 12. This article recounts the introduction of the ASPIRE program from 2019 to mid-2020.

Leveraging the successful implementation of the improved student model, the review practice will hinge on the willingness of the current leaders to take ownership of the student leadership model to review their successes and to make recommendations for the future. From the perspective of the teacher in charge of the ASPIRE leadership program, what interests me most from the review is a greater understanding of the female adolescent construct of leadership as posited by Archard (2013). Given the importance of student leadership and the potential implications on adult practice, to address the current imbalance of women leaders in society (Archard, 2013), giving voice to the key stakeholders is imperative to enable the development of leadership programs specifically targeting the needs of the adolescent female. In parallel we must also identify the support that our female student leaders need during their period of leadership. The student voice can significantly enrich the quality and depth of findings with their first-hand knowledge of the adolescent world (Livingstone et al., 2014) but more particularly inviting the girls to reflect on their 'lived experience'. This provides the potential to understand important influences on girls' perception of leadership and its development.

Giving voice to the key stakeholders is imperative to enable the development of leadership programs.

The Australian Wellbeing Framework (2018) identifies student voice as one of the five elements of fundamental practice, where the provision of "opportunities for authentic student decision making over matters that affect them" is outlined. What the College envisaged in 2019 was a new approach — giving more students the opportunity to develop leadership skills and to exercise their talents and interests by taking ownership of the programs in which they take part.

What is often the case when reviewing student structures is the deficit of student voice and input. From the beginning student views were central to the process and this was achieved by an independent facilitator collecting both quantitative and qualitative data. Students from all year levels were offered the opportunity to complete a survey and volunteers were called to participate in focus group discussions. These were held during Student Representative Council (SRC) and House Leader (HL) meeting time to gather data from existing formal leadership groups. The students were keen to be involved and were vocal in what worked well and what could be improved.

What resulted from the restructuring of the previous hierarchical model was a team structure reflecting a distributed form of leadership that also mirrored the College Leadership Team structure. Previously, decision-making that impacted student life within this community was influenced and directed by the involvement and opinions of a few. The SRC held a status unmatched by any other student group — leaders who often were elected because of popularity. While in essence, one could describe the accomplishments achieved by the SRC over the years as successful, much was being achieved in other areas of college life. Communication between groups was ineffectual with groups working in what is colloquially referred to as 'silos'. Culture, service, sport, boarding, and house groups were working in isolation from each other with an unintentional sole focus on their own activities and student groups. Timperley (2005) draws our attention to the importance of "dynamic interactions between multiple leaders and followers" (p. 396) and the need for a more cohesive approach to achieving strategic goals. The need for this was evident.

Educational research points towards a strong relationship between distributed leadership, organisational improvement, and positive student outcomes with high performing schools widely and wisely distributing leadership (Leithwood et al., 2009). The new student leadership model redressed the interactions between people and their positions, and acknowledged that with collaboration between the multiple leaders, a more positive and connected community supporting student wellbeing would be created. All areas of the school were now represented in this model and the group would be known as the Student Leadership Team (SLT). These representatives are the College Captain and Vice-captain, Boarding Captain and Vice-captain, House Captains (eight in number), SRC Captain, Culture Captain, Faith and Service Captain, Sports Captain. The SLT meets fortnightly with a member of the College Leadership Team and the teacher in charge of the ASPIRE program. The format of the meeting nestles around communication and collaboration, bringing to life the strategic goals within each of the teams they lead.

As a group, the girls were introduced to strategic planning at their Formation Day in Term Four, 2019. The approach taken in developing strategic directions for the SLT adopted the spectrum proposed by Holdsworth

(2000) where student voice is more than a source of data, but rather is in a position where there is "shared decision-making and implementation of action" (p. 358), a key component of the College Wellbeing Framework. This was a significant shift in mindset, fully supported by the Principal and College Leadership Team, from one where students were in a managerial role of orchestrating and organising student events, to one where they will be playing an active role in leading and contributing to the strategic goals of school improvement.

The inclusion of unequivocal strategic directions within the student leadership team planning provided a platform to inspire and challenge future-focused women with the theme for the year. 'Women of the World — WOW' was born.

Goals were framed to align with the College strategic plan to enhance school improvement, student wellbeing, and the need to be socially-conscious citizens of the 21st century. So, with the College culture statement at the forefront of their thinking and planning, and alongside the College motto of 'Serviam — I will serve', these strategic goals were directed towards the vision of a vibrant school community where 'Every Face has a Place'. The inclusion of unequivocal strategic directions within the student leadership team planning provided a platform to inspire and challenge future-focused women with the theme for the year. 'Women of the World — WOW' was born and launched to the student body at the first College assembly for 2020. 'Women of Empowerment', 'Women of Service', and 'Women of the Future' corresponded with the school terms respectively. Portfolio captains then had the opportunity to exercise the operational goals within student groups, taking ownership of the initiatives and activities to support a whole-school student approach to work towards their strategic goals.

In developing this approach, it has been possible to recognise some of the ways bridging 'student voice' to 'student agency' was being explicitly constructed — an increase in the capacity and willingness of the student leaders to act upon issues that affect them (Holdsworth, 2000). Student agency moved beyond the walls of the College environment and despite the challenges of COVID-19, the Student Leadership Team experienced one of those silver-lining moments that actioned student agency. A significant responsibility emerged as the College moved to an online school community — that of strengthening connectedness to give each of the members of the extended Ursuline community a sense of hope for the future. Lead by the SLT, St Ursula's College launched a 'Yellow Hope Campaign' to spread compassion, optimism, and of course hope. The initiative aimed to encourage a movement within the community, across state, national, and international borders to tie a yellow ribbon, bow, or wreath in a visible place, as a public symbol that no matter what uncertainty there is in the world, we are hope-filled people. Through this, the girls initiated contact with their Ursuline sisters across the world through live online chats to make their global connections real, and together visibly showing a sign of solidarity and the sharing of this campaign of hope. Many ribbons were tied, including the largest tree in the gardens of the Generalate in Rome. Twenty-first century citizenship in action.

As the College moved towards the transition of the incumbent SLT to the incoming 2020-2021 team, conducting a comprehensive evaluation of successes and areas for development was imperative to improving this student-leadership model, ensuring both accountability and a direction for the future. The model is strong with the nomination and selection processes clear, fair, and transparent where the student-body voice (vote) is a component of selection, but not a determinant. Group interviews with a human resources facilitator (past student external to the College) proved to be successful and positive with students reportedly "enjoying the process and learning skills for future employment interviews", alongside the acknowledgement of the importance of communication in their positions of leadership and the public-speaking component of the selection process. Nominees and successful candidates have consistently expressed enthusiasm, and even gratitude, for the opportunities that they had to develop agency and competence. However, drawing on the qualitative data provided by the student leaders, a range of perspectives was identified that confirmed the need for improving the capacity of our students to learn how to be strong leaders, rather than relying on their innate traits.

Students referred to a range of situations calling for different types of leadership, having the need to respond and modify their behaviours, often by learning through experience and mistakes. Goleman (as cited in Archard, 2012) posits the view that a high level of emotional intelligence will support high performance, and an understanding of the components of emotional intelligence will prepare the girls for this role. This comes with the understanding that leadership can be both taught and developed within students, and the development of explicit leadership programs needs to be incorporated within the curriculum and co-curriculum programs. The students want the experiences to be meaningful, hands on, and practical. Are we as staff, making the most of the opportunities available in teaching leadership, using a common language and strategies to develop student agency, and facilitating opportunities to practice these?

Insights gleaned from research and particularly that of the work of Archard (2011, 2012, 2013) indicate that there is much to be learnt in the formation of female leadership identity and the impact of their same-sex peers on leadership attainment, capacity, and development (Archard, 2011). She leads us to the understanding that girls in a single-sex environment are heavily influenced by peer approval, and the fear of losing this will hinder them from undertaking leadership positions, particularly in a prominent role. Findings from student leaders confirm the influence of peers in applying for positions, their ability to work within the student groups, and the challenges associated with confronting peers in difficult situations. Much of the student leader's work is done alongside their female peers with a need to maintain relationships while still achieving the desired outcomes. The importance of relationships and leadership cannot be understated. While the student leadership model supports the bringing together and inclusion of girls from various fields in the school environment, ensuring a wide cross section of the student voice, the leaders need to be prepared for the diverse experiences they may encounter, particularly with peers. This reciprocal relationship between peers, behaviours, and leadership, continues to support and highlight the need to teach and explicitly embed the mechanisms and knowledge supporting respectful relationships, the key tenet for life both in school and out.

Coming to an understanding of the female construct of leadership will provide fertile ground for further research to enhance student leadership at the College and inform practice for preparing all the young woman at the College for future leadership. Archard's "Female Leadership Framework" (2013) provides a starting point to guide this next stage and again, the voice of the student will be sourced to dig a little deeper in understanding the influences on their construction of leadership. The involvement of key stakeholders is critical in shaping the design and delivery of the relevant and appropriate programs, where the role of the student is pivotal. Equally imperative is the value placed on evidence-based practices to ensure the delivery, adoption, and embedding of these pedagogies and programs. Leveraging the adherence to these principles, leadership should be visible through the flourishing of both the individuals and the College – within and beyond the school boundaries. ▲

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Feedback conversations to motivate adolescent girls' learning

KAREN LEWIS, ENGLISH AND LITERATURE TEACHER, ALL HALLOWS' SCHOOL, QUEENSLAND, AND GLOBAL ACTION RESEARCH COLLABORATIVE FELLOW

Reluctantly snatching the paper from her teacher's grasp, Sarah refused to look at the crisp white sheet in front of her. Instead, she folded it in half. Then in half again and again, until she could fold no longer. Shoving it in her satchel, she relegated it to the lunch wrappers and pencil shavings forgotten at the bottom of the bag. She looked sheepishly at her teacher when asked why she wasn't reading her draft feedback. "I never read it," Sarah replied. "It always makes me feel so bad about myself."

We've all taught students like Sarah — those who refuse to engage with teacher feedback on their work. Maybe they openly ignore it like Sarah, or perhaps we read their final papers only to discover it is identical to the draft, all our carefully considered feedback not applied. Or maybe we've encountered those students who look only at the grade on the final paper and not the comment we've laboured over; those students who then wonder why we are frustrated when they ask what they "need to do to get an A". There are so many reasons that students ignore our feedback: they don't understand it, they understand it but don't know how to apply it, or their emotions take over and they experience a mental paralysis that prevents them from even reading the feedback. The list is long. There's no doubt that teacher feedback can further student learning, but the reality is that it doesn't matter how good our feedback is, as feedback guru Dylan Wiliam says, "the only thing that matters is what the student does with the feedback" (2016, p.15).

The inaugural Global Action Research Collaborative (GARC), an initiative of the National Coalition of Girls' Schools, sought to learn more about feedback in girls' education. Fortunate enough to be selected as one of nine

teachers to take part in the pilot of this global program, I was keen to delve further into the theme "Feedback to move forward, thrive, and grow". While some of the GARC Fellows did fantastic work in the exploration of peer-feedback, self-reflection, and even feedback in the playground, I was keen to learn more about how I could encourage students to engage with the feedback that I and my English teaching colleagues at All Hallows' School in Brisbane were giving students. I wanted our feedback to be considered rather than ignored. I wanted our students to do something with the feedback. I wanted to support our girls.

Fortunately, I had the support of my incredible GARC colleagues on this action research journey. We shared our research, our discoveries, our time. We were listening ears and motivating forces. We gave wise words and encouraging smiles through our computer screens. To be surrounded by passionate teachers who wanted to support their students as much as I did was a blessing. Because then the COVID-19 pandemic arrived and changed everything. In Australia we didn't face anywhere near the challenges of some of our colleagues across the globe — not seeing a student in person for a year or teaching a sea of face masks from behind a classroom's Perspex screen is not the experience of most Australian teachers. But we did see a rapid decline in the already declining mental health of our students. They needed their teachers' support more than ever. And feedback that they could engage with was one way we could do that. Academic care was essential.

For years the teachers in the English Department at All Hallows' School have been consciously evolving feedback practices to better assist our students to improve confidence and the quality of their writing. In addition, we've been exploring aspects of academic care that support student resilience, and thus student willingness, to accept and apply feedback to their writing. Being part of GARC allowed me to engage in deliberate and recorded action research that explored the types of feedback that help our students become more resilient, confident and receptive to feedback. During the global pandemic might not have been the ideal time to embark on this research, but it certainly highlighted its importance.

The literature regarding some of these ideas — best practice feedback, what builds confidence and resilience in students, how girls learn — is extensive. Interestingly, though, I wasn't able to discover much that dealt with all three of these ideas together. So, I synthesised the literature with what I and my colleagues at GARC and All Hallows' had learned from experience. We know that girls are stereotypically social learners who thrive in collaborative situations and respond well if they have a strong working relationship with their trusted mentors. I also learned that students with a growth mindset tend to be more resilient, and that confident students are those who can clearly identify their own skill development. In addition, feedback needs to be given early in the learning process, should be personalised and, ideally, should involve dialogue.

Many researchers describe the timeliness of teacher intervention as imperative. For feedback to be useful to students' learning, they need to receive it early in the learning process (Funk & van Diggelen, 2017; Hattie & Timperley, 2007; Irons, 2008). Feedback should also be relevant and meaningful. Only the most important areas for improvement should be identified, and feedback should be clear and precise (Funk & van Diggelen, 2017; Grover Tuttle, 2013; Irons, 2008). I also discovered that we should be considering this relevant and specific feedback as a way of building student resilience. Noble (2007, p. 35) describes the positive impact of praising skills that are developed through hard work "despite obstacles". In fact, mastery of skills related to specific circumstances can foster a resilient response to a difficult situation (Hefferon & Boniwell, 2011; McGrath, 2007; Noble, 2007). So, I started to think about how I could give more specific feedback related to skill development — and perhaps how I could get students to identify this themselves — as a way of building their resilience.

Feedback also should involve dialogue or conversations to ensure understanding and student buy-in. If both the teacher and student are engaged in a conversation of sorts (verbal, written or digital), the teacher can respond more meaningfully to both the student's work and the student's understanding of the feedback (Black & Wiliam, 1998; Irons, 2008; Robinson, 2017). Furthermore, conversations can help to motivate students and make them feel heard (Irons, 2008), which links to Robinson's (2017, p. 23) assertion that there is "a lot of power in the one-on-one conversation … you're able to adapt the feedback you're providing accordingly". While I often have feedback conferences with my students, I started to consider how I could tap into this further, and especially how I could record these conversations for students to return to later.

Understanding that adolescent girls respond well to positive relationships and that they are social learners suggests that a conversational style of feedback would be useful to their learning process. Indeed, research suggests that meaningful relationships further help to build confidence and resilience in adolescents. Students who feel confident to develop skills, even when this involves making mistakes, tend to be those who have the "secure base of a warm/caring relationship" (Hefferon & Boniwell, 2011, p. 140). Fuller (2020, p. 1) explores this idea further and notes that girls, particularly those "who have a sense that [teachers] like them and are interested in them … will want to collaborate". Adolescent girls will be receptive to feedback if they are supported by mentors who have genuine care for their wellbeing. This is particularly important during the global pandemic.

These ideas regarding the development of confidence and resilience also tie in with what we know about how girls learn. According to the National Coalition of Girls' Schools (2016), "[g]irls are more likely to have a fixed mindset" than boys and are "prone to perfectionism and have a fear of failure" — factors that tend towards a lack of resilience. For this reason, strong and supportive relationships are essential for receptivity of feedback through conversation and can further support the development of resilience and confidence.

Positive teacher-student relationships can also be an important way of countering student reluctance to engage with feedback in the first place. Feedback has been shown to have a direct correlation with self-esteem, especially in adolescents who have a fixed mindset. Shields (2015, p. 615) found that "the emotions evoked from reading the feedback are so strong that they prevent the student using it to improve and develop". This reminded me of Sarah, who never read her draft feedback because it made her "feel bad", and gave me an understanding of what she was experiencing — she was having an emotional response to feedback which prevented her engaging with it. In her groundbreaking book Mindset, Dweck (2006, pp. 17, 29) also notes that for those "with the growth mindset, success is about stretching themselves" after receiving feedback, yet for those with a fixed mindset "one evaluation can measure you forever… [so] they must succeed perfectly and immediately". Instead of learning from feedback, adolescents — especially those with a fixed-mindset — may simply try to protect their self-esteem (Dweck 2006; Wingate, 2010) and, in so doing, not engage with or learn from the feedback.

I set about using these findings to design a conversational feedback model to trial with my two classes of Year 11 English Literature students. Keeping it simple was important — I used written feedback, given on the same page as their formative paragraph writing tasks, and I used a table format that would capture the feedback conversation between the students and myself. This conversation involved me giving them two key areas on which to focus, students responding seeking clarification or detail, and my response to these clarifying requests. The key part of the process, though, was the final part of the conversation: I asked my students to rewrite their paragraphs and annotate where they had applied the feedback. It was then a simple case of me checking that they had applied the feedback correctly. Here, they were identifying their own skill development and so building confidence. This confidence led to them seeking more feedback, which suggests more of a growth mindset and an improvement in their resilience. It turns out that having a conversation was just the starting point.

I spent some time surveying my students and engaging in focus-group discussions with them to determine whether my observations matched their own reactions to the change in feedback style. While many had originally thought it would take more time to engage in a feedback conversation, those who successfully engaged with the conversation feedback model ended up acknowledging that it took less time than the usual propositional feedback model. They also reported that it was more beneficial to their understanding of the feedback and their application of it to their writing. In fact, one student said, "I would do it for all my subjects", which is a great indication of the positive impact of this conversational approach. These students were either developing a growth mindset, or perhaps already had one.

