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adolescent success

Information for Contributors

Adolescent Success welcomes submissions for journal inclusion that reflect the aims of the association and address issues relevant to the middle years of schooling.
You are encouraged to view the Adolescent Success Position Paper on our website and align your contribution to the paper themes and topics. For example (not limited to): Adolescents: the developmental needs and interests of young adolescents.

- **Pedagogy**: approaches to teaching and learning; authentic assessment.
- **Educators**: school leadership and organisational structures in the middle years; research findings and future developments in the middle years.
- **Place**: information and communication technologies and resources in the middle years; middle years learning environments.

Contributions

Contributions may take the form of:

- educator success stories from the middle years e.g., middle years programs/strategies from your context;
- academic and research papers that make an original contribution of an empirical or theoretical nature;
- literature review;
- reports;
- viewpoints;
- book reviews.

The journal has two levels of acceptance of papers for publication: refereed and non refereed. Refereed papers will have two referees selected from relevant fields of study by the editor. Papers must clearly indicate if they wish to be considered for refereed status. Refereed articles will be included in a specific section of the journal.

Contributions shall be submitted electronically via email to the Adolescent Success Journal Editor email address, as a Microsoft Word document. Articles must be double spaced, without the use of styles, 12 point font Times New Roman. The submitted article becomes the property of Adolescent Success.

- All contributors need to complete an Author's agreement form to be submitted with the article.
- Papers should be between 700 and 5000 words in length.
- Each article should have a separate title page that contains; the names of all authors, their contact addresses, email addresses and telephone numbers. The names of the authors should not appear on the rest of the paper.
- An abstract of no more than 200 words must accompany each refereed article.
- All references should be placed at the end of text using APA (7th edition) for example:

Journal article

Rumble, P., & Aspland, T. (2010). The four attributes model of the middle school teacher. *Australian Journal of Middle Schooling, 10*(1), 4-15.

Book

Bandura, A. (1986). *Social foundations of thought and action.* Prentice Hall.

Footnotes are not to be used.

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- Photographs should be submitted separately (not included within the text). All student photographs, artwork, poetry etc must be accompanied by copyright release forms, which are available on the website or from the editor.
- If the material has been published elsewhere, details must be included on the author's agreement form.
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Editorial November 2023

Amid the countless challenges and transformations that have swept through the educational landscape, the Australian Institute for Teaching and School Leadership (AITSL) launched its 2023 World Teachers' Day campaign, *'Hats off to Teachers'*. In this edition of the *Australian Journal of Middle Schooling*, we take our hats off to you, the innovators of the middle years —that crucial juncture that often shapes the trajectory of a student's academic journey. The middle years educator must become adept at navigating the nuances of learning during these formative years. We can't think of a better way to celebrate your success than by sharing the many wonderful initiatives being realised in our schools.

One of the nuances of teaching in the middle years is letting go of teacher dominated classroom discourse. In her article *Creating Curious Classrooms*, Kara Vaughan challenges the pattern in which students 'perceive their role as primarily answering questions in a teacher-led tennis match —questions are served, and students hit back with answers, often at a rapid pace with little time to think.' In this article, teachers are asked to 'Imagine curiosity and questioning like interdependent cogs in a machine —a continuous generation of student questions [which] has the potential to spark curiosity.'

The importance of student agency in learning is also evident in *Sleep Wake Cycles For Online Teenage Gamers*, an article with a difference in that it is written for (and was reviewed by) teenagers: 'If you think of neurons like a slip'n'slide, myelination is like putting lots of soap and water on the slip'n'slide, helping the messages that are sent around the brain to travel much faster.' The message for middle years learners is clear — sleep matters for the teenage brain.

We noted that the theme of student agency was also a focus in many concurrent sessions during our International Conference this year. In this edition, our Focus on Schools spotlights the work of Corinda State High School in addressing the Adolescent Dip through the lens of student agency and collaboration. Their learning model enables students to choose from four 'learning lanes' and determine the speed and mode they need to reach their destination. This student-centred model redefines the classroom as a highly engaging and student-driven learning hub.