When looking at the student rewrites and annotations of their work — their self-reflection as part of the ongoing conversations — the uptake of the feedback was clear. By encouraging students to identify exactly where they had applied the feedback they had been given, students were encouraged to rewrite their work, identify why it needed to be rewritten, and how to achieve improvement. Not only were these students being resilient in the face of some constructive feedback, but they were also learning from it to improve their writing, hence the skill development as described in the literature (Herreron & Boniwell, 2011; McGrath, 2007; Noble, 2007). Students, too, noticed the impact, with one stating that "being able to see how it did improve my writing and how I made progress with it … was really good". They were doing something with the feedback (Wiliam, 2016) and that something was good.

Students reported, even prior to the conversation feedback intervention, that feedback helped to improve their confidence, supporting the findings of the broader literature (Irons, 2008). This was borne out by the results of this action research project, which found that the self-reported confidence levels of students from pre- to post-intervention showed improvement. It was heartening for me to see that my action research suggests that feedback conversations were impactful for many students. This is especially significant given that the study was undertaken during 2020 when lockdowns occurred, and pandemic uncertainty and anxiety was at its height. I was engaging in the academic care that these students needed.

At the start of each school year I use the classic English-teacher strategy of asking my students to write a letter to tell me about themselves. At the start of 2021 one student, who had been part of this action research project in 2020, said (completely unprompted), "you could help me by giving me the same feedback type you gave last year". Such a simple request from this student indicates that through the conversation feedback model students were beginning to develop the skills to thrive and grow.

These findings may have happened organically over time if I had not been part of the inaugural GARC program, but GARC has given me the opportunity to formalise and cement both my hunches and my official

findings. The process was invaluable, which is why I was keen to continue my involvement with GARC. This year I am working as a Research Advisor for the next cohort of GARC Fellows. They can learn from my discoveries — and mistakes along the way — from someone who has been there. Three other inaugural GARC Fellows have also taken up this opportunity and together we are supporting the new Fellows through their work with problem-solving, another essential aspect to girls learning. I hope they have an experience as positive as mine.

I am continuing to evolve my feedback practice as a result of this action research project. I now use four guiding principles — based on the literature and my own action research findings — for how I give feedback:

1. feedback should be early in the learning process,
2. feedback should involve a recorded conversation that allows the student to feel valued and heard,
3. students need to be strongly encouraged to consciously apply the feedback as part of our ongoing conversation, and
4. student application of feedback needs to involve the opportunity to actively identify skill development themselves.

As teachers of girls, we know that the way we give feedback can have a significant impact on our students. These guiding principles are just one way we can engage in their academic care and get them to "do something" (Wiliam, 2016, p.15) with the meaningful feedback we provide. I can't help but wonder if I had known ten years ago — when Sarah was sitting in front of me in the classroom — what I know now, how I might have given feedback differently and how things might have been different for Sarah. So, I'm going to keep up the feedback conversations — for all the Sarahs out there. ▲

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IMAGE: ACADEMIC DIRECTOR MARGARET ADEANE SPEAKING WITH YEAR 9 STUDENT TELESIA ABOUT HER 'PERSPECTIVES OF AOTEAROA' PROJECT

'Brave not perfect': Global Action Research Collaborative

MARGARET ADEANE, ACADEMIC DIRECTOR, SAMUEL MARSDEN COLLEGIATE SCHOOL, NEW ZEALAND, AND GLOBAL ACTION RESEARCH COLLABORATIVE FELLOW

Who knew, when our inaugural group was selected for the Global Action Research Collaborative (GARC) on girls' education in November 2019, how truly uncharted the waters would be. In the year that followed, when events were distinctly global, the project proved to be aptly named.

The opportunity to connect regularly with my fellow researchers, nine amazing women from around the globe, was an unexpected gift. Our countries faced and dealt with the pandemic in different ways, but through our shared anecdotes, experiences, and research findings, we found that girls in our respective schools were dealing with similar challenges, emotions, and vulnerabilities. For me the opportunity to connect with teachers committed to girls' education from across the globe, at a time when New Zealand's international borders were closed and we felt very isolated, was invaluable.

Our group of GARC fellows met online to begin our action research journey at the start of 2020. We have yet to meet in person but have become supporters, critics, and colleagues in the best possible way. The 'umbrella' theme for all of us to investigate was feedback, with each of us exploring a context and aspect relevant to our own schools and students.

My focus was on ways in which teachers can use feedback to grow creativity, resilience, and innovation skills in a project-based learning environment. The aim was to encourage a 'brave not perfect' mentality in a high-achieving school, where success is traditionally linked to assessment. Prior to undertaking my own action research, I had seen evidence of schools that had embraced project-based learning as a successful way

of engaging disenfranchised students. I wanted to learn more about how project-based learning might empower 13 and 14-year old girls in our own school to become bolder, more independent learners, less dependent on grades and teacher approval as signifiers of their success.

Results matter to our students. A culture that measures its success by academic marks is deeply entrenched in our education system. Learning of content is prioritised. In creating our project-based classes, we wanted to place more emphasis on process over product. We wanted to push students into a different space where they chose something that they cared about, where they could find out more, try something new, take a risk, make mistakes, have some 'what if..' moments, and become drivers of their own learning. In doing so we sought to grow skills such as problem-solving, creativity, self-management, and resilience. This approach supports the vision laid out in the recently published paper *Schools of the Future* (World Economic Forum) which states that "creating learning ecosystems that are personalized and self-paced; accessible and inclusive; problem-based and collaborative; and lifelong - and student-driven can help unlock … the interpersonal and innovation skills needed for the future".

My findings were skewed by the pandemic when students made pragmatic decisions about what to prioritise. While there were many wonderful and brave projects completed, other students made little progress, not because of fear of failure but because in a drastically altered global landscape, there was a hunkering down and a focus on essentials. It was clear that for many, project-based learning was not a priority because in their minds, it did not have the status of the more mainstream subjects. There is still much work for us to do in helping students value the skills they acquire through independent learning.

Through structured feedback I sought to encourage students to articulate their own progress and learning — to know what their next steps needed to be. One-on-one interviews were a frequent feature of our lessons. While logistically these can be difficult to schedule, they are an invaluable tool and worth creating time for. I borrowed from the Carol Dweck mantra that praise can be dangerous and focused my positive feedback on process (determination, willingness to experiment, problem-solving, and creativity) rather than outcomes. When students know themselves what they have done well, and how they got there, there are long term benefits. This approach to feedback is one that has traction far beyond the project-based learning classroom and we hope to use it more widely in our school. We continue to tweak our project-based learning program and our systems for acknowledging skills and strengths. While process is important, a product does provide a goal and sense of satisfaction.

There were certainly moments for me, working on this action research project, over 18 difficult months in education, when failure seemed a likely and not particularly heroic outcome. I found myself needing to draw on the same skills I sought to develop in my students. It is always useful to get a little taste of your own medicine! My action research paper earns no grade, but I have enjoyed a great sense of personal achievement in its completion. I am grateful for the opportunity to have been part of the Global Action Research Collaborative and what a privilege it was to share the journey with a lively and resilient group of GARC fellows from around the world, all committed to girls' education. ▲

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Action research, Critical Friends Groups®, and a global teacher tribe: My learnings in the year of pandemic

LEANNE HORWITZ, HISTORY EDUCATOR AND DIRECTOR OF FACULTY FOR THE ARTS AND HUMANITIES, ST STITHIANS GIRLS' COLLEGE, SOUTH AFRICA, AND GLOBAL ACTION RESEARCH COLLABORATIVE FELLOW

When, in October 2019, I responded to an email from the National Coalition of Girls' Schools (NCGS), I had no idea how profoundly the world would change over the next year, nor how profoundly that email would change my own personal world.

The email was about a pilot program for the Global Action Research Collaborative (GARC) on girls' education. The topic was the role of feedback in girls' education, and I was excited to explore how peer feedback could help my students develop their One Research Task (ORT). The ORT is a year-long project undertaken during students' final year of school and takes the form of a mini-dissertation. Each mentor teacher (in the subjects History, Geography, Life Sciences, Business Studies, or Life Orientation) supervises this self-directed research project for approximately ten girls. I was concerned that students' research-task experience was limited by feedback coming almost entirely from their mentor teacher. I wanted to assess the impact that peer feedback might have on their engagement, learning experience, and achievement in the task.

Through the GARC program I gained numerous lessons and insights. Learning about the techniques of action research itself has made a large and very positive impact on my teaching practice. My learnings, through Critical Friends Groups[1], on the impact that peer feedback had on girls' comfort and enjoyment of their project, and on their engagement with the work, were profound. In addition, on a personal level, I learned the importance of a teacher tribe, especially in times of tribulation, and the joy that comes from working with an international cohort of fellows.

Action research is aimed at improving schools through looking inwards and to, as practitioners, "critically examine [our] own practice as well as how students learn best" (Mertler, 2019, p. 14). Teachers engaged in action research identify a problem in their practice, design an intervention to address that problem, and then collect data to assess how the intervention worked. As action research is focused on a practitioner examining her own practice, reflection is critical to the process (Mertler, 2019). Action research is thus an active and iterative process of improvement. What I found most impactful about action research is that it makes overt and structured what we as teachers do daily — we identify areas where we are falling short (problems of practice), try new approaches (design the intervention), observe the impacts of the new approach (gather data) and then we adapt and change our approach according to those observations (the iterative process). Where usual daily practice falls short, however, is in not having enough data to share or replicate our interventions and outcomes in the most effective manner. Action research, on the other hand, allows us to formalise, organise, and communicate our findings in an impactful manner. Indeed, as a result of my GARC research, I have decided to keep the Critical Friends Group (CFG) structure, with a number of tweaks, going forward. I will implement the structure not only for the ORT but also for various other projects in the younger grades. Several other mentor teachers for the ORT will also be using CFGs with their students. I am excited to continue to gather data and see if the results I found are replicated in other cohorts and other subjects.

In creating my action research project, I drew heavily on the work of the Annenberg Institute for School Reform at Brown University. A 1995 outgrowth of this work, the National School Reform Faculty (NSRF), makes use of professional learning communities called Critical Friends Groups (CFGs). This model provided the basis for structuring the groups in my study, even though CFGs were originally designed for teachers in service rather than for students. I was captivated by the idea of CFGs, and especially the protocols for feedback, which put value on collaborative problem-solving (Franzak, 2002). The term 'critical friends' implies not a usual friendship, but rather a collegial relationship where group members are trusted to ask provocative questions, examine work from a new perspective, and provide critique aimed entirely at improving the work (Comollo, 2019). The co-executive

1. Critical Friends Group® is a registered trademark of the National School Reform Faculty® (Harmony Education Center, 2021).

director of the NSRF at the time when CFGs were created explained that CFGs "enter into reflective dialogue … to critique the work in order to support improving it" (Baron, 2005). In her research on the system, Franzak (2002) noted that members saw CFGs as a valuable community and a space of safety. I saw this aspect as being especially useful in the high-stress context of my school.

In my findings, this idea of safety and comfort came through particularly strongly. The ORT can be a source of considerable anxiety for the students. In previous years this anxiety has persisted, and even mounted, throughout the process. This year, with the addition of the CFGs, there was a notable lessening of anxiety around the ORT, and less of the feeling of isolation that girls have often expressed in the past. Even in the short time they were together, the members of the CFGs developed deep bonds which is positive for the learning experience. The extent of this was clear when one student wanted to change her research area and her main concern was whether she would have to change CFG. She was adamant that she did not want to move groups and would rather keep the inferior topic, even though this might have had a negative impact on her marks.

Although often the girls did not fully trust the academic veracity of the feedback given to them by their peers, as opposed to teacher feedback, they expressed increased comfort in having a CFG, and found that explaining their work to others helped to clarify and solidify their thinking. There was positive emotional engagement when students worked in their CFGs, which was particularly noticeable in the type of feedback that students asked for. Although given the option to ask their peers for praise, the girls very seldom did this, preferring to ask for more rigorous critique. This to some extent points to the high-achievement environment of the school and the pressure girls place on themselves to achieve academically, but also indicates a high level of comfort with the CFGs.

In addition to the emotional engagement discussed above, I found that the use of peer feedback had a distinct impact on behavioural and cognitive engagement (Fredricks et al., 2004) even though the usual variances in individual levels of engagement occurred. In terms of behavioural engagement (participation in the task), all students displayed this to varying degrees. Interestingly, these levels of engagement were not necessarily tied to how engaged students usually are in class, which points to the use of CFGs as beneficial for students who might not be well-engaged in more traditional classes. Cognitive engagement (investment in the work of comprehending complex ideas) was somewhat harder to judge, although the quality and depth of discussion occurring in most of the groups was impressive. Based on observations, it was clear that the feedback being given was mostly of great value and cognitively challenging.

Even though implementation of peer suggestions was limited — a combination of distrust in peers' advice and time pressures — it was interesting to note that the fact that girls had to present aspects of their projects to their CFGs before submitting them to their mentor teacher, meant that the completion and submission rate was far higher than I have seen in previous years. The quality of the submissions was impressive. There was a clear depth of engagement, which increased with the amount of time groups spent discussing in their CFGs. This suggests that presenting to and being critiqued by the CFGs did indeed prompt students to submit better quality work. Even if students did not think that they made large changes in response to the CFG's feedback, it was clear to the teachers that the CFGs had made a positive impact on the quality of the work submitted.

The findings of this research have been important to my teaching practice, but the most profound impact on me has been through the process itself. Working with an international cohort of fellows, especially through the upheaval of Covid, has been enlightening and comforting. It has been fascinating to see both the similarities and differences to how girls' education works around the world, and how our schools have coped through the pandemic. In even the most trying and difficult stages of uncertainty, lockdown, and hybrid teaching, the 11.00 pm meetings with the GARC fellows were a time to look forward to and cherish. My newfound tribe of teachers from Australia, New Zealand, Spain, Canada, and the USA became a professional and personal support system. Following updates on their research has been enlightening and thought-provoking. As our cohort's year came to an end, I was offered the wonderful opportunity of becoming a research advisor for the second cohort of GARC fellows. My global teacher tribe continues to grow and with it my teaching practice. It is through GARC and everyone involved and committed to this program and to the advancement of girls' education globally that what could have been the most difficult, challenging year has become, for me, one of the most wonderful and rewarding years. ▲

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Aboriginal and Torres Strait Islander Girls STEM Mining and the Lands Camp

LISA FIELDHOUSE, ABORIGINAL EDUCATION CONSULTANT; DR DAVID MANDER, CONSULTANT, FUTURE FOOTPRINTS PROGRAM, ASSOCIATION OF INDEPENDENT SCHOOLS OF WESTERN AUSTRALIA (AISWA); HAYLEIGH DUCK, YEAR 11 BOARDING STUDENT, PENHROS COLLEGE, WESTERN AUSTRALIA

ADDITIONAL RESEARCH BY JAN RICHARDSON, DIRECTOR OF RESEARCH, ALLIANCE OF GIRLS' SCHOOLS AUSTRALASIA

Research and government reports clearly demonstrate that girls are much less likely to take up science, technology, engineering, and mathematics (STEM) subjects and careers, especially Aboriginal and Torres Strait Islander girls.

A 2021 report by the Australian Council of Educational Research (ACER) has found that while one in four university students enrol in a STEM field, only one in eight females commence a STEM degree. Furthermore, while female STEM students have a high degree completion rate, fewer than one in three are employed in a STEM-related field the year following graduation (ACER, 2021, p.1).

Even fewer are working in a STEM occupation five years after graduation. For example, the Department of Industry, Science, Energy and Resources's online 'STEM Equity Monitor' (2021a) calculates that of 25,502 university graduates in 2011, the majority (65 per cent) obtained a non-STEM qualification. The remainder obtained a health degree (19 per cent) or STEM degree (16 per cent). Of those with a STEM qualification, 62 per cent were male and 38 per cent were female. For female STEM graduates, only 26 per cent were employed in a STEM occupation by 2016. This translates to approximately 403 women out of 25,502 graduates working in STEM five years after graduation.

The figures are even more concerning for Indigenous Australians. Of the 25,502 university graduates in 2011, only one per cent identified as Aboriginal and/or Torres Strait Islander. The vast majority (90 per cent) received a non-STEM qualification. Of those with a STEM degree, 42 per cent were female and, of these, only 45 per cent

were working in STEM jobs by 2016 (STEM Equity Monitor, 2021a). Putting this into figures, there were approximately 255 Aboriginal and Torres Strait Islander graduates in 2011 of whom 26 gained a STEM degree and approximately 11 were female. By 2016, eight women were working in non-STEM fields and only three were employed in a STEM occupation.

YouthInsight was recently commissioned by the Department of Industry, Science, Energy and Resources to seek the views of educators who regularly work with Indigenous students regarding their experiences of engaging Aboriginal and Torres Strait Islander girls in STEM. Findings published on the Department's website (STEM Equity Monitor, 2021b) include:

- Aboriginal and Torres Strait Islander girls, particularly those in secondary school, were identified by teachers as having lower confidence levels than non-Indigenous students, leading to self-doubt.
- There is a need for more relatable role models in STEM, including from Aboriginal and Torres Strait Islander backgrounds, and particularly role models from these backgrounds who are female, local and/or within students' communities and schools.
- It is important to show the real-world connections and impact of STEM to make STEM learning more tangible to Indigenous students.

Educators involved in the survey identified making STEM education more relatable to female Indigenous students, along with helping them to identify educational and career pathways in STEM, as priority areas of engagement for Aboriginal and Torres Strait Islander girls (STEM Equity Monitor, 2021b).

The Indigenous Girls' STEM Academy launched by the National Indigenous Australians Agency (NIAA) is a ten-year, $25 million program to mentor high-achieving Aboriginal and Torres Strait Islander girls and women who aspire to education and careers in STEM. The Academy operates across Australia, offering a variety of opportunities, including the CSIRO Student Initiative which will support up to 1,000 Indigenous girls in Years 9 to 12, through tailored support, internships, and work experience. In addition, the Stronger Smarter Institute is offering a 'Teachers of STEM Initiative' which will support the training of up to 100 new, STEM-specialist, female Aboriginal and/or Torres Strait Islander teachers (NIAA, 2020).

Drawing inspiration from the NIAA's efforts to support Aboriginal and Torres Strait Islander women and girls to explore education and careers in STEM professions over the next ten years — and in partnership with AngloGold Ashanti and hosted by Curtin University — the Association of Independent Schools of Western Australia (AISWA) Future Footprints Program piloted an immersive five-day 'Indigenous Girls STEM Mining and the Lands Camp'. Specifically designed for students in Years 9 – 12, the camp sought to explore post-school pathways into future study and career opportunities in STEM.

A total of 25 young women from Australian Independent Schools Western Australia (AISWA), Catholic Education Western Australia and Department of Education schools applied to attend the camp held during the second week of Term 1 holidays. Eleven girls, from Years 9 – 12 and drawn from 10 schools located across Perth, were successful. The 11 girls undertook an extensive schedule of immersive activities, that included visiting several mine sites (with all safety equipment supplied), participating in robotics and geology workshops, and networking with representatives from AngloGold Ashanti and BHP. The girls spent time with mine-site rehabilitation expert and botanist Professor Kingsley Dixon and met with Curtin University Indigenous Chair of Biodiversity and Environmental Science Professor Steven van Leeuwen. They also attended the Western Australian Museum Boola Bardip, the South Metropolitan TAFE underground mine simulation centre, and toured St Catherine's College student accommodation at the University of Western Australia (UWA).

The camp concept was originally championed by legendary WA mining educator Odwyn Jones, former principal of the WA School of Mines in Kalgoorlie for fifteen years, and a long-time advocate of increased Aboriginal involvement in the state's mining and resources sectors. AISWA Aboriginal Education Consultant and Future Footprints Lead, Lisa Fieldhouse, said that the camp provided, "a fantastic opportunity for the girls to gain insight into the full breadth of possibilities that STEM can offer and the importance of conservation". She acknowledged the significant efforts Andrew Hannah and Tim Keely at Curtin University, and especially those of Josie McCafferty of AngloGold Ashanti, Keith Ross of TPG, and Odwyn Jones for making this opportunity possible. AISWA Future Footprints is now excitedly looking forward to planning the next Indigenous Girls STEM Mining and the Lands Camp in 2022.

Selected student reflections from the post-camp student survey

"My favourite part was going to the Talison mine, specifically the plant because I thought it was really cool and informative."

"My favourite part about the camp was going to see the open pit mine and going to the Perth Museum. This was my favourite because I hadn't seen an open pit mine before neither have I gone to a museum."

"I want to be able to look after the land and explore more plants and animals."

"It has made me more passionate about why I want to do what I want within the industry."

> "I think we really need more indigenous women in STEM to make a change to the way companies mine places without consulting the Indigenous people the land belongs [to]. [We need] to help form a bridge between the two and listen to what the Aboriginal elders of each mining area want to do."

It with great pleasure, and much appreciation, that AISWA Future Footprints offers these concluding reflections on the camp by Hayleigh Duck, a Year 11 boarding student at Penhros College.

Student camp reflection

Hi, I'm Hayleigh. I recently attended the first Girls STEM Mining and the Lands camp hosted by Curtin University and Future Footprints. The camp was held during the second week of Term 2 school holidays. Participants got the opportunity to tour Curtin's facilities and gain information on mining offers. It was an amazing opportunity which I was glad that I was able to be part of. It gave me a better insight into mining life and the massive range of jobs available in the mining industry. I went into the camp not knowing anyone and being the only Penrhos girl attending, but soon after arriving I made some amazing friends.

Throughout the five days we completed a few activities and made it to two mine sites. Some of the activities we did were robot programming, a tour around the campus, and many talks from those in the mining areas. We also had a networking night where we could discuss our life after high school and meet the sponsors of the camp. On the Friday we took a trip down to the ALCOA mine in Pinjarra and Talison mine. Talison Mine in Greenbushes was one of my favourites, as we got to see the super pit and tour the processing plant, seeing the way they process materials in every detail. The trips to each mine site were especially fun as we got to chat and get to know one another even more. We met biologists and environmental scientists, but a real stand out for me was meeting Professor Kingsley Dixon who is a profound biologist. He visited us when we stayed in Waroona campgrounds for a night. He spoke about his studies, and his aspirations and goals for the environment, especially the restoration of the jarrah forests. Waroona had a beautiful view of the lake and on our way back to Perth we stopped in Mandurah for a delicious meal on our last night.

Overall, the camp was one of the best opportunities I could have been given. At first, I was unsure about whether I really wanted to go but I am extremely glad I went. I made some amazing friends and got to tour some impressive mine sites. If anybody ever has this opportunity, you will not regret it. I now know my opportunities if working on a mine is something I want to do in the future. Future Footprints is amazing for their promotion of camps run by universities and I strongly suggest attending them, not just to learn, but make friendships. ▲

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The double disadvantage in numeracy

DR JAAI PARASNIS, SENIOR LECTURER AND DIRECTOR OF LEARNING AND TEACHING, DEPARTMENT OF ECONOMICS, MONASH BUSINESS SCHOOL, MONASH UNIVERSITY; DR MICHELLE RENDALL, SENIOR LECTURER, DEPARTMENT OF ECONOMICS, MONASH BUSINESS SCHOOL, MONASH UNIVERSITY; MOLLY PATERSON, CONSULTANT, KPMG AUSTRALIA

Lower educational achievement has significant and long-lasting social and economic consequences all through life. Hence, it is important to identify why educational performance gaps between students occur and how they evolve as a child progresses through schooling.

Gender and socioeconomic status are the two most widely documented drivers of educational performance. The present research started as part of Molly Paterson's Honours research project at Monash University, looking at how these two drivers lead to differences in educational achievements in Australia. Molly was supervised by Dr Jaai Parasnis and Dr Michelle Rendall, who have a continuing research focus on exploring gender gaps in educational attainment.

Test score gaps on the basis of gender have long been identified in the international literature; typically, male students perform better than female students in maths, while female students outperform male students in literacy (Le & Nguyen, 2018; Bedard & Cho, 2010; Fryer & Levitt, 2010; Husain & Millimet, 2009). This phenomenon is not limited to any one cultural context but is widely observed across countries (Bharadwaj et al., 2016; Hermann & Kopas, 2018; Gevrek et al., 2018). Parallel studies have found that socioeconomic status, such as household income and parental education, is associated with educational achievements (Trusty et al., 2000; Cobb-Clark & Moschion, 2015; Dahl & Lochner, 2017). Research has, thus, established that numeracy test scores are lower for girls than boys, and that they are lower for students from lower socioeconomic backgrounds than for those from higher socioeconomics status backgrounds. Our research extends this to investigate whether — and how — gender and socioeconomic status interact in their influence on numeracy test scores. Do girls and boys from lower socioeconomic backgrounds experience similar disadvantage? Or is the penalty (or advantage) imposed by socioeconomic background different for girls and boys?

Test scores from standardised tests are commonly used as a measure of academic performance. While this measure has its own strengths and limitations, it enables comparison across student groups over time. We focus on numeracy, a skill that is increasingly important in the labour market, and, in particular, we explore girls' disadvantage in this critical domain. Rendall and Rendall (2014) found that wage premium for occupations with a high maths requirement has been growing. While there is overall underrepresentation of women in STEM, it is particularly concentrated in maths-intensive fields (Kahn & Ginther, 2017).

We used data from the Longitudinal Study of Australian Children (LSAC), a national and representative Australian study which began in 2004 and collects comprehensive information about children's academic test scores, as well as socioeconomic and demographic backgrounds, from parents, teachers and children every two years. We used data from the kindergarten, or 'K' cohort, of 4,983 children aged 4-5 years in 2004, which provided us with scores from the National Assessment Program – Literacy and Numeracy (NAPLAN) numeracy assessments taken by students in Years 3, 5, 7 and 9 (ACARA, 2014). NAPLAN scores are standardised by grade with a mean of 0 and a standard deviation of 1 to allow comparison and interpretation of results (Le & Nguyen, 2018). The sample for analysis consisted of 3,087 children, where 48 per cent were girls.

Girls and boys start off with roughly similar scores, on average, in Year 3, but girls have 0.15 standard deviation lower scores by Year 9. This gender gap in numeracy cannot be explained by differences in household and school characteristics. In fact, controlling for these variables increases the gender gap. When we compare boys and girls from similar backgrounds, the gender gap starts as a small gap in favour of boys in Year 3 and widens in Year 9. So, does socioeconomic status play a

FIGURE 1: NUMERACY TEST SCORES

role? Yes. A child from a household in the top income deciles and a child with university educated parents has a steady advantage in numeracy scores from Year 3 to Year 9.

The effect of a household's socioeconomic status is not symmetric for boys and girls. Coming from the lowest decile income household (that is, a household with income in the lowest ten per cent) has no effect on boys but lowers girls' scores in Year 9 by an additional 0.3 standard deviations. We refer to this as double disadvantage. Girls have lower numeracy scores than boys (gender disadvantage) and girls — not boys — also experience socioeconomic disadvantage. This double disadvantage accounts for about one-third of the difference in boys' and girls' numeracy scores from Year 3 to Year 9. At the other end, coming from a top decile income household increases numeracy scores for boys, but this does not extend to girls. However, higher income does offer some mitigating effect on gender gaps. Even though it does not lead to higher numeracy scores for girls, the gender gap for girls from top income households does not widen over time.

Our research demonstrates the double disadvantage. Recognising it is a first step towards addressing it. Our results also suggest the way forward for addressing these gaps — 'who' should be the focus of efforts for closing numeracy gaps, 'when' is the most effective time to intervene to close the gaps, and 'how' can we close numeracy gaps? Girls from lower socioeconomic status backgrounds need to be the prime focus for numeracy skills development and should be supported by policies and programs designed to lift numeracy skills. In terms of timing, early years matter. Numeracy skills attained in Year 3 and socioeconomic status at that early age explain the majority of numeracy gaps in Year 9. This provides guidance for when interventions should be targeted — interventions in the early years will be most effective and have cumulative effects.

Our research suggests two main types of interventions. Firstly, schools can play an important role in addressing the double disadvantage experienced by girls. Our results show that most students start in public schools with no initial gender gap in Year 3, but among students attending fee-paying schools the gender gap is already substantial in Year 3. Among those who remain in the public system, the gender gap widens to 0.18 standard deviations in favour of boys in Year 9. On the other hand, girls in fee-paying schools manage to narrow the gender gap from Year 3 to Year 9. This could be due to school environments and/or parents making conscious decisions about school choice to address numeracy gaps.

Secondly, while income is important, family characteristics other than income also play a role. Mothers' education and labour force participation prevent the widening of the gender gap over time. This evidence suggests that regardless of income levels, girls benefit from their mother's education and employment. Thus, apart from the resource constraint within households, role models matter for girls. Efforts aimed at providing girls with female role models from STEM fields may potentially reduce some of the observed gender gap in mathematics (Olivetti et al., 2007).

We hope our research can inform school communities about how socioeconomic background can affect girls' numeracy achievements and exacerbate the gender gap as girls progress from Year 3 to Year 9. School communities can focus on early intervention for girls across the income spectrum, but especially for girls from lower socioeconomic backgrounds. While providing resources and support is important, it could be particularly effective for schools to provide strong role models. Teachers, school leadership, parents and alumni can provide a rich pool of diverse role models. These efforts can directly and indirectly work against the double disadvantages of gender and socioeconomic status documented in our study. ▲

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My Vital Cycles™: An ovulatory menstrual health literacy research project

FELICITY ROUX, PHD CANDIDATE, SCHOOL OF PUBLIC HEALTH, FACULTY OF HEALTH SCIENCES, CURTIN UNIVERSITY, WESTERN AUSTRALIA

This article updates the progress of an ovulatory menstrual (OM) health literacy research project at Curtin Medical School and the School of Population Health.

A key milestone was the publication of a systematic literature review of school-based OM health literacy resources (Roux et al., 2020). It considered the importance of OM health education and the barriers to its provision. Some questions have been adapted from this review which schools may find useful to ask before selecting a menstrual health resource.

The importance of OM health education

Why are some lessons remembered but not others? One answer is that learning used frequently, such as driving, even long after school ends, is not easily forgotten. Quality OM health education can have an enduring impact because the OM cycle is experienced daily for at least forty if not fifty years of life. Advances in Restorative Reproductive Medicine have promoted how the cycle is as much a "vital sign" (ACOG, 2015) as pulse, temperature, or respiration (Hillard, 2008; 2014; 2018), and that ovulation and menstruation are signs of good health (Chrisler & Gorman, 2016; Vigil, 2019).

This article uses terms such as females, girls, and women. These are used in relation to a person's sex (i.e. their biological characteristics or reproductive organs). It is recognised that this may differ from gender identity. For example, someone who menstruates may or may not identify as "female". The author believes anyone who menstruates should have the information and skills necessary to understand and manage their cycles.

Many girls though do not get a good start. The slow maturation of their reproductive system (Hillard, 2008) can manifest common OM problems, such as period pain, abnormal bleeding, irregular cycles, and premenstrual syndrome. These problems are associated with absenteeism from school and reduced concentration in class (Armour et al., 2019), body image concerns (Ambresin et al., 2012), the onset of eating disorders (Abraham et al., 2009; Drosdzol-Cop et al., 2017), mental health struggles including non-suicidal self-injury (Liu et al., 2018; van Iersel et al., 2016), and poor quality of life (Gallagher et al., 2018; Knox et al., 2015; Nur Azurah et al., 2013).

However, only 5.3 – 34 per cent of affected girls seek help (Armour et al., 2019; Parker et al., 2010; Subasinghe et al., 2016). It has been suggested that not knowing what is (or is not) normal means girls are less likely to voice concerns (McShane et al., 2018). This does not bode well. If there is an underlying pathology causing period problems, it will likely get worse and not better (Vigil et al., 2006). This is in addition to the cycle itself which can exacerbate existing diseases such as asthma and diabetes (Pinkerton et al., 2010).

Barriers in OM health education

OM health education could improve this situation. Since girls have reported not wanting the presence of boys when learning this subject, it is arguably easier to implement OM health education in an all-girls school rather than a co-educational school. Yet even in an all-girls setting, teachers are challenged with a crowded curriculum and restricted lessons. Another barrier is a possible reluctance to teach this taboo topic because of the shame and stigma surrounding menstruation (Chrisler, 2011; 2013; Johnston-Robledo & Chrisler, 2013). This is not aided by the sheer complexity of the cycle, which becomes apparent when girls try to apply lessons to their own immature cycles. Insufficient teacher training (Burns & Hendriks, 2018) is a further barrier. In addition, there are few evidence-based resources as discovered by the systematic literature review of Roux et al. (2020). It examined both black and grey literature yet had to exclude many programs because there was no evidence of their effectiveness in improving OM health literacy.

Selecting OM health resources

The *Period Summit* held in South Australia in June 2021 showed a burgeoning interest in this subject. A number of providers have stepped forward offering resources such as guest speakers, programs, and workshops on best practices and policies. The following questions may help a school select a quality resource.

What qualifies the resource provider?

Having certificates in science, naturopathy, or experience in a sexual health clinic gives a foundation. Yet even medical trainees in obstetrics and gynaecology have concerning gaps in their knowledge (Kudeisa, 2018). Formal training qualifications in OM health literacy, such as fertility awareness, reassures a school of a provider's competency and the accuracy of resources. *The Australasian Institute of Restorative Reproductive Medicine* lists the training authorities which offer accreditation.

How were the resources developed?

In a subject where misinformation is prevalent, accurate OM education informs girls about how their own bodies function, and helps sort fact from fiction (Chrisler, 2013). An accredited provider should be able to identify the best available scientific evidence from relevant health and educational research, which is then expertly combined with experience to develop resources. This evidence-informed approach however does not eliminate personal bias. An example is overusing metaphors (such as seasons or animals) to describe the cycle. This risks prescribing experiences, even behaviours, that not everyone will have, and overcomplicating an already complex subject.

An evidence-based approach to developing resources relies on stringent protocols to conduct research through validated scientific processes which are rigorous, transparent, and coherent with existing knowledge. This research project integrated the findings of its systematic literature review (Roux et al., 2020) with those of a Delphi panel (Okoli & Pawlowski, 2004). In this consensus methodology, over 30 experts in medicine, education, public health, and women's advocacy established content validity for a school-based resource.

This resulted in the drafting of a program and questionnaire with which to assess the program's effectiveness. More than 30 adolescent girls, their parents, teachers of science and health, and healthcare professionals then generously offered their opinions and suggestions on the drafts. This process recognised that each participant has their own values and perspectives, and what works for one will not work for another. These differences are factored in when developing a resource. For example, the name "My Vital Cycles™" was voted by adolescent girls to include gender neutrality. Another interesting development was a strong interest in peer-based teaching. As a result, the draft program was adapted to include a community element. This development coincidentally was in keeping with the "Health Promoting School framework" as advocated by the World Health Organization (Jones & Furner, 1998).

My Vital Cycles™ is currently being trialled as a pilot study in one single-sex school in Western Australia (Roux et al., 2019). Pre and post-test data will be collected to measure its effectiveness in improving OM health literacy. A qualitative commentary of its rollout is captured in real-time by students, teachers, and the school's healthcare professionals. Both the quantitative and qualitative insights will be fed into a refinement of the program in preparation for a larger scale multi-site trial.

What is the evidence that the resources improve OM health literacy?

Evidence-based research demands time, expense, and expertise. This may account for why few resources can claim to be evidence-based. Research however brings benefits, particularly in this health specialty. From an educational perspective, one benefit of research is a validated tool to assess the effectiveness of any given OM health resource. The question of their effectiveness in improving students' OM health literacy is valuable to measure particularly where resources are expensive or disrupt timetables.