With the upcoming Christmas break in mind, we review two books for your holiday reading list. *Game Changers: Leading Today's Learning for Tomorrow's World*, by Philip Cummins and Adriano Di Prato, provides a roadmap for leadership that changes the game of school. For a change of pace, Michelle Mitchell's guides to puberty use comics, real-life stories, and inspiring quotes, to

teach tweens about body parts and how they will change, along with tips on how to care for their body and emotions and develop a mindset for enjoying life now and into the future.

Speaking of enjoying life into the future, we acknowledge the hard work and dedication of our outgoing President, Debra Evans whose final report is included in this edition of the journal. Deb's unwavering dedication and passion for education in the Middle Years inspires us all. Guided by her leadership, Adolescent Success brings together outstanding middle years educators and amplifies the importance of the middle years in adolescent learning and development. Hats off to you Deb. We wish you every joy and success (with some well-earned R&R) as you move forward into the next chapter. We also take this opportunity to thank our members for their generous support of the association, and to wish you all a peaceful holiday season. Take time to reset and replenish.

Rebecca, Sue, Tony & Debra (Editorial Team)

President's Report 2022-2023

By Debra Evans, Outgoing President of Adolescent Success 2023

As my final President's Report for the Association, I begin by acknowledging the achievements of the management committees during my time in the various roles I have served. I particularly make mention of the Executive Officers I have worked with during my 9-year tenure as President. As an association, we would not function without their ongoing dedication, and professionalism. It is central to the ongoing growth and development of Adolescent Success. Furthermore, the dedication and commitment of the Executive Officer keeps us at the forefront of the educational landscape, and I cannot commend highly enough the work that has been undertaken and will continue to occur moving forward.

Strategically, our focus for 2023 continued to target each of our key areas: Being known as a leader, offering dynamic products, engaging our members, and being well-managed, all of which ultimately lead to the Association's financial stability.

Following the success of the 2022 Conference, planning was underway for several key initiatives to ensure the continued diversification of the work we do. Several enterprises for 2023 were set in motion during the final term of 2022: two Study Tours were planned, a Brisbane tour, and a Darwin tour; the theme, venue, and date for our International Conference for 2023 were set, and keynotes identified. As well, we engaged with O'Loughlin College facilitating our first Diagnostic process.

Sadly, our long-term Executive Officer Angela White, resigned in November 2022 to pursue a new career path, and as such, we began a recruitment process. Whilst it was extremely difficult to farewell Angela, we were privileged to secure Liz Benson to take on the role for 2023, and with support from myself and other members of the Executive and Management Committee, Liz has led the association with professionalism and expertise. This change over highlighted the importance of collaboration and shared responsibility, and I sincerely thank and congratulate Liz for her skilfulness in embracing the role of our EO.

Key priorities for 2023 have been mostly achieved; they are as follows:

Our Middle Years Diagnostic and School Improvement Tool has proven to be of benefit to several schools across Australia and internationally, and this will continue to be a priority into 2024 and beyond. We are currently working with Padua College (Brisbane), St Marks, (WA), and Dubbo School of Distance Education. We also worked with Taejon Christian International School (South Korea) early in the year. As this initiative continues to expand, we have implemented a consultancy arrangement to ensure that the EO has the resources to those schools engaging with us throughout the 12-month period of the process. This will

ensure expansion of our membership and community and strengthen our financial position.

Five of our six Middle Years Schools of Excellence renewed for 2023. Congratulations to Burgmann Anglican School (ACT), Redlands College (Qld), Kristin School (Auckland), St Margaret's College (Christchurch), and Cornerstone College (SA) for their continued exemplary middle years practices.

Whilst we did not acknowledge any new schools for this year, we have had several inquiries moving forward. As such, a key target area is to update this program, and to identify and acknowledge new MYSOE for 2024.