Since it has been over 40 years that cycle knowledge was made publicly accessible (Billings & Westmore, 1980), it is heartening to see a growing interest in OM health. Caution is needed to ensure that resources are scientifically sound and grounded in defensible peer-reviewed evidence as well as both pedagogically and developmentally appropriate. Further research is warranted to ensure that tomorrow's women receive the knowledge and skills that women ought always to have had. ▲

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IMAGE: ILLUSTRATION OF A SPACE FOR BELONGING

Architecture can create a feedback loop about sense of belonging in boarding school

DR EMMA WHETTINGSTEEL, R+D RESEARCHER, COX ARCHITECTURE; LECTURER, CURTIN UNIVERSITY, WESTERN AUSTRALIA

While living in boarding schools, students can feel a strong pressure to 'belong'. This is understandable given that the 'sense of belonging' is a fundamental human need underpinned by the evolutionary role of groupwork for survival and success (Baumeister & Leary, 1995).

Relocation to a new physical environment, such as a boarding school, can therefore require a dramatic renegotiation of social 'fit'. While sense of belonging is shown to be an important motivator and component of wellbeing for all young people, for Aboriginal and Torres Strait Islander students the pull to 'fit in' at school can also echo the long historical pattern of forced choice between maintaining cultural identity and participating in Western education (see, for example Mander, 2012; Rogers, 2017; Redman-MacLaren et al., 2019). This should be of significant consideration for school providers and planners, as boarding school attendance has become increasingly synonymous with remote education provision in Australia — a trend which, though having now been examined and critiqued by a substantial body of published research, continues to grow in both policy support and financial investment.

The critical role of sense of belonging for physical and mental health is widely established. For example, social connectivity has been found to be associated with longer

lifespan (Giles et al., 2004), higher levels of resilience and reduced stress (Ozbay et al., 2007), greater perceived meaning of life (Lambert et al., 2013) and overall happiness and wellbeing (Baldwin & Keefer, 2019). The 'village effect' of high levels of sense of belonging and social connectedness has been associated with the longer and happier lives of residents within 'longevity hotspots', such as Sardinia, Italy and Okinawa, Japan (Pinker, 2015). Sense of belonging has also been shown to be 'good for business' in a recent publication for Forbes Business Council (Kaushal, 2020). In short, sense of belonging makes us happier, healthier, and more likely to succeed.

The 'village effect' of high levels of sense of belonging and social connectedness has been associated with the longer and happier lives of residents.

Similarly, perceived 'degree of fit' by students within the school social environment has been highlighted as a key determining factor in students' decision to remain in education institutions or not (Beal & Noel, 1980). A sense of belonging and 'fitting in' may often be considered more important than academic goals by students, with some studies indicating that perceived prevalence of bullying and teasing can be predictive of dropout rates for adolescents (Crosnoe, 2011; Cornell et al., 2013). This may be exacerbated by a change in learning structure, for example from a small rural primary school to a large city high school, or from the discipline of senior high school to the autonomy of university. While navigating this change, students must also manage complex new experiences, and learn to rely on an unfamiliar support network. The combination of these factors poses a potentially significant disruption to students' sense of belonging.

It follows then that 'belonging' is important for all students. However, it is currently not experienced equally in Australian schools. The 2018 Program for International Student Assessment (PISA) survey of 14,530 Australian 15-year-olds, including 2,807 Aboriginal or Torres Strait Islander students, found that students who were Indigenous, female, Australian-born, in the lowest socioeconomic status (SES) quartile, or living in provincial and remote areas felt the least sense of belonging in school (Thomson et al., 2019, p. 1). On the other hand, first-generation and foreign-born migrants, and students who are male, metro-based, or belong to the highest SES quartile reported the greatest sense of belonging (Thomson et al, 2019, p. 1).

These findings have direct implication for remote Aboriginal and Torres Strait Islander students, especially girls, who travel from remote places to attend metropolitan boarding schools.

One factor that could affect Aboriginal and Torres Strait Islander girls' sense of belonging at boarding school is the physical design of its architecture. The relationship between physical environments and mental and physical wellbeing is well established. For example, the field of environmental psychology shows through the study of environmental transactions that our feelings and behaviour are deeply informed by our relationships and interaction to physical places. In this evolutionary sense, spatial cognition is understood to have preceded language and 'thus the perception and cognition of visual and spatial information' is central to human thought (Butterworth, 2000, p. 10). By extension, the built (and therefore designed) environment has a significant impact on physical and social experiences for occupants, that can reinforce or challenge social values. Research from fields such as psychology (Mander, 2012) and education (O'Bryan, 2016; Rogers, 2017) indicate that Aboriginal and Torres Strait Islander students who attend boarding schools in Australia, though often placing high value on their education opportunities, also experience complex and serious social challenges. This can include a reduction in social and cultural responsibility compared to home, a sense of environmental and climate 'shock', and a difficulty in navigating unfamiliar surroundings (both in a social and physical sense). Given the evolutionary significance of physical environments for all people, as well as the strong cultural relationship between Australian First Nations people to Country, the role of architecture in boarding schools can be seen as a critical factor in supporting Aboriginal and Torres Strait Islander students' sense of belonging.

In response, my doctoral research conducted between 2017 and 2020 aimed to understand Aboriginal and Torres Strait Islander student's perceptions of the impact of physical design on their sense of belonging. The study used a Participatory Action Research methodology, within which a combination of semi-structured interviews (yarning) and arts-based methods (drawing) guided the collection of data around a large roll of brown paper (Images 1 and 2). There were fifty-two participants in total, including 27 current boarders (all Aboriginal people, two young men, 25 young women), 18 recent alumni (all Aboriginal people, three men, 15 women), and seven boarding-staff members (one Aboriginal person, all women). It should be noted that participants in this project self-identified as 'Aboriginal', 'Black', or 'Indigenous' and that there were no participants from the Torres Strait Islands. 'Aboriginal' has been respectfully chosen as the identifier for participants. Transcriptions of recorded yarns and drawings were analysed using a thematic analysis framework (Braun & Clarke, 2006), in addition to a constant-comparison style of reflection (Hewitt-Taylor, 2001) that took place by participants throughout the process. The ways in which physical design of space could affect sense of belonging came through in four main themes, summarised below.

First, 'place' identity emerged as an important factor in supporting students' sense of belonging for participants in this research. Boarding-school architecture was often characterised as institutional, cold, square, and structured. Further, there was a strong theme among student participants of feeling 'watched', for example through excessive camera surveillance: "Our boarding house, kinda feels like you're always being watched, because we always have cameras. There's like cameras down every hall. I feel like it's a bit excessive" (current student).

This was at odds with participants' description of belonging as being associated with warm, circular, open, and flowing spaces. For example: "Also, the dynamics of the area if that makes any sense. It's all just structure… if it was more loose, I want to say, you feel you're not on a tight strict plan. Everything is just so structured" (current student).

Going beyond these initial associations, student participants often demonstrated a deep concern with the recent and long-term histories of the sites (Country) on which their accommodation was built. For many this un-ease was exacerbated by a lack of access to information. Participants often proposed an increased communication of the places in which they were living to be embedded in the design of the environment, both in terms of knowledge from Traditional Custodians about Country and in relation to the specific history and occupation of the buildings. One past student explained the importance of location: "… someone later told me that … the boarding school is built on main burial grounds. Can't remember who told me, but someone told me. I was like, well we can never stop. That's why shit keeps happening here. So, that's something to take into consideration. Location".

Environment has a significant impact on physical and social experiences for occupants.

It was also stressed that buildings should be designed to feel more 'home-like' and less 'like a prison', through factors such as scale, density, landscaping, visibility of security measures, and type of entrance. The participants' voices suggest that place is an important part of Aboriginal young people's formation of their sense of identity, and in turn, their perceived identity of places has an important role to play in determining whether or not they will feel a sense of belonging there.

Second, the data suggests that interior architecture can be thought of as a 'social atlas' to help students navigate the positive and negative aspects of togetherness at boarding school. Participants often proposed increased flexibility and transitional options within the architecture of their accommodation, to allow for a diverse range of inter-connected social settings. In other words, it is important to avoid an 'all or nothing' approach to social interaction in which a student must choose between being completely alone or in a large group. Participants also reported social and spatial barriers to maintaining strong friendship groups with other Aboriginal students (for example, some participants described being told that they were too loud or excluding other students). It was seen by current and past student participants as important that non-Indigenous staff and students better understand concepts such as relatedness, kinship, and culturally-informed social obligations that underpinned the Aboriginal students' need for connection with one another while away from home. As one group of past students explained it: speaker 2: "We all drew together like that because then we could all speak like … " speaker 3: "This." speaker 2: "Normally. Laugh about this and that, but we had to do it secretly".

Possible spatial solutions described by participants included a variety of informal social spaces in which it was possible to spend time without creating disruption, outdoor social spaces, spaces for sharing cultural activities (such as an outdoor kitchen or fire place), and the embedding of social information into the built environment. For example, through co-created murals, carving names into a brick path, showing where students are from on a map, and how they are related. In this sense, interior design can be thought of as an atlas-like tool that can be interpreted and deployed by students to navigate boarding school.

Third, the role of architecture in creating a sense of belonging in boarding schools was often described in terms of the ongoing design activity available to students, and as their 'spatial voice'. Though the views collected in this research were diverse, there was a clear consensus that participation in the physical and social surroundings is an important part of feeling a sense of belonging, for example: "… to belong to something you have to give up something of yourself. You have to contribute, okay? So how do I contribute to the boarding house? I'm just here. That's not contributing. You have to contribute" (staff member).

However, there were many barriers described to feeling an active sense of participation and voice in the physical aspects of the boarding house. A commonly-repeated anecdote among student participants was that they were prevented from decorating their bedrooms (an activity identified by many as increasing their sense of belonging) due to the perception by staff that sticky materials would damage the walls, which were typically described as being painted brick or plaster. As one participant described: "There's a painting back home I would like to hang up, but there's no room. It's always what I dream about from home … Somewhere I can hang things on the wall. At home I can do that, but we weren't

allowed to at the boarding house" (current student).

Similarly, the effort required to continuously 'put up and take down' personal items across the year, due to the frequency of required room changes, became a barrier to engaging in this task for some. These examples reflect a broader conflict between the benefits of student spatial involvement and the need for efficient physical and social maintenance of a high-density housing environment by staff.

It is possible that strategic interior design could help to ease this tension. For example, relatively simple and cost-effective solutions (such as specification of wall coverings that can be decorated without damage, or the design of portable storage and display systems which can 'follow' students through room changes) could reduce administrative concerns relating to damage cost, while reducing task repetition for students. This would increase opportunities to adapt or decorate, and thereby implicitly communicate to students that they are important enough to make changes, that they have some control over their immediate situation, and that they should feel positively about expressing their identity. Further, the ability to display familiar and meaningful items (identified by staff participants as highly valuable in building early connection and trust with new students) provides a method of engagement with the school that does not require a compromise of cultural identity.

The fourth and final theme was that participants described a need for spaces of cultural and social relief within Euro-centric education environments. This can be broadly understood as the provision of a 'third space'. In a boarding school context, this also encapsulates the reported need for space to 'switch off' from school, and to 'switch between' different social and behavioural expectations. This was described often as the need for an 'escape': "… and everything we do here goes back to the school … and if something happens at school, it comes back here. You never really have an escape" (current student). "Like from school, switch off the rules" (current student).

Although there was a view within research that the whole school should encapsulate a culturally-safe space, there was a counterargument presented by many that this would require radical reflection and investment for most institutions, to the extent that it may not be a meaningful or realistic goal. As one participant described it, this would mean: "cultural change for the whole of Australia for that to actually happen" (past student). Rather, the suggestion from this research is to first create such a space on a small and focussed scale, with the goal of increasing cultural safety (and celebration) more broadly alongside systemic change in the long term.

Overall, the elements of interior design that affected student sense of belonging were not the same for each student. Of the students' spatial needs, some were explicit and could potentially be empirically measured. For example, the quantity and quality of occupiable outdoor space; whether or not there is a place to sit around a fire as a group; the level to which heating and air-conditioning is comfortable for students from diverse home climates; and if the students were allowed to "chuck a nail in the wall" (current student). However, other needs were less tangibly assessed, and their absences were felt implicitly. For example, the ability for students to feel that they could 'be themselves' without judgement from others; to not feel 'watched' or 'trapped' by the school outside of teaching hours; and for there to be a deeper sense of 'whole Aboriginality' within the environment (beyond superficial aesthetics). While difficult to quantify, these qualitative factors circled the broader question of: "Is it okay to be myself here?"

As described through the idea of 'spatial voice', the answers to this question were often subjectively assessed through the level of active involvement a participant felt they had in their environment. This suggests that ongoing participation in design, importantly by the students themselves, could contribute to a positive feedback loop between the individual and their surroundings. This idea of spatial feedback can be understood in relation to Hagerty's conceptualisation of relatedness (Hagerty et al., 1993, p. 291). This theory proposes that social connectedness emerges through a combination of 'Involvement' and 'Comfort & Sense of Wellbeing' (Figure 1). The authors reason that people can be physically present within an environment, but remain 'parallel' or 'enmeshed' without a sense of true connectedness. In line with this idea, a feedback model of belonging proposes that spatial actions (such as re-arranging furniture) send a message about comfort, wellbeing, and involvement needs. Further, this suggests that the level to which the environment can accommodate and reinforce these actions will contribute to the individual's sense of connectedness (belonging) with that place.

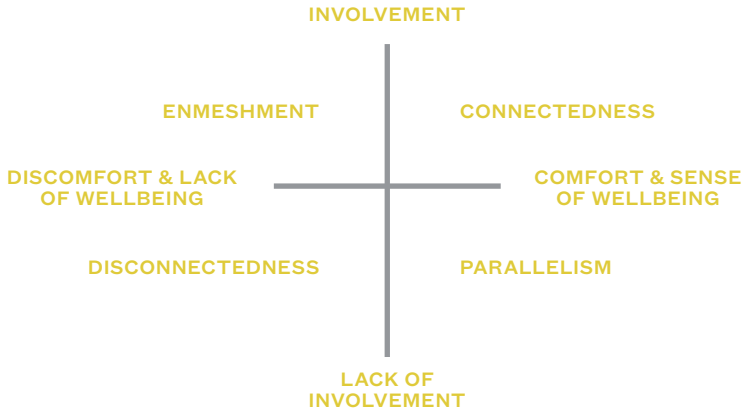

FIGURE 1: 'STATES OF RELATEDNESS' DIAGRAM REPRODUCED FROM HAGERTY ET AL., 1993, P. 291.

In summary, this research points to three central ideas for boarding-school planners. First, that the design of physical spaces matter. Second, that Aboriginal students can have spatial needs for feeling a sense of belonging at boarding school that may be different to non-indigenous students. Third, that design should not be thought of as a fixed thing, but as an ongoing and reciprocal everyday practice in which students are active co-creators. This means that belonging can be a two-way conversation between student and environment: call and response, by which messages of belonging are jointly constructed. Through this feedback loop, architecture could afford Aboriginal students an increased social agency in their relationship to education while living away from home in boarding school, and a space to be themselves. ▲

For more information about this research: (w) https://espace.curtin.edu.au/handle/20.500.11937/81961 (e) Emma.whettingsteel@cox.com.au

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Dealing with academic setback and adversity in effective ways: The role of academic buoyancy

ANDREW J MARTIN AND REBECCA J COLLIE, SCHOOL OF EDUCATION, UNIVERSITY OF NEW SOUTH WALES, NEW SOUTH WALES

How do students deal with academic setback? How do they bounce back from academic adversity? How do students navigate academic challenge? Academic buoyancy is an important part of the answer to these questions. Academic buoyancy is students' capacity to effectively respond to academic setback, adversity, and challenge (Martin & Marsh, 2008, 2009).

Academic buoyancy and academic resilience

There are two types of academic adversity: low-level, everyday adversity and chronic, acute, major adversity (Martin & Marsh, 2009).

Academic buoyancy is the personal attribute that helps students deal with low-level, everyday adversity. Academic resilience is the personal attribute that helps students deal with chronic, acute, major adversity.

There are many practical examples of how academic buoyancy and academic resilience can be distinguished (Martin & Marsh, 2009). For example:

- Academic buoyancy helps students deal with isolated poor grades and patches of poor performance — academic resilience helps students deal with chronic (ongoing) and acute (sharp, significant drop) underachievement.
- Academic buoyancy helps students deal with 'typical' stress levels and daily pressures at school — academic resilience helps students deal with overwhelming feelings of anxiety that are incapacitating or impair daily functioning at school.
- Academic buoyancy comes into play when dealing with a dip in academic confidence as a result of a poor grade or negative feedback from a teacher — academic resilience comes into play when dealing with chronically low self-esteem as a result of ongoing challenges at school.
- Academic buoyancy helps students deal with dips in motivation and engagement — academic resilience helps students who are withdrawn or disengaged from school.
- Academic buoyancy comes into play when dealing with minor negative interactions with teachers (e.g. critical feedback on schoolwork) — academic resilience comes into play when dealing with ongoing alienation from teachers.
- Academic buoyancy is implicated in responses to learning difficulties that are due to a lack

of effort — academic resilience is implicated in responses to learning difficulties that are due to a clinical condition such as dyslexia, attention-deficit/hyperactivity disorder, etc.

As these examples suggest, academic buoyancy is relevant to all students, whereas academic resilience is relevant to a critical minority of students. Given the applicability of academic buoyancy to all students, this is the focus of the present article. For more information on academic resilience see Martin (2013).

How do girls and boys compare on academic buoyancy?

There is now well over a decade's research into academic buoyancy. One of the most consistent findings is a clear gender difference in academic buoyancy: girls report significantly lower levels of academic buoyancy than boys (Colmar et al., 2019; Martin & Marsh, 2008).

This finding is notable because it identifies academic buoyancy as one of only a handful of motivational attributes not in favour of girls. Whereas girls typically demonstrate higher motivation and engagement than boys — when it comes to academic buoyancy, they consistently score lower than boys.

The reason for this is unclear, however, researchers have pointed to high levels of academic anxiety as a factor implicated in girls' low levels of academic buoyancy (Martin & Marsh, 2008). And because girls have higher levels of academic anxiety than boys (Martin, 2007), this anxiety could be a driver of girls' relatively lower academic buoyancy.

More research is needed to understand girls' academic buoyancy — and we discuss this further below.

What are the benefits of academic buoyancy?

Findings have revealed that academic buoyancy is positively associated with students' use of effective learning strategies (Collie et al., 2017), academic achievement (largely via its positive effects on students' confidence; Colmar et al., 2019), mental health (Martin et al., 2013; Martin et al., 2013), and reduced academic risk over time (Martin & Marsh, 2020). Research has also identified a particularly positive role for academic buoyancy among students who may be at-risk academically. For example, academic buoyancy is linked to positive academic outcomes for students with ADHD (Martin, 2014) and positive educational aspirations of Aboriginal students (Martin et al., 2013).

How can we boost academic buoyancy?

Academic buoyancy is clearly associated with many academic and personal wellbeing benefits. It is therefore important to develop educational strategies that can boost academic buoyancy among students for whom it is typically low. Girls are one such group of students.

The good news is that research shows educational intervention can boost academic buoyancy (Putwain et al., 2019). Here we suggest three ways to do this: (1) teach the academic buoyancy process; (2) target the 5Cs of academic buoyancy; and (3) connective instruction.

The academic buoyancy process

The first approach to boosting academic buoyancy involves teaching students the process of buoyancy and the key points of this process where they have control. The process (Martin & Burns, 2014; Martin et al., 2013) is as follows:

1. The student is taught how to recognise academic adversity;
2. The student adjusts their cognition (thinking), behaviour, or emotion to navigate the adversity;
3. This adjustment helps the student deal with the adversity;
4. The student recognises the benefits of this adjustment;
5. The student continues to engage in cognitive, behavioural, or emotional adjustment in response to adversity — leading to the development and maintenance of their buoyancy.

An important point here is to make clear to students that buoyancy does not just happen — there are identifiable steps where students can exert control and start shaping their responses to academic adversity.

The 5Cs of academic buoyancy

A second approach to building academic buoyancy involves targeting the 5Cs of buoyancy. Prior research (Martin, Colmar, et al., 2010) has identified a set of factors closely linked to academic buoyancy that are potential points for educational assistance. The 5Cs are:

- Confidence (self-efficacy)
- Coordination (planning)
- Commitment (persistence)
- Control
- Composure (low anxiety).

Of these five factors, it has been suggested that reducing anxiety ought to be a particular priority for girls. This is because anxiety is the factor most highly correlated with academic buoyancy (higher anxiety is linked to lower buoyancy) and girls tend to have higher levels of anxiety than boys (Martin et al., 2010).

Connective instruction

The third approach to enhancing academic buoyancy is to enhance teacher-student relationships. Positive interpersonal relationships are routinely identified as a vital buffer against stress and adversity. Recent research has suggested three key relationships to build into the everyday course of pedagogy — collectively referred to as 'connective instruction': the interpersonal relationship,

the substantive relationship, and the pedagogical relationship (Martin & Dowson, 2009; see also Martin & Collie, 2019)

- The *interpersonal relationship* refers to the relationship between student and teacher. It comprises strategies such as taking the time to listen to students' views, making a good teacher-student relationship a priority for instructional interactions, and giving students input into activities and decisions that affect them.
- The *substantive relationship* refers to the relationship between the student and what is being taught and what activities are assigned. It comprises setting work that is challenging but not too difficult, assigning tasks that are meaningful and significant, and injecting variety into teaching content.
- The *pedagogical relationship* refers to the relationship between the student and teaching. It comprises supporting students to succeed as much as possible, having multiple indicators of success in schoolwork (e.g., marks, effort, reaching goals), and providing clear feedback to students focusing on how they can improve.

More strategies are identified in the Connective Instruction Teacher Sheets available at www.lifelongachievement.com.

Next steps in academic buoyancy research among girls

In collaboration with the Alliance of Girls' Schools Australasia, we are embarking on an exciting program of research into academic buoyancy among girls. There are three major projects in this research program. The first will utilise an Australian database and seek to pinpoint instructional practices that are associated with greater buoyancy among girls. The second project will be a study of academic buoyancy among girls in Australia and New Zealand. The third aims to identify the role of academic buoyancy in girls' academic outcomes into the future. This program of work will be the first to examine academic buoyancy specifically among female students, the impact of instructional practices on academic buoyancy, and the long-term outcomes of academic buoyancy.

We look forward to sharing findings in due course! ▲

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Making thinking visible: The what, the why, and the how

DR RON RITCHHART, AUTHOR, RESEARCHER, SPEAKER, USA

"Learning is a consequence of thinking." When I first read this quote in David Perkins book, *Smart Schools* (Perkins, 1992), I was struck not only by its straightforward simplicity, but also by its power and importance.

The phrase itself has a kind of poetry that sticks in the head and is easy to remember. At the same time, it suggests meaningful action that has the potential to revolutionise teaching (I was a maths teacher at the time). If we take this sentiment to heart, that learning truly is a consequence of thinking, then we want not only to get our students to think but also to understand that thinking process as it is unfolding, so that we can support it, push it, and grow it. When we make thinking visible it not only gives us a window into what our students understand, the product of their thinking, but also how they are understanding it, the process of their thinking. Of course, uncovering students' thinking is likely to give us evidence of students' insights as well as their misconceptions.

We must also consider the converse of David's statement: what happens when students aren't doing much thinking? The answer is: not much learning, or perhaps just superficial knowledge acquisition if we are lucky. Teaching is not telling and the delivery of content at a preprogramd pace does not engender deep learning. Learning happens when students engage with ideas, when they ask questions, explore, and construct meaning with our guidance and support. Therefore, we need to make thinking visible because it provides us with the information, we as teachers need, to plan opportunities that will take students' learning to the next level and enable continued engagement with the ideas being explored. It is only when we understand what our students are thinking, feeling, and attending to that we can use that knowledge to further engage and support them in the process of understanding. Thus, making students' thinking visible becomes an ongoing component of effective, responsive teaching.

Making students' thinking visible serves a broader educational purpose as well. A purpose that goes beyond content to focus on the question: Who are our students

becoming as thinkers and learners as a result of their time with us? This question speaks to a purpose of education beyond the test — to a lifetime of learning, engagement, and action. It speaks to the very notion of identity. To develop this identity as a thinker and learner we need to demystify the thinking process and make it visible. When we do this, we provide models for students of what it means to engage with ideas, to think, and to learn. In doing so, we dispel the myth that learning is just a matter of committing the information in the textbook to one's memory. School no longer is about the 'quick right answer' but about the ongoing mental work of understanding new ideas and information.

Making thinking visible as a set of practices

Thinking is an internal process, something that happens in the workings of the individual mind. As such, it can seem mysterious and inaccessible — hence the need to make it visible. We use the term 'visible' here, to not just represent what can be seen with the eye, but also what we can perceive, notice, and identify. When we make thinking visible it becomes apparent to all, teachers as well as students. It then becomes something that can be analyzed, probed, challenged, encouraged, and advanced. There are four practices we can use to make thinking visible: thinking routines, questioning, listening, and documentation practices.

Most routines direct overt behavior, thinking routines direct and guide mental action.

Thinking Routines. Routines play an important role in ordering and structuring the lives of the group of individuals coexisting in a small space known as a classroom. Anyone who has spent time in classrooms can attest to this. However, for teachers concerned with promoting deep learning, the importance of routines extends beyond a managerial function. In my study of teachers adept at getting students to think, I found these teachers relied heavily on the use of thinking routines to structure, support, and promote students' thinking (Ritchhart, 2002). Although thinking routines have many similarities to other classroom routines, they differ qualitatively from these other types of routines in an important way. Whereas most routines direct overt behavior, thinking routines direct and guide mental action.

Over the past two decades, my colleagues and I at Project Zero at the Harvard Graduate School of Education have taken the idea of thinking routines, which has its basis in the best practice of exemplary teachers and developed many new thinking routines. We've written about these in the books *Making Thinking Visible* (Ritchhart et al., 2011) and *The Power of Making Thinking Visible* (Ritchhart and Church, 2020). Routines such as 'See-Thinking-Wonder' and 'I used to think … Now I think …' have become common place in classrooms around the world. Such routines exist as tools that promote and scaffold specific thinking in which we want learners to engage (looking closely, building explanations, making connections, wondering, for example), as structures that guide the discussion and exploration of ideas, and finally as patterns of behavior that become part of the way students go about learning in the classroom.

Questioning. We have found that one cannot be effective in making thinking visible without asking what we call facilitative questions. These are questions that probe students' responses, demonstrate our interest in their thinking, and provide the opportunity to go deeper. Our favorite facilitative question is: "What makes you say that?" We even presented this question as its own routine in our first book, abbreviating it as WMYST? Teachers have called it "the magic question" because of the way it unlocks students' thinking, often revealing the unexpected thinking behind an answer. Teachers have remarked that through their regular use of WMYST? they learn so much more and have much deeper conversations with their students, their friends, and family. We have found that the wording of this question seems to strike just the right tone with people and invites them to elaborate on, and clarify, their ideas in a non-threatening way. Of course, questions like, "Tell me why?" or "What's your reason for that?" are also facilitative and serve the same role. However, they seem not to carry the same level of openness and interest as WMYST? In using facilitative questions, the teacher's goal is to try and understand the student's thinking, to get inside their head, and make their thinking visible. Thus, we switch the paradigm of teaching from trying to transmit what is in our heads to our students, to trying to get what is in students' heads into our own.

Research has shown that the majority of questions teachers ask in traditional classrooms are review questions (Goodlad, 1983; Boaler and Brodie, 2004; Ritchhart, 2014). These questions sound like a mini-quiz and tend to emphasise the recall of knowledge. However, our own research has shown that when teachers embrace the goal of making thinking visible, most questions they ask are facilitative in nature. When one is more curious about the thinking and less interested in hearing correct answers shouted back at you, this shift is natural.

Questions not only drive thinking and learning but are also outcomes of it. As we engage with new ideas and develop our understanding, new questions emerge. Voltaire famously said to "Judge a man [sic] by his questions rather than by his answers", as they are likely to reveal a person's real depth of understanding as well as their engagement with the issue.

If questions are important vehicles for learning, they shouldn't totally be the purview of teachers. Questions are one of the most powerful ways students express their thinking, enhance problem-solving, monitor understanding, and improve as active and autonomous learners (Aguiar, 2010). Across most disciplines, providing structures and opportunities for student questions are cited as essential for student comprehension, self-assessment of content, and intellectual engagement (Engel, 2016). In addition, student self-generation of questions related to the material they are studying was more beneficial to recall than restudying of the material (Ebersbach, 2020). Research suggests that once suitable conditions are established, students' questions improve both in frequency and in quality (Aguiar, 2010). Therefore, we need to provide students with both the structures and opportunities to ask and explore their questions. Unfortunately, student-asked questions, those focused on ideas and not the logistics of assignments, are too often few and far between (Carlsen, 1991).

Questions not only drive thinking and learning but are also outcomes of it.

Listening. Of course, there is no reason to ask good questions if one is not listening for the answers. It is through our listening that we provide the opening for students to make their thinking visible to us. It is only when students know that we are truly interested in their thinking that they will have a reason to share it with us. Thus, listening is not only a practice we must engage in, but also a stance we assume in the classrooms as teachers. This stance is reflected well in Reggio Emilia's 'pedagogy of listening'. They feel that listening must be the basis of the learning relationship that teachers seek to form with students. Within such a learning context, "individuals feel legitimated to represent their theories and offer their own interpretations of a particular question" (Giudici et al., 2001). As the feminist poet Alice Duer Miller observed, "Listening is not merely not talking", it is "taking a vigorous, human interest in what is being told us". This vigorous, human interest allows us to build community in the classroom and develop interactions that pivot around the exploration of ideas.

Researchers English et al. (2018) refer to this vigorous interest as 'empathetic listening' in which teachers listen "to and for the learner's own understandings, feelings, and perspective around an idea or situation, while actively setting aside one's own interests, needs, perspectives, and judgments". The intent of this kind of listening is to understand the learner's perspective and personal sensemaking. As we listen in this way, we may find ourselves reflecting on our understandings of the topic being discussed or students' thinking may change our own perspective.

This is not the only type of or purpose for listening, however, particularly in educational settings. English et al. (2018) also identify 'educative listening' in which we listen for and attend to the struggles, challenges, and confusions of learners. Here we must strive to identify when a student's challenge can lead to a productive struggle with the ideas and eventually yield new insights for that student versus when the challenge is overwhelming and likely to cause a student to shut down. Finally, there is "generative listening" in which we listen for ways students' thinking and ideas might generate new opportunities for exploration or expansion of our goals.

Documentation. The processes of thinking and learning can be both elusive and ephemeral. Documentation is the effort to capture this process in as much richness as possible. But where does thinking reside? Is it in the answers students give us? The finished work they offer? While these artifacts may contain residues of thinking, too often the thinking and learning are obscured in the effort to get good marks and produce correct answers. We are more likely to find thinking in the messy process of working through ideas over time as we grow our understanding, as opposed to just the final product. When we can capture this process, it provides us with a vehicle for analysis of, and reflection on, the thinking.

My Harvard colleagues, Mara Krechevsky, Terri Turner, Ben Mardell, and Steve Seidel have been investigating how documentation supports students' learning and teacher growth for decades. They define documentation "as the practice of observing, recording, interpreting, and sharing, through a variety of media, the processes and products of teaching and learning in order to deepen learning" (Given et al., 2010). Embedded in this definition is the idea that documentation must serve to advance learning, not merely capture it. As such, documentation includes not only what is collected, but also the analysis, interpretations, and reflections of the thinking and learning that took place. In this way, documentation both connects to the act of listening and extends it. To capture and record students' thinking, teachers must be vigilant observers and listeners. When teachers capture students' ideas, they are signaling that those ideas and thoughts have value and are worthy of continued exploration and examination.

Documentation of students' thinking serves another important purpose as well, in that it provides a stage from which students may observe their own learning process, make note of the strategies being used, and comment on the developing understanding. The visibility afforded by documentation provides the basis for reflecting on one's learning and for considering that learning as an object for discussion. In this way, documentation demystifies the learning process both for the individual as well as

the group, building greater metacognitive awareness in the process. For teachers, this reflection on students' learning functions as assessment in the truest sense of the word since rich documentation provides a rich and potentially illuminating glimpse into students' learning and understanding. To uncover this richness, we often need more sets of eyes than ours alone. Sharing documentation with colleagues can lead to rich discussions of learning and allow us to see and notice aspects of students' thinking and implications for instructions that we, as teachers working on our own, might easily miss.

Making thinking visible as a goal

We can name and even implement these four methods of making thinking visible individually, however, the true power of these practices emerges when they are used in conjunction with one another. Thinking routines come to life in a classroom when they are supported by listening, questioning, and documentation. Indeed, we have seen time and time again that when routines exist in isolation, they may be little more than activities and lack much power. And although we might choose to focus on one specific practice over another in a particular moment, teachers frequently find it is the synergy created that truly promotes students' thinking and makes it visible. Finally, we cannot divorce the practices from the broader goal of promoting thinking. If we believe learning is a consequence of thinking, that goal guides us in all we do as teachers. ▲

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School is supposed to be stressful

DR LISA DAMOUR, CLINICAL PSYCHOLOGIST, USA

Let's start with a look at a fundamental cause of school-related distress for girls: their misunderstanding about the very nature of stress.

Stress, as we know, is often constructive, but adults in our culture sometimes wrongly believe that it's invariably harmful and hand this view down to their daughters. In truth, being pushed beyond one's comfort zone is often a good thing, and the stress that students encounter at school for the most part happens to be the healthy kind. All growth comes with some discomfort, and we send our children to school precisely so that they will be stretched and improved.

There's really no better metaphor for the healthy stress of school than the strength-training model of progressive overload. The most effective way to build strength is by gradually lifting heavier and heavier weights. The term progressive overload describes the familiar training program of adding repetitions or lifting bigger dumbbells over time to trigger muscle growth.

School, ideally, is one long program of academic progressive overload. From the day a child first steps foot in a school building until the day she graduates, her teachers should steadily increase the difficulty of her work. As soon as she masters new material, they should give her something more challenging. This is all obvious, of course. But many adults and students have collectively lost sight of the reality that getting smarter — like getting stronger — is often an uncomfortable process.

Girls who believe that stress can never be good find school to be doubly trying. They feel stressed by their academic demands (as, mostly, they should), but they also feel worried about the fact that they are stressed. That second dose of psychological strain is unnecessary and unhelpful. Here's the good news: research demonstrates that we can change how girls think about the demands of school. In order to study people's mindsets about stress, researchers randomly assigned people to one of two groups. The first group was shown videos that explained how stress can benefit the body (naturally using muscle building as an example), enhance creativity, build relationships, and help people succeed in clutch moments. The second group watched videos detailing how stress can harm physical health, mood, and self-esteem, and lead people to freeze up when the stakes are high.

When the experimenters surveyed the members of the two groups several days later, they found that those in the stress-is-helpful group reported improvements in their mood and in the quality of the work they were

doing. The stress-is-harmful group, though, did not report such changes. From this the researchers surmised that the bad news they learned about stress only reinforced what most people already believe, so nothing had changed for them. In a similar vein, a different study found that teenagers with a stress-builds-strength mindset were much less upset by difficult life events, such as having a close friend move away or having their parents separate, than those with a stress-is-harmful mindset.