Study Tours – In March, our Brisbane Tour was highly successful with 20 delegates from around Australia collaborating and visiting six schools – thank you to Indooroopilly State High, St Peter's Lutheran College, Yeronga State High, St Paul's School, St Eugene's College and Cannon Hill Anglican College for your willingness to host.

Unfortunately, the Darwin Tour was postponed for 2023, but plans are already under way with the Northern Territory Department of Education and Catholic Education NT to reschedule for Term 3 2024.

Membership for 2023 has grown slightly, and this will continue to be an important priority moving forward. Building our middle years community is key to further growth. The emphasis will be on our Institutional Memberships and those individuals who have not renewed this year.

Unfortunately, our Social Media Manager Jaqueline Simpson, resigned her position early in the year. As such, I, with the support of the EO, maintained our social media presence for much of the year. Through the expertise of the EO, a key focus of our communication strategy has been to expand our reach, particularly through LinkedIn. A more distinct branding was introduced this year, along with the introduction of a middle year's blog and conversation starters based on our position paper and research. Aligned with this, regular posting about our work, as well as specific marketing to middle years leaders formed our social media strategy. As a result, we have seen growth in our numbers of connections and followers on LinkedIn; our reach expanding from 788 to 1541 followers and from 525 to 785 connections (from 2022 to 2023).

Other communications through our monthly eNews publication – Succeed, have continued, and through Facebook, Instagram and Twitter, we continue to inform and expand our membership and community.

Rebecca Seward-Linger, our Journal Editor stepped down from committee meetings in August. Rebecca will continue to oversee the upcoming journal for Nov/Dec this year, with the support of Sue Webb and myself. We sincerely thank Rebecca for her work in this area. She will remain as an editor into the future. The Association will look to recruit a new Journal Editor for 2024.

Adolescent Success formalised their partnership through a Letter of Agreement with Murdoch University and the Childhood to Adolescence Transition Study in August this year. We will work

more closely with Dr Lisa Mundy, and her team during 2024. I personally engaged in a forum to review tools they have created for trial in some Victorian Primary schools, and we will continue to be an integral partner with this group as they maintain their research and focus on Transition from Primary to Secondary school.

Our partners CYC Burleigh supported us financially again this year, and we thank them for this ongoing connection. We also partnered with Food is Cool, providing access to their website and information via social media.

Our successful International Conference 2023 *Reimagining Learning and Working in the Middle Years* was attended by approximately 180 delegates. We thank St John's Anglican College, their principal, staff, and students for hosting this event. Our Keynotes – Phil Cummins, Michael Anderson, Stephanie MacMahon (UQ Learning Lab), and The AI discussion panel were highly rated, and we thank them for the important contributions they made.

The 48 exceptional concurrent sessions were led by educators from around the country, as well as from New Zealand and United States of America. We were privileged to have Stephanie Simpson, the Chief Executive Officer of AMLE present one of these sessions, and to engage with her during the conference. Student agency was an important component, and we acknowledge and thank Braydon Giles for his organisation of the young people who performed, facilitated the concurrent sessions, and attended all aspects of the event.

We also acknowledge and thank our ambassadors – Prof Donna Pendergast and Paul Browning for their involvement in our conference.

Already, several online Professional Learning opportunities are in place for term 4, and I encourage our members to engage in these.

The 2022- 2023 year has been successful for Adolescent Success, seeing our middle years community grow and our financial stability maintained. I commend the outgoing Executive and Management committee members who are stepping down – Jenny Knowles our secretary, Liz Craig, our ACT Rep, Pascale Drever, our NSW Rep, and Chris Ryan, our Vic Rep. Thank you for your expertise, and your advocacy for the middle years.

The incoming Executive and Management Committee is a dynamic team. It will be exciting to see the directions and growth of Adolescent Success throughout 2024-2025 and beyond.

I wish all of you every success in the future and urge you to continue your explicit agenda on and for the middle years.