Our view of stress can even alter how our mind and body react to it. In other research, one group of participants was taught that the bodily response to stress, such as a racing heart, actually improves performance. A second group was told that the best way to manage a worrisome situation was to try to ignore the source of the stress. After that, participants in both groups were hooked up to heart monitors and asked to do something that almost anyone would find nerve-wracking. They gave a five-minute speech to a hostile audience made up of research team members who frowned, crossed their arms, and furrowed their brows while listening.

This study, like the one before it, found that it's helpful to embrace the benefits of stress. The participants who were taught to welcome the physiological arousal that comes with tense situations found the speech task less demanding and even had a milder cardiovascular response than those who had been told to try to ignore whatever got them worked up.

We can bring these research findings home to our daughters through our own responses to their complaints about school. When our girls are young and grouse about disliking a particular teacher, being annoyed by certain classmates, or dreading a given subject, we can say, "Yep. I get it. There will always be aspects of school you don't like. But figuring out how to succeed under imperfect conditions is a big part of what you learn how to do at school."

As our daughters age, we can talk in more direct terms about the progressive overload model of education. I often point out to high school girls that their demanding programs are designed to help them build the mental brawn and endurance they'll need to take on life after graduation. I'll note that, for many students, ninth grade is like an orientation to the weight room. It can be a relatively gentle introduction to the brain building that's ahead. In tenth grade, however, we basically lock girls in the weight room for a steep intellectual training program. Indeed, the sophomore year is much harder than we tend to acknowledge. Tenth graders often take chemistry, a subject that requires them to apply their math skills to a brand-new field that comes with a totally unfamiliar set of principles. And ambitious high school students often take their first AP class — with its college-level workload — during sophomore year.

The intensive mental workout of tenth grade makes it possible for girls to meet the high demands of their junior year, when their workloads increase further still (often through the addition of more AP classes), and many tack on the challenge of preparing for and taking college placement exams. For the college-bound, senior year takes the training program up one notch more by throwing the demands of the college application process on top of everything else. When we think about school this way, we gain a fresh appreciation for how our daughters transform from capable eighth-grade colts into the work horses we see at high school graduation.

It's important to frame the demands of education in positive, capacity-building terms, because doing so actually changes how our daughters experience school. Girls go from feeling hammered to feeling fortified (if often exhausted) by it. Happily, there's more than one way to make this point. Sometimes, we can celebrate the awesome gains girls are making thanks to their intellectual workouts. And at other times, we can talk with our daughters about how their downtime, just as in weight lifting, is a critical component of their ongoing growth.

When visiting schools around the country, I often ask groups of high school students how they recover from having a very bad day. I always receive a wide range of answers. Some students take naps; others have a good cry in the shower. Some play with the family dog; others clean up their rooms, watch a favourite episode of a show for the umpteenth time, go for a run, or listen to their happy, angry, or sad music playlists.

I have found that students love to reflect on their preferred strategies for putting themselves back together, and once we've come up with lots of examples, I always end our meetings by making two points. First, recovery strategies are highly personal. What works for one person won't necessarily work for another, and everyone needs to figure out what works best for them. Second, having a good recovery strategy is vital because, as with muscle building, intellectual growth depends on both doing hard work and replenishing one's reserves.

In short, how girls view the mental strain that comes with learning makes a big difference. Students with the stress-is-harmful mindset approach school as a demoralizing merry-go-round where the routine burdens of school interfere with the goal of feeling relaxed. The stress-is-helpful view can turn school into a beneficial, progressive program that builds capabilities by alternating periods of demand with interludes of recovery. In the plainest terms, Monday morning feels far better for the girl with the stress-is-helpful viewpoint than it does for her stress-is-harmful counterpart. ▲

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Instructional rigour: Myths and realities

DR BARBARA R BLACKBURN, EDUCATION CONSULTANT, USA

When you hear the word rigour, what is your first response? Maybe it's a negative one — rigour means hard, rigour means more homework, the most failures in a classroom, high cut scores on standardised testing, or rigour is only for gifted or honors students.

However, rigour is not necessarily a bad thing, if effectively incorporated into your instruction. Rigour reflects higher-order thinking and appropriately challenges students to learn at higher levels when implemented correctly.

Before we look at what rigour is, let's take a moment to look at the myths that distract from true rigour.

Myth #1: Lots of homework is a sign of rigour

For many people, the best indicator of rigour is the amount of homework required of students. Some teachers pride themselves on the amount of homework they assign, and there are parents who judge teachers by homework quantity.

Realistically, all homework is not equally useful. Some of it is just busywork, assigned by teachers because principals or parents expect it. One study (Wasserstein, 1995) found that students described busywork as unimportant and, therefore, not satisfying. Contrary to what many adults believe, students viewed hard work as important, and they enjoyed the challenge and sense of pride that went with accomplishing a task that was hard.

Homework, if timed incorrectly, may do worse than bore; it could lead to incorrect understanding. This is not an indictment on homework but rather how it is used. Homework should be considered independent practice. Assigning homework before students understand a concept or procedure will result in students either giving up on the assignment, seeking help from others who may or may not understand what to do, or even to guessing how to complete the work. Thus, students must understand what, why, and how, before they are assigned homework. Homework should consist of items and questions which students have sufficient background to complete accurately and with meaning.

Amount and type of work should both be considered before homework is assigned. For some students, doing a higher quantity of homework leads to burnout. When that occurs, students are less likely to complete homework and may be discouraged about any learning activity.

"Doing more" often means doing more low-level activities, frequently repetitions of things already learned. Such narrow and rigid approaches to learning do not define a rigorous classroom. Students learn in many different ways. Just as instruction must vary to meet the individual needs of students, so must homework. Rigorous and challenging learning experiences will vary with the student. Their designs will vary, as will their duration. Ultimately, it is the quality of the assignment that makes a difference in terms of rigour.

Myth #2: Rigour means doing more

Many parents and educators believe that a rigorous classroom is characterised by requiring students to do more than they currently do, and that rigour is defined by the content of a lesson, the number of problems assigned, the amount of reading, or the number of requirements.

True rigour is expecting every student to learn and perform at high levels, even higher than they are currently achieving. This requires instruction that allows students to delve deeply into their learning, to engage in critical thinking and problem-solving activities, to be curious and imaginative, and to demonstrate agility and adaptability (Wagner, 2008). Simply put, more is not necessarily better, especially when more is low-level or repetitive past mastery. This belief is not counter to practice, which is an incredibly valuable step in the learning process. Rather, providing redundant tasks not intended to improve learning or retain information is simply asking for students to complete work that fills a time gap, not a learning gap.

Myth #3: Rigour is not for everyone

Some teachers think the only way to assure success for everyone is to lower standards and lessen rigour. This may mask a hidden belief that some students can't really learn at high levels. You may have heard of the Pygmalion Effect: students live up, or down, to our expectations of them.

I was recently working with a school that had one solution for increasing rigour — put all students in advanced classes. That may be an option, but we're not convinced there is only way to increase rigour for all students. First, although the intention is excellent, not all students, especially those with special needs, are ready for an advanced class without extra support. Second, that

choice sends the message that the only teachers capable of rigorous instruction are those who teach advanced students. We know from our own experience as teachers of students who perform far below their grade level that any teacher can be rigorous, and any student can reach higher levels with the right support. In fact, that is the exact purpose of this article — to show you how to provide rigorous instruction within your classroom to those students with special needs.

Myth #4: Providing support means lessening rigour

In the United States, we believe in rugged individualism. We are to pull ourselves up by our bootstraps and do things on our own. Working in teams or accepting help is often seen as a sign of weakness. However, supporting students so they can learn at high levels is central to the definition of rigour. As teachers design lessons that move students toward more challenging work, they must provide scaffolding to support them as they learn.

Ron Williamson, co-author of my books on leadership and rigour, asked teachers and parents about their experience with rigour. Both groups repeatedly told stories of how successful they were on rigorous tasks when they felt a high level of support, a safety net. Often, people described tasks that were initially not successful. Only after additional time or effort did they experience success. In fact, many people said they would not have been successful without strong support.

The same is true for students. They are motivated to do well when they value what they are doing, and when they believe that they have a chance of success. The most successful classrooms and schools are those that build a culture of success, celebrate success, and create a success mentality.

Supporting students so they can learn at high levels is central to the definition of rigour.

Myth #5: Resources equal rigour

Another common refrain is "if we bought this program or textbook or technology, then we would be rigorous". We've worked for and with multiple publishing companies and we have learned a critical lesson: it's never the resources; it's always how you use them. Mediocre materials in the hands of a great teacher are effective. Excellent material used by a poor teacher provides minimal results. And excellent materials with an excellent teacher can work wonders.

The right resources can certainly help increase the rigour in your classroom. However, raising the level of rigour for your students is not entirely dependent on the resources you have.

Defining rigour

My definition of rigour has a sharp focus on instruction. In *Rigor is Not a Four-Letter Word* (Blackburn, 2018) , I define rigour as "creating an environment in which …

- each student is expected to learn at high levels,
- each student is supported so he or she can learn at high levels, and
- each student demonstrates learning at high levels".

Notice we are looking at the environment you create. The tri-fold approach to rigour is not limited to the curriculum students are expected to learn. It is more than a specific lesson or instructional strategy. It is deeper than what a student says or does in response to a lesson. True rigour is the result of weaving together all elements of schooling to raise students to higher levels of learning. Let's take a deeper look at the three aspects of the definition.

Expecting students to learn at high levels

The first component of rigour is creating an environment in which each student is expected to learn at high levels. Having high expectations starts with the recognition that every student possesses the potential to succeed at his or her individual level.

Almost every teacher or leader we talk with says, "We have high expectations for our students." Sometimes that is evidenced by the behaviors in the school; other times, however, faculty actions don't match the words. There are concrete ways to implement and assess rigour in classrooms.

As you design lessons that incorporate more rigorous opportunities for learning, you will want to consider the questions that are embedded in the instruction. Higher-level questioning is an integral part of a rigorous classroom. Look for open-ended questions, ones that are at the higher levels of Bloom's Taxonomy (analysis, synthesis).

It is also important to pay attention to how you respond to student questions. When we visit schools, it is not uncommon to see teachers who ask higher-level questions. But for whatever reason, we then see some of the same teachers accept low-level responses from students. In rigorous classrooms teachers push students to respond at high levels. They ask extending questions. Extending questions are questions that encourage a student to explain their reasoning and to think through ideas. When a student does not know the immediate answer but has sufficient background information to provide a response to the question, the teacher continues to probe and guide the student's thinking rather than moving on to the next student. Insist on thinking and problem solving.

Supporting students to learn at high levels

High expectations are important, but the most rigorous schools ensure that each student is supported so he or she can learn at high levels, which is the second part of our definition. It is essential that teachers design lessons that move students to more challenging work, while simultaneously providing ongoing scaffolding to support students' learning as they move to those higher levels.

Providing additional scaffolding throughout lessons is one of the most important ways to support your students, whether diagnosed with a learning disability or not. Oftentimes, students with disabilities have the ability or knowledge to accomplish a task, but are overwhelmed at the complexity of it, therefore get lost in the process. This can occur in a variety of ways, but it requires that teachers ask themselves during every step of their lessons, "What extra support might my students need?". Examples of scaffolding strategies:

- Asking guiding questions
- Chunking information
- Highlighting or colour-coding steps in a project
- Writing standards as questions for students to answer.

Using visuals and graphic organisers such as a math graphic organiser for word problems, maps to accompany history lessons, or colour-coded paragraphs to help students make meaning of texts.

Ensuring students demonstrate learning at high levels

The third component of a rigorous classroom is providing each student with opportunities to demonstrate learning at high levels. A teacher recently said to us, "If we provide more challenging lessons that include extra support, then learning will happen". What we've learned is that if we want students to show us they understand what they learned at a high level, we also need to provide opportunities for students to demonstrate they have truly mastered that learning. For students to demonstrate their learning, they must first be engaged in academic tasks, precisely those in the classroom.

Student engagement is a critical aspect of rigour. In too many classrooms, most of the instruction consists of the teacher-centered, large-group instruction, perhaps in an interactive lecture or discussion format. The general practice during these lessons is for the teacher to ask a question and then call on a student to respond. While this provides an opportunity for one student to demonstrate understanding, the remaining students miss out. Students with special needs are particularly unlikely to respond.

Another option would be for the teacher to allow all students to pair-share, respond with thumbs up or down, write their answers on small whiteboards and share their responses, or respond on handheld computers that tally the responses. Such activities hold each student accountable for demonstrating his or her understanding.

If this seems a bit overwhelming, remember that creating a more rigorous classroom is a journey, one that continues as you and your students learn and grow and change. Please remember that there is no magic formula for increasing rigour. It's a process of continually adjusting your expectations, instruction, and assessments to ensure that each of your students learns at higher and higher levels.

LOW ENGAGEMENT	HIGH ENGAGEMENT
Few students respond	All students respond
Two or three students discuss content with teacher	All students discuss content in small groups
Students are asked if they understand with a simple yes or no and no probing	All students write a response in a journal or on an exit slip

FIGURE 1: INDICATORS OF STUDENT ENGAGEMENT

Rigour in action: Practical examples

Oftentimes, we assume that if students solve a maths word problem and explain their answer, they are completing a rigorous task. However, this is not necessarily true. For example, if the problem is that Sarah has two pieces of pizza and Sebastian has one piece, and they are asked how many pieces they have in total, that is still basic recall. A higher level of rigour would be if the teacher provides a math word problem with two completed solutions (which may include diagrams). Students determine which one is incorrect and explain why. Students are given additional sets of solved problems. They choose the incorrect one, explain why it is incorrect, and solve it correctly. By identifying and explaining misconceptions, they are practising critical thinking skills.

Next, let's turn our attention to a science example. A traditional assignment may require students to complete basic research.

> Using at least two sources of information about catastrophes, students describe three types of catastrophic events, including possible causes of the events, and results that occur after the catastrophe. Then, they create a live or technology-based presentation of the information.

Notice that, although the students seem to be working at a high level, they are basically summarising information. Instead, ask students to build on this assignment to move to higher levels of rigour.

Using their knowledge of past catastrophic events that have affected the Earth and life on earth such as earthquakes, volcanic eruptions, weather devastations,

and asteroid contact, students must predict the next catastrophic event that is likely to occur, supporting the prediction with a minimum of three sources other than the classroom text. Additionally, students should explain how the event would impact those in the affected area. Students will share this information live or in a technology-based presentation.

Notice how, in this assignment, students must take the basic information, predict a future occurrence, and explain ways people in those areas would be affected. In other words, students must link to real-life scenarios.

Finally, we'll turn our attention to a high school English assignment. In a typical assignment a teacher might ask students to read *My Brilliant Career* by Miles Franklin. Then, using details from the text to support this choice, students also describe other texts that incorporate similar theme(s). Again, this is considered higher level, because students must justify their choice using information from the text, but we need to move beyond the text, including applying information to a new setting, to raise the rigour.

> What is/are the theme(s) of *My Brilliant Career* by Miles Franklin? Use details from the text to support this choice and describe other texts that incorporate similar theme(s). *My Brilliant Career* was written over 100 years ago. Consider our current society and explain how the themes of the text apply today. Finally, explain your answer, linking details from the text to specific information about a current issue or situation.

A final note

Incorporating rigour in your classroom is a critical part of meeting your students' needs. As we provide opportunities for them to work at challenging levels, their learning will increase, and they will thrive. ▲

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Why teen depression rates are rising faster for girls than boys

DR JEAN TWENGE, PROFESSOR OF PSYCHOLOGY, SAN DIEGO STATE UNIVERSITY, USA

We're in the middle of a teen mental health crisis — and girls are at its epicentre.

Since 2010, depression, self-harm and suicide rates have increased among teen boys. But rates of major depression among teen girls in the U.S. increased even more — from 12 per cent in 2011 to 20 per cent in 2017 (Twenge, et al., 2019). In 2015, three times as many 10 to 14-year-old girls (Mercado, et al., 2017) were admitted to the emergency room after deliberately harming themselves than in 2010. Meanwhile, the suicide rate for adolescent girls has doubled since 2007 (Center for Disease Control and Prevention, 2017).

Rates of depression started to tick up just as smartphones became popular, so digital media could be playing a role. The generation of teens born after 1995 — known as iGen or Gen Z — were the first to spend their entire adolescence in the age of the smartphone. They're also the first group of teens to experience social media as an indispensable part of social life (Twenge et al., 2019).

Of course, both boys and girls started using smartphones around the same time. So why are girls experiencing more mental health issues?

The screens we use

We found that teen boys and girls spend their digital media time in different ways. Boys spend more time gaming, while girls spend more time on their smartphones, texting and using social media.

Gaming involves different forms of communication. Gamers often interact with each other in real time, talking to each other via their headsets.

In contrast, social media often involves messaging via images or text. Yet even something as simple as a brief pause before receiving a response can elicit anxiety.

Then, of course, there's the way social media creates a hierarchy, with the number of likes and followers wielding social power. Images are curated, personas cultivated, texts crafted, deleted, and rewritten. All of this can be stressful, and one study found that simply comparing yourself with others on social media made you more likely to be depressed (Steers et al., 2014).

And, unlike many gaming systems, smartphones are portable. They can interfere with face-to-face social interaction (Dwyer et al., 2014) or be brought into bed, two actions that have been found to undermine mental health and sleep (Twenge et al., 2019).

Are girls more susceptible than boys?

It's not just that girls and boys spend their digital media time on different activities. It may also be that social media use has a stronger effect on girls than boys.

Previous research revealed that teens who spend more time on digital media are more likely to be depressed and unhappy (Riehm et al., 2019). In our new paper, we found that this link was stronger for girls than for boys.

Both girls and boys experience an increase in unhappiness the more time they spend on their devices. But for girls, that increase is larger.

Only 15 per cent of girls who spent about 30 minutes a day on social media were unhappy, but 26 per cent of girls who spent six hours a day or more on social media reported being unhappy. For boys, the difference in unhappiness was less noticeable: 11 per cent of those who spent 30 minutes a day on social media said they were unhappy, which ticked up to 18 per cent for those who spent six-plus hours per day doing the same.

Why might girls be more prone to unhappiness when using social media?

Popularity and positive social interactions tend to have a more pronounced effect on teen girls' happiness than boys' happiness (Flook, 2011). Social media can be both a cold arbiter of popularity and a platform for bullying, shaming and disputes.

In addition, girls continue to face more pressure about their appearance, (Kahalon et al., 2018) which could be exacerbated by social media (Tiggemann & Slater, 2013). For these reasons and more, social media is a more fraught experience for girls than for boys.

From this data on digital media use and unhappiness, we can't tell which causes which, although several experiments suggest that digital media use does cause unhappiness (Hunt et al., 2018).

If so, digital media use — especially social media — might have a more negative effect on girls' mental health than on boys'.

Looking ahead

What can we do?

First, parents can help children and teens postpone their entry into social media.

It's actually the law that children can't have a social media account in their own name until they are 13. This law is rarely enforced, but parents can insist that their children stay off social media until they are 13.

Among older teens, the situation is more complex, because social media use is so pervasive.

Still, groups of friends can talk about these challenges. Many are probably aware, on some level, that social media can make them feel anxious or sad. They might agree to call each other more, take breaks or let others know that they're not always going to respond instantly — and that this doesn't mean they are angry or upset.

We're learning more about the ways social media has been designed to be addictive (Solon, 2017), with companies making more money the more time users spend on their platforms.

That profit may be at the expense of teen mental health — especially that of girls. ▲

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Where do our tween and teen girls sit in 2021?

MADONNA KING, AUTHOR AND JOURNALIST, AUSTRALIA

My belief is that they are swimming in a huge sea of opportunity. But with every stroke they take, they risk being swamped by waves. Waves of expectation. Waves of disappointment. Waves of self-judgement and anxiety.

Their swimming skills are hampered early on by a lack of resilience and self-regulation, which we know are stronger predictors of later success.

This irony — where each opportunity risks being swamped by perhaps an even bigger challenge — is greater for this cohort of tween and teen girls than at almost any time in history.

It's against this backdrop, Mark McCrindle believes that COVID will mould this generation of girls in the same as World War 2, the Great Depression, and September 11 shaped other generations. "Hitting 10 when schools are shutting, when globally the economy moves into recession, which we haven't seen for three decades, and when all of the normalities of life have come to a screeching halt — that will be the profoundest of influences", he told me.

So, what's our role as educators and mentors? And could we provide the game-changer this generation is desperately seeking?

In the past three years, I've interviewed thousands of tween and teen girls, a similar number of parents, along with dozens of school principals, teachers, counsellors, psychologists, CEOs, and parenting experts. Together, that's resulted in three books — *Being 14, Fathers & Daughters*, and more recently *Ten-Ager*. In addition, I've addressed close to 100 school parent communities and received too many emails to count.

I'm not an educator, or a psychologist. My two teen daughters would confirm that I'm not a parenting expert either. I'm a journalist, trained to ask questions and analyse what I'm told. And listening to Alexia and Anya and Taylor and Eve and all the other girls who've allowed me into their lives, tomorrow's leaders are asking for the help of today's.

They're asking for our help to be heard on consent laws and climate change. They're asking to be heard on the anxiety that is crippling too many of them, on the pressure they feel — often a pressure they put on themselves.

And I think they have wrapped themselves in a blanket of irony that we need to help them shed.

They want independence but find solace in clearly defined and exclusive friendship groups. They know the attributes of a good friend, but struggle to put that into practice. They want to take on the world, but too many of them put a ceiling on their own potential in a way their brothers don't. They are often non-judgmental of their friends' decisions and then absolutely brutal in their self-judgment. They can see the way ahead, often cleared too well by their parents, and yet they want to race outside their lane and into the lane of the girl next to them.

They want to lead, and make room for black lives and transgender lives, for example, but then they wonder where they might fit there. Are they taking the place of someone more deserving? Do they have a responsibility to speak up for others? Or by doing that, are they muting the voice of others?

They strive too much for perfection, and focus too much on what they see as their own imperfections.

So where do they sit? And what's our role in guiding them? Here are just five ironies where they've been delivered enormous opportunity, but perhaps not been able to make the most of them.

1. In searching for independence, they too often embrace group think

In reorienting themselves away from their family, 10-year-olds are wanting to look and think like everyone else. What I found heartbreaking, though, is that they want to change those things they can't. "It's so hard when it's something like the colour of their skin, or their height," one school psychologist explained. "And I think it starts at ten — they just want to fit in and be like everyone else."

The two most commonly mentioned words by 10-year-olds were 'fitting in'.

It's safer. Too often they believe they are not enough — but it's hard for them not to judge themselves, when they hear their friends judging themselves.

"Sometimes I feel like I don't fit in, but I don't know why", Rose told me. "I don't fit in because my friends have changed", Jenny said.

This isn't just at 10. "Being 14 is confusing and a mix of emotions. Sometimes you want to lock yourself in a room for years and sometimes it's the most carefree and fun time you could ever imagine." That's Tracey, who I interviewed for my book Being 14. And Paris, 14, told me she was "constantly conflicted about decision-making".

Girls across the teen years describe a life of irony where life is perfect one minute and pathetic the next. Friends regularly become online tormentors. Connected 24/7, and often feeling utterly, utterly alone. Ironies galore.

"I don't know who I am anymore", Polly told me. Emily said this, "Being 14 is absolutely horrible. It is when (at least for me) you start to question everything, and your life starts to crumble".

The smart phone feeds this irony, making girls so much older, so much younger. They can't articulate it at 10, but they paint a picture of trying to navigate a field of cancel culture, not sure where they sit, or how to make decisions. The safe landing was in group-think.

How do we celebrate difference? Teach them to run their own race — not the race of the girl sitting next to them.

I sought the advice of 100 middle school teachers in Ten-Ager and they nominated the biggest challenge facing their students as a lack of self-confidence. That was brought on by the expectations of parents and peers, navigating an online world where feeds are brimming with what they believe they are not, and that newfound determination to look outside their families, to see who they are.

Melbourne University's Professor George Pattern tells educators they have a wonderful opportunity when girls are seven and eight; that the early stages of puberty are as invisible as they are profound. "This is a really important age where you may be able to change trajectories", he told me. His research, which is being used around the globe, might help teachers understand, he says, "something they can't really put their finger on", but that takes hold in Years 3 and 4. "In terms of teaching and kids reorienting themselves to the wider world, this is an incredible opportunity for educators to provide and guide that."

This all points to the crucial mid-primary years. "If you wanted to create the Ash Barty of the next generation, you could invest all you could afford in the first three years of life", Professor Pattern says, "and never get an Ash Barty. But if you invest about the age of seven and eight, when the motor cortex is actually developing, if you invest then in tennis lessons and training, you might just get an Ash Barty, because that is the sensitive time of them developing."

2. 1000 friends and no-one to talk to

Inspector Jon Rouse spends his time tracking down online pedophiles. I asked him how many Instagram followers my 14-year-old should have. He threw the question back at me — asking about the likelihood of inviting 1000 of her friends to a pool party. It wouldn't happen, would it?

But routinely teen girls have that many online friends. Think about this — if a teen has 650 friends on a platform, and each of those friends has 500, conceivably, 325,000 people are able to contact her. Parents need to understand that. Half of the 1600 mothers I surveyed in *Ten-Ager* said their child — at 10 — now had a smart phone, the number boosted by lockdown.

Even without bullying and half-naked selfies, it's time we re-thought the narrative around smart phones.

We need to take the blame away from girls, and put it squarely back on their parents. No-one gives their 16-year-old keys to the family car and tells her to take it for a spin. Why should the narrative around smart phones be any different?

We also need to prioritise the opportunity cost of what our girls are missing out on while on their phones. That phone offers them the world, and then steals so much from them. White space. Spare time. Time reading and laughing and talking. We need to start asking that question — to girls, and their parents. What would we be doing if we weren't on our phones?

But it was the third area where this irony really stood out — so connected, but often utterly alone. The smart phone has changed how friendship is navigated — and the mass loss of socialisation skills, where girls don't know how to be a friend, is what I saw repeatedly in my research.

This needs to change. We, as adults, are gifted with friends who have our back, who understand us, who provide wise counsel; friendships built up over years and years and years. Our girls think friends are made with the speed of a hot chocolate.

"Friendship is really hard," one 10-year-old told me, "I was sitting with a new group and I'm shy, so they thought I didn't like them, and then the bossy girl told me to leave"

"My friends liked me last year, but now they're too cool for me," another said.

Is that friendship?

We need 10-year-old girls to have a friendship toolbox where:

They learn not to exclude others and to value forgiveness when one of their peers makes a mistake. We've all had arguments with friends, but the friendship survives because it is bigger than the argument. Now it's one strike and you're out — aided by parents who tell their children not to mix with

someone who's done the wrong thing by them. That's got to change.

Real-life friendships are an antidote to the online influencer market where Selena Gomez's handbag can get four million likes. Children need to write out the boundaries of what they will and won't accept in a friendship, and we need to give them the language to communicate that.

Finally, I just want to park this thought. How is the smart phone going to play out in the next five years when young parents increasingly have their own relationship with social media? As chair of the State's cyber-bullying taskforce, two years ago now, I heard from children who went without dinner, because Mum was on Facebook.

As educators, you are now dealing with an issue that is enveloping your students, but also many of their parents. Your influence on the former is huge. And what a privileged position we have in trying to shed that irony where they'll have hundreds of friends on Snapchat, and no-one to sit with at lunchtime.

3. Everything has changed, but nothing has changed

The best example of this irony is the consent discussion being waged nationally. Brittany Higgins shone a light on something we knew was an issue.

As a young reporter, I can remember a politician promising me a good story if I slept with him. My comeback was "why don't we ask your wife and make it a threesome?" I got the story without the sex.

Most of us probably have a story like that. Hopefully Brittany Higgins will prompt change. But we know that while our girls are promised equality, nothing has changed. More than 4000 brave teen Australian girls put their name to assaults and rapes by peers. And we haven't heard one word about it from our political leadership. We've heard from boys, though, with comments like "Rape is bad, but it's not that bad" to "typical girls exaggerating''.

The equality promised is not being delivered, is it?

Girls' schools work so hard here. But it's not being replicated in most boys' schools.

It's not being role-modelled in most workplaces. It's equality in theory, not practice.

But it's not only how boys' schools are dealing — or not dealing — with respect issues. Sadly, I think how sons and daughters are being treated is part of the problem here too.

Fathers continue to treat their daughters as more fragile than their sons. Girls told me how Dad cried when they left for boarding school, but to their brothers he'd say "off you go". Role-modelling by a father, when it comes to expectations around a partner, is huge. But how many of them know they set that bar?

There are other areas where we need to encourage dads and father-figures to help make the promised equality a reality, and that includes allowing their daughters to develop their own opinions.

> "'Dad just says I'm wrong when I try to say what I think — so I don't bother anymore."
>
> "I'm not allowed to have an independent view. And I'm not about to agree with Dad and his views on same-sex marriage."

The irony here is staggering. Fathers love that their daughters excel in debating and public speaking but girls too often find, at home, their views need to reflect their father's. That stood out when I was researching *Fathers & Daughters*.

We need to teach girls to speak out, with respect, but we also need to engage their families, particularly their fathers, here. He needs to see her speaking out as simply her trying to take him on intellectually. She's working out her values. She's is thinking out loud to him — and that's a privilege!

As female leaders, we need to speak up more too. Apply pressure so that more females run male schools; more mothers take up positions on school boards; show fathers how important it is for their girls to be heard; and for those of us with sons to actually ask the schools they attend to detail what they are doing in the area of respect and consent. It's easy to say something — the proof is usually in the pudding.

We can also speak up too and show girls it's okay to do that.

That's what one educator did recently, using the school newsletter to argue that speaking up ourselves gave our daughters a licence to do the same. "When the people closest to them share their own stories, it removes the embarrassment and shame they are feeling, and they are more likely to share", she said.

Sue Havers, the Head of Senior School at All Hallows' School in Brisbane, then told her story. She was a young beginner teacher, when she caught the eye of her popular principal, who didn't know how to control his hands. That story empowered her students, who discussed it and encouraged their mothers to read it. "Intergenerational activism," she said, "is extremely powerful".

I know I've focused here on consent, but this irony means this promised equality is being swamped by a systemic failure to deliver. And it is costing our daughters and students happiness.

We encourage them into STEM, but no matter what is said, the jobs have then not been there to allow similar levels of employment. We say you can reach for the stars, and then we see the breakdown of women and men who

receive Australia Day awards, or board positions, or who win political pre-selections.

We've got women's sport onto TV — from AFL to soccer to surfing. But look at how much female athletes are paid, compared to their peers.

Promising equality is easy. It's us holding those people to account that will allow the girls to capitalise on the opportunities, rather than be drowned by the challenges.

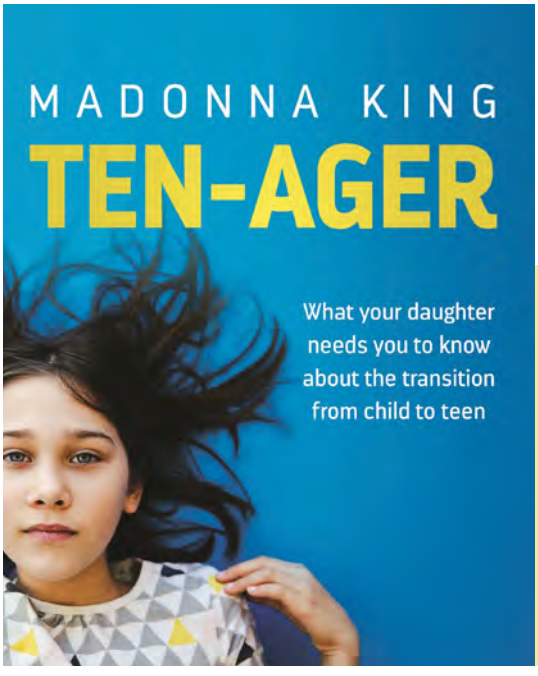
4. We've dismantled ceilings so girls can reach for the stars, but then they limit their own potential

This generation of girls has remarkable opportunities, yet they often close off their options too early. They listen to the messages of those around them, focus on those verdicts delivered via social media, and it moulds their path. Too often, instead of widening the road ahead, they narrow it. "I'm not a science girl", one girl told me. "I can't do maths", another said.

Science girls. Maths girls. "We don't even know what they're capable of at 10", one neuroscientist told me. So how do they?

Why do our girls put such a low ceiling on their own potential?

Most experts put this down to expectations, often their own. Girls felt, one educator told me, that "even in a small group of four or five, if they sit at the bottom in marks, the message is clear. I'm not a smart girl. I won't be doing Maths and Science in high school". They put a ceiling on their own potential.



Experts see various causes for this type of thinking, including gendered views of what boys and girls do in families, and indeed my research shows girls see their father parenting by gender; that they are treated differently because they are girls. Their fathers see them as 'more vulnerable', or 'weaker' than their brothers. "My father trusts my brothers more in the outside world", says Kylie. "He believes that they can look after themselves."

Fathers agree. "I expect different things from him than I do from our girls", one said. Another said, "There's always more to worry about with a daughter!".

That should send up alarm bells, because it can limit a girl's ability to judge risk, develop critical thinking skills, and even just live life.

Another cause is also girls internalising things. "I was eight when my Maths teacher said I was hopeless at Maths", one New Zealand school counsellor told me. "And my mother said, 'Oh yes, she's just like me. I was never good at Maths either.'" And so, the counsellor said, she was never going to be good at Maths.

All those roads lead back to a girl's search for identity. They take on the messages of those around them, and that can quickly deliver closed options. I know this is a generalisation — but this is not often the case with boys. One senior educator at a co-ed school told me that boys saw a result as a 'mark on the page', whereas girls took any result very personally. He provides this analogy — if a boy was told he had made a mistake at football, he'd think he didn't kick the ball well in that particular match. It would not become an issue about him as a person. A girl, however, would see it that way.

The knowledge of what is required for success, and the early pressure to achieve, Professor James Scott — a leading child psychiatrist — believes is behind the high levels of anxiety we are now seeing in young girls, not boys. "I think there's much more of an awareness of the need to do well academically", he said.

TEN-AGER

MADONNA KING

An important book that shows that 10 is the new start of a girl's teenage years. It raises the issues our girls might not be talking about publicly, and guides their parents on how experts believe we should deal with it.

Published by Hachette Australia

Could putting a ceiling on their own potential be part of a girl's drive towards perfectionism? "I think they start to become afraid of failing," one school principal told me. "If they can't do it perfectly, why bother?" This is a fabulous insight — that girls might be limiting their potential in pursuit of always being happy. Another principal explained that it is only a small jump from the pursuit of happiness to the pursuit of perfectionism. "What you start to find is that girls think they have to be perfect, and that shows itself at school." A child might not hand in work where they have been forced to cross something out. Or decide if they can't do a task perfectly, they just won't. Then they could say to themselves that they didn't get good marks because they didn't do it — not because they did it and it wasn't up to standard.

That type of insight, offered by educators, is so important to how parents view their daughters. How might we, as parents, learn more of that from educators? And in the process, ensure our girls aren't only offered the world — they feel as though they can grab it with both hands too.

5. The world might be their oyster, but it's best viewed via Instagram

One 13-year-old recently promised to watch the sunrise with her mother. When the mother woke her, she'd changed her mind, "Mum you go. I'll just google it later".

The irony. We know screens are robbing children of play time. But the impact on their fitness, which is what I want to focus on here, is huge.