Thank you,

Debra Evans
President

Creating Curious Classrooms

By Kara Vaughan, Teacher and PhD Candidate

The problem with creating a curious classroom is not a 'why' question; as teachers, we uphold a set of ideals that we wish for our students, and curiosity often ranks high among them. After all, curious students are a joy to teach; they are motivated learners, learn more, and remember more (Kang et al., 2009), and their curiosity leads to greater capacity for educational achievement (Von Stumm et al., 2011). But also, beyond the classroom, we know "the truly curious are increasingly in demand" (Leslie, 2014, p. 16), and their drive to solve problems will make them future knowledge-makers. Igniting curiosity in a student is akin to those teaching 'aha' lightbulb moments that drive our passion for teaching and keep us learning.

Framing the Curiosity Problem in High School Classrooms

Instead, the problem with cultivating curiosity in high school classrooms is a pedagogical 'how' question, and like many educational issues, it is a multifaceted problem. A seemingly straightforward approach to begin tackling this problem is to address the fact that students ask surprisingly few questions (Cazden, 2001; Dillon, 1984; Walsh & Sattes, 2015). Part of the problem as time-poor teachers is that we find ourselves straddling the tension between creating engaging and differentiated learning experiences that meet students' complex learning needs while aligning with curriculum and assessment objectives. Between these educational goals driving performance, there is little means to prioritise space and time to cultivate curiosity. Instead, as the bell rings, our educational goals for curiosity often seem out of reach.

Consequently, with so many imperatives to hold onto, controlling the classroom discourse can mean that teacher talk dominates, and teacher questions are used to check for understanding, maintain curriculum momentum, and manage or redirect student behaviour (Gall, 1984; Long & Sato, 1983; Todd & William, 2011). Subsequently, students learn to perceive their role as primarily answering questions, often at a rapid pace with little time to think and actually ask questions. For instance, a habitual way of checking for understanding often resembles a teacher-led tennis match of question-answer pairs —questions are served, and students hit back with answers. This familiar pattern, also known as recitation or Initiate, Respond, and

Evaluate (IRE), rewards the swift recall of correct answers. Relying on student performance as a proxy for student understanding. Time and time again, students play the game as they attempt to guess the answer as it exists in the teacher's mind.

When students do ask questions, they are influenced by their experience of answering questions. As a result, student questions are typically directed at recall or procedure, and a large percentage are unrelated to the learning (Albergaria-Almeida, 2010; Hunkins, 1985; Rosenshine et al., 1996). Hence, student questions are often overlooked as a powerful tool for understanding students' thinking and enhancing their curiosity and engagement. It's important to note that even though we commonly link curiosity with questions, we sometimes miss the connection between questions and their ability to activate curiosity. Imagine curiosity and questioning like interdependent cogs in a machine—a continuous generation of student questions has the potential to spark curiosity. The perennial question that piques teachers' interest centres on how we can activate and nurture this spark in high school classrooms amidst systemic pressures and daily classroom tensions.

Getting curious as a teacher-researcher

Driven by my own pedagogical frustrations and a desire to bridge theory with practice, this study explores how secondary school teachers perceive and position students to be curious. Utilising a collective case study design involving six co-inquiring high school teachers, this research employs qualitative methods, including interviews, video observation, stimulated recall, and student focus groups. The primary goal is to gain pedagogical insights into how teachers perceive and navigate their everyday classroom practices, identifying elements that foster and hinder student thinking, curiosity, and questioning.

Disclaimer: One of many ways forward

The following three sections, 1. Get Curious, 2. Take the Temperature, and 3. Activate Questions are shaped by insights from research, literature, and gathered data. While these sections represent crucial aspects of this research, they are not finalised. Nor can they claim to replace teachers' necessary experience and expertise in solving the puzzle of creating a curious classroom. Instead, these chapters aim to position teachers as knowledgeable experts in their classroom practices, students, and curriculum. They offer a vantage point, inviting teachers to pause, reflect, and reframe their understanding of curiosity.