Research shows that if you lined up the 10-year-olds at your school, and — allowing for time travel — they competed against their parents as 10-year-olds, their mums and dads would win by 90 seconds over 1.6km! Their parents should know that!

In researching *Ten-Ager,* I spent time with Dr Gavin Sandercock from the University of Essex, whose research looks at the fitness and strength of today's 10-year-olds. His results, run over several years, are fascinating.

Girls' strength, on simple things like a pinch grip test, which requires no skill is down 10 – 15 per cent, while their ability on an exercise that took effort — like timed sit-ups — is down by 45 per cent! But it was another result that stood out for me.

Children were required to hang by their hands from a gym bar, carrying their own weight, holding their legs at a 90-degree angle with their knees bent. Dr Sandercock told me this: That's the only one where we couldn't get them all to do it, because about 30 per cent of the children either refused or simply couldn't do the test. It was dangerous for them to do it because their grip was so poor and their arms were so weak, compared with their body weight, they would just fall off. Sixteen years ago, every child scored on that test, which was conducted in exactly the same way.

Australian research has also pointed to a disparity between girls and boys here. A study in Canberra found that eight-year-old girls are less likely to take part in extracurricular sport than boys, and took 2000 fewer steps per day.

It sounds counter-intuitive, teacher and author Daisy Turnbull says, "to say that the longer you let kids be kids, the better the 'adult', but it is true". She says the more kids are allowed to "play in mud, create games and develop their own solutions to problems", the more they will thrive as they grow older. Former Matilda and Olympian Joey Peters agrees, saying there should be no age limit on play. "As adults, it seems foreign, but we should all play", she says. Several experts urged educators to continue to encourage play well beyond the age of 10 — and call it that — because of its therapeutic effect on anxiety, self-regulation, dealing with trauma even, and just killing off childhood prematurely.

It's only one example, but an important one.

So, what's our role here?

My thesis is simple. We've delivered so much for and to our girls, but they are struggling to capitalise on it — and that's where we need to focus our attention, and perhaps mould our own roles.

Do we need to be a bit louder, or make our message travel a bit further? That can be uncomfortable, I know, particularly in the roles educators have.

We need to be more involved in the narrative around issues impacting on those we teach — around domestic violence and childcare and consent — so they are not seen as women's issues. They are just as much men's issues.

And on issues like the curriculum, NAPLAN, education league tables, and sex education.

It's starting. I love seeing Dr Briony Scott, or Paulina Skerman, or Jacinda Euler on ABC's The Drum. But why not elsewhere, and more of us. Panel discussions on the national broadcaster, broader communications in our newsletters, school boards that play it brave, not safe.

We ask our daughters and nieces and students to find strong female role models. Hopefully we are those. But like everything else in the world, disruption brings change.

And that's just as relevant to us, in how we use our positions, as it is in any curriculum review that will land in your email. ▲

Why is gender equality important?

LIBBY LYONS, FORMER DIRECTOR OF AUSTRALIA'S WORKPLACE GENDER EQUALITY AGENCY

"Women belong in all places where decisions are being made" — US Supreme Court Justice Ruth Bader Ginsberg.

In many ways in Australia, we have made significant advances in terms of gender equality, but to be honest progress has been slow.

A review of the history of legislative change reveals that Australia has had gender equality legislation in place for over three decades. Between 1986 and 2012, the Australian government focused on equal opportunity for women in the workforce. Significantly in 2012, the Workplace Gender Equality Act (the Act) was passed by parliament. This legislation represented a fundamental change to the way gender equality in Australia workplaces was reported and viewed. The legislation focuses on supporting employers to remove barriers to the full and equal participation of women in the workforce, in recognition of the historical disadvantage that women in employment had experienced. But it had an expanded focus on men, as well as women.

It is clear from the place women hold in our communities today, and from the data, that Australia needs systemic and cultural change to ensure that women are given the same opportunities in life as men. Cultural change is hard — but the one place where we can start to gather data and regulate change is the workplace. Effecting change in the workplace will have a ripple effect across our communities.

Australia's mandatory gender-equality reporting scheme is the only model in the world which requires

employers to submit their raw data to a central authority, the Workplace Gender Equality Agency (WGEA). WGEA was established by the Act and is charged with promoting and improving gender equality in Australian workplaces, through educating and influencing employers and employees to drive and improve gender-equality outcomes.

Under the Act, every organisation in the private sector with more than 100 employees reports to WGEA on an annual basis and provides information on six gender equality indicators:

- workforce composition – that is – the jobs held by women and men;
- gender composition of boards and governing bodies;
- equal remuneration between women and men;
- employment terms, conditions, and practices for employees with caring responsibilities and support for flexible work;
- employer consultation with employees on gender equality; and
- sex-based harassment and discrimination.

The collected data provides Australia with a very tangible picture of gender equality in our workplaces and this data is used to provide the evidence to drive change.

Australia can be very proud of this unbroken, longitudinal data set — now collecting its eighth year of data.

Challenges and changes

This year's theme for International Women's Day was 'Choose to challenge'. It called upon us all to challenge injustice and gender bias by acting individually and collectively, because through challenge comes change. It also challenges Australian employers to maintain their commitment to gender equality in our workplaces.

In 2015, just 12.3 per cent of Key Management Personnel (KMP) in the mining and resources industry were women. That was less than half of the average number (26.1 per cent) of female KMPs across all other industries. Today it sits at 18 per cent, nearly a six-percentage point increase in five years.

I started my working life as a primary school teacher in a female dominated industry. I learnt first-hand the importance of working with a diverse group of people. It was always the voices and views of the few males at the table that really got the debate started and challenged the 'groupthink'. When I started working in mining and resources, I was often the only woman in the room throwing that different view or challenging the 'groupthink' decision. My experience of both male and female-dominated industries has made me a firm believer in, and advocate of, the benefits of diverse and balanced workplaces.

The data from the 2019 – 2020 reporting year — the seventh year of data collection, which captured the period immediately prior to the pandemic covered over 4.3 million employees or more than 40 per cent of Australia's workforce. Up until that point, while progress in Australia was not speedy we were heading in the right direction. But it is clear from the current dataset that progress is stalling.

The gender pay gap (GPG) is always a very topical issue and is a case in point. It is also important because, as a statistic, it gives us a baseline indicator of the state of gender equality in Australia. The GPG is the difference between the average earnings of women and men across organisations, industries, and the workforce as a whole. When we refer to the total-remuneration GPG, we include both base salary and discretionary pay including bonuses, shift allowances, and performance payments. It is always important to note the difference between equal pay and the GPG. They are two distinct and separate concepts, but they are often confused.

Australian women won the right to equal pay over 50 years ago. Equal pay means that women have the right to be paid the same as men, for doing the same job or a job of similar value. In truth, the GPG still favours men across every industry, manager group, and occupation. In 2015, the gender pay gap for total remuneration was 24.7 per cent. This meant that each year, on average, women in Australia were earning just three-quarters of what men earnt. When analysing the WGEA dataset, the total remuneration GPG has fallen 4.6 percentage points from 24.7 per cent in 2015, to 20.1 per cent today. That means that women are still taking home, on average, $25,534 less than men each year.

Witnessing the GPG drop by less than one percentage point a year is unacceptable. And, if a trend that was uncovered in last year's data is not halted, the situation could well get worse. Until last year, there had been a solid increase in employers analysing their pay gaps and taking action to close any pay gaps that they identified.

Although the 2020 data showed a slight increase in employers analysing their pay gaps — up by 1.7 percentage points — there was a reduction in those employers acting to close gaps. It went down by a substantial 6.1 percentage points. This is an example of 'action gap' — a term coined for organisations that have policies and strategies in place, but are not taking action to implement them across their workplaces.

While we have seen a consistent but slow decline in the GPG over the last seven years, there has also been some consistent and positive movements in other measured areas. There has been a steady increase in employer commitment to flexible work. In 2020, almost 76 per cent of employers who report to WGEA had a formal flexible-working policy or strategy. This is an increase of over 18 percentage points since data collection began.

Pleasingly the representation of women in management has also increased every year. In 2020, women comprised 39.9 per cent of all managers and 43.8 per cent of appointments to manager positions. If current trends continue, women should achieve equal representation in most levels of management within the next 20 years. Another positive and important movement in the data is an increase in the provision of employer-funded paid parental leave. In the 2019 KPMG report 'She's Price(d) Less', produced in conjunction with Diversity Council Australia and WGEA, one of the primary causes of the persistent GPG was identified as factors relating to the gendered impact of children and family. This includes time taken out of the workforce, part-time employment, and unpaid work and care — issues which still affect women more than men. A three-percentage point increase in the number of organisations offering paid parental leave in last year's dataset is encouraging. Today 52.4 per cent of employers in the WGEA dataset offer paid parental leave. Interestingly but unsurprisingly, WGEA research shows that giving women and men equal access to paid parental leave helps foster a more equitable division of paid and unpaid work in a family. This enables women and men to better balance and manage work and home commitments which, in turn, should lead to an improvement in women's economic security.

Each year since 2016, the Bankwest Curtin Economics Centre has partnered with the WGEA and analysed their data to uncover new insights into gender equality in Australian workplaces. In 2020, the research uncovered critical evidence of the importance of female representation in senior leadership roles. For the first time, the analysed data was able to demonstrate a strong causal-relationship between increasing the representation of women in leadership and improved company performance, productivity, and profitability. For example, a female CEO leads to a 5.0 per cent increase in the market value of Australian ASX-listed companies, or the equivalent of $79.6 million for the average company, and that female CEO can lead to a 12.9 per cent increase in the likelihood of that company outperforming in their sector on three or more of six key profitability and performance metrics. Despite these facts, women remain under-represented in senior management. Across the whole WGEA dataset today, just 18.3 per cent of CEOs are women, compared to 2015 when women held 17.3 per cent of CEO positions. Those figures have changed by just one percentage point in five years. If current trends continue, we will not achieve gender parity at CEO level until 2100.

How can schools help?

Gender balance is essential in all workplaces, even schools, and especially single-sex schools. Is your workplace gender balanced? If not, what are you doing about it? Have you set targets to meet gender balance? If not, why not?

Research, cited by the Alliance of Girls' Schools Australasia on its website includes, *"there are no expectations that they should fulfil traditional gender stereotypes in the subjects they study, the activities they participate in, or the careers they pursue."*

Sadly, the reality of the labour market that our young women enter is still largely gender-segregated and male-dominated industries and workplaces are still extraordinarily difficult places for women to work. And even if a young woman enters a female-dominated industry or workplace, the chances are the majority of the senior managers will be men.

The Alliance website notes that, *"Girls' schools also provide nurturing environments specifically catering to the education of girls, leading to many social, emotional and health benefits, including higher rates of participation in sport and a much lower risk of being bullied at school. At a single-sex school, girls are free to be who they want to be, both in the classroom and outside."*

Unfortunately, once young women hit the workforce they are often confronted with an environment in which bias, discrimination, and bullying against them is rife. The early years of their careers are often difficult and unhappy, as they work their way through the quagmire of a world still dominated by male bosses. They confront bias both inherent and otherwise that is still normal today — in 2021.

Teachers and educators of girls and young women … what can you do?

Firstly, you must look at your workplace. Do you have gender balance on your teaching and support staff? You need to work to ensure that your ground-staff are not all men, and your office staff are not all women. Make sure your science teachers are both women and men, and you have men teaching younger students. Remember you cannot be what you cannot see.

Secondly, familiarise yourself with the data and use it when you are teaching. Make sure our young women are aware of the statistics. Use the WGEA website and get a breakdown of the percentage of women and men in every industry. Look at the GPGs by industry — they are very telling. For instance, even in female-dominated industries there is a GPG in favour of men and it has actually gone up in the last two years.

The data gives you the real picture. Using this data, start some challenging conversations with the girls. Invite speakers who will talk not just to the wonders of a career but the struggles as well. Open dialogues about the very real sexism, bullying, and harassment women have encountered, the unfair decisions around pay and project allocations, and promotions. Then turn the discussion to the strategies women have used to overcome the hurdles.

Find speakers who will talk openly and honestly about leaving jobs and professions. Our girls need to know the reality. Start talking about strategies to tackle the situations they will encounter in the workplace. It's great to "be free to be who you want to be", but sadly that does not cut it at work today.

Another way to lead by example is to look at the paid parental leave (PPL) schemes offered in your schools. Most PPL schemes offer paid leave to someone called a primary carer. What and who is a primary carer? Women mostly, yet men are parents too. Women do not hold the licence for child rearing. Anecdotally more and more young men want to be active parents. They want a stake in their child's life especially the early years — so why are men not offered the same access to PPL as women? It is wrong, and it is discriminatory. We need a cultural shift in attitudes to caring responsibilities — PPL must become a universal entitlement. This would allow and encourage men to take the same amount of parental leave as women. It will help remove the stigma of men being active fathers, and the barrier to career progression that often comes with extended breaks taken by parents in those early years of parenthood. A fundamental policy change like this will lead to sustainable systemic changes in our workplaces with far reaching effects on our society and our culture.

The COVID-19 pandemic saw a huge change in the way many of us, including teachers, worked. Classes were delivered by Zoom and students learnt to be more resourceful in solving problems without a teacher 'on tap'. Likewise, businesses also learnt to operate very differently. Working from home — a form of flexible work — became the norm for many employees. Employers were genuinely surprised by the maintenance, and in some circumstances, the increase in productivity of their business. They realised that employees did not need to be chained to a desk in a workplace to do their work, and learnt that they could actually trust their employees.

We have known for some time that the normalisation of flexible work is the key to an increase in women's workforce participation and more women in management roles. Numerous studies have linked flexible work to many business benefits including

- lower staff turnover
- reduced absenteeism
- increased productivity
- improved employee morale
- better organisational performance.

Men working flexibly will help even the balance of the burden that women bear of unpaid care and domestic work. For every hour of unpaid care and domestic work men do women do an hour and 46 minutes.

As Ruth Bader Ginsberg said, "Women will only have true equality when men share with them the responsibility of bringing up the next generation".

But I can hear you asking, "well we can't work flexibly — maybe part time — but the role of a teacher is such that we have to be there in the classroom to teach". At the moment you do but this is where we need to think about structural changes to the way schools operate. Why is it that school hours are set between 8.30 am and 3.30 pm? Structural change in education will not happen overnight — but it will never happen if we don't start thinking about it and engaging others in the discussion now. We all need to be more flexible in the way we work. We all have obligations and responsibilities outside our work and to get the most from each other we need to look at how we can adapt to cater for our changing world and labour market. Businesses alone cannot be responsible for the cultural changes we need, to give our girls a more equitable start in their working lives. But to effect real change we also need some action.

I ask that you examine and understand how you work as employers and educators now. Gather the data for your school. What does it tell you? What is the percentage of female and male employees and managers at your school? What does your school board look like — is it diverse and gender balanced? Is your PPL policy gender neutral? If it is do you encourage your male staff to use PPL? You need to know this information and more — you really need to analyse your data. Then you need an action plan to initiate change. The first thing you must do is engage your school boards and governing committees. Present them with the data and evidence — the business case for gender equality and the need for change — and keep them informed of your actions and results.

What might the action look like?

Do a GPG. You may well find that you have a pay gap in favour of women not men, and that is not right either. Why is it that you have more women in teaching and management roles with higher responsibility and pay? Is it because you have more female teachers working part-time? Find the reasons — if you have more female staff than male put targets in place that strive for balance. Make the appropriate staff accountable for meeting the targets.

Commit to an engagement process to really understand if the way you operate is meeting the needs of your families and community.

Your students need to see that you — their teachers and educators — are committed to gender equality; that you value and encourage men to be active parents. They need to know the reality they will face when they join the workforce — they need to be presented with the data, the stories, the real-life examples, and strategies to cope in difficult workplaces. They need to see a school staff and board that consist of women and men of different ages, ethnicities, experiences, and backgrounds. They need to see a female physics teacher and a male home economics teacher, a female maintenance person and a male receptionist. They need to see what they can be.

Our girls and boys, young women and men are counting on you to challenge gendered thinking and workplace practices.

COVID-19 had a big impact on women. Women have been at the forefront of the pandemic both at home, with data showing home-schooling and domestic duties increasing for women in lockdown, and at work where they make up a larger proportion of the essential services workforce we relied on so heavily — nursing, aged care, teaching, cleaning, and childcare.

The true impact of these events on gender equality in our workplaces and the working lives of women and men will not become clear until the collection and analysis of the WGEA data later this year.

Finally, we must also acknowledge and challenge the fear we feel when we are confronted with change — especially, in the case of gender equality, from men. For real and lasting change is only possible if both women and men are engaged in the ongoing project of gender equality.

This is not just an issue about women. It is not a problem that can only be solved by women but, equally, it is not something that men alone can fix either. This is an issue for us all. We must work together.

Someone who also understood this very well was my grandmother Dame Enid Lyons. Seventy-eight years ago, Dame Enid showed she was a force of change in our society when she became the first woman elected to the House of Representatives in 1943. She then went on to become the first female cabinet minister. She led the way for me and many other Australian women. Through her words and her deeds, she showed that women can and should do as they wish and want with their lives — just as men do.

> "Women have special attributes, special insights of immense value. Of course, they also have special problems too. But these problems must be solved in partnership with men if women are to fulfil their public and private roles. I don't think that we should lose those attributes and priorities that are natural to us as women…We shouldn't imitate men, the world's far too male already." Dame Enid Lyons.

We don't need to fix women and we don't need to fix men — we need to fix the system and our culture. ▲

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Contact the Alliance of Girls' Schools Australasia
PO Box 139
Tugun Queensland 4224
Australia

Telephone +61 7 5521 0749
Email agsa@agsa.org.au

www.agsa.org.au

Alliance of Girls' Schools Australasia

The Alliance of Girls' Schools Australasia is a not for profit organisation which advocates for and supports the distinctive work of girls' schools in their provision of unparalleled opportunities for girls.

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