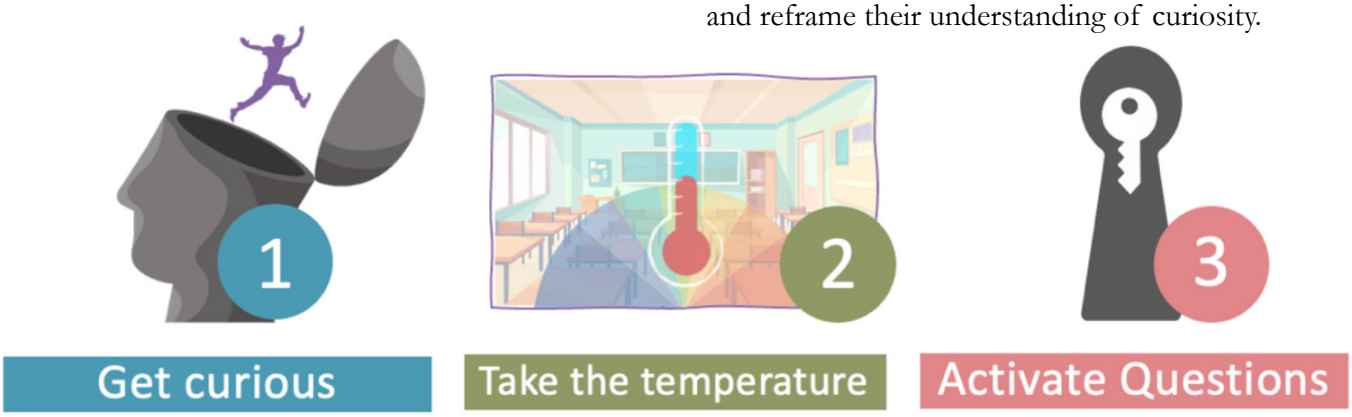

Figure 1 Steps to Creating a Curious Classroom

1. Get Curious: an entangling paradox.

Praised as a desirable educational outcome, curiosity throughout history has been both celebrated for its virtues and cautioned for its darker side. Its exploration has, at times, led to unintended consequences – as the saying goes, 'curiosity killed the cat.' Understanding what it means to be curious involves unravelling a complex history spanning philosophy and psychology before considering the implications for education.

At an early age, curiosity is an instinctive drive to explore and understand the world. In 1909, American philosopher and educationalist John Dewey proposed three stages of curiosity. The first commences with an infant's gaze, a toddler's pointing, and a primarily instinctual desire to learn experientially (Begus et al., 2014). In the second stage, curiosity becomes more social, utilising language and questions. Questioning becomes a central aspect of childhood; on average, children pose more than a hundred questions every hour (Chouinard et al., 2007). The ensuing 'why' questions, a uniquely human trait, bring us to Dewey's third stage of curiosity – a quest for knowledge driven by the desire to understand and solve problems.

And then we go to school. Susan Engel, a prominent curiosity researcher, encapsulates the transition as children reach school by exploring why curiosity wanes through schooling (2011). Her inquiry resonates with our experiences as parents and teachers that *children* are curious, yet so often, *students* are not. Despite championing curiosity as a desirable educational outcome, the reality is that curiosity is commonly observed to decline throughout schooling, which can be closely tied to a decline in questioning habits. Engel explains, "Curiosity doesn't thrive merely because it is tolerated or allowed now and then. It must be encouraged, facilitated, and guided" (2011, p. 642). Teachers hold the pedagogical keys to guide students to mature their curiosity by teaching students thinking skills and how to ask questions to inquire. Our impact can both empower and silence the opportunity to cultivate curiosity.

2. Take the Temperature: Navigating Curiosity

Before teaching students how to ask questions, it's important to recognise that the effectiveness of tools and strategies directed at cultivating questioning and curiosity are intricately tied to our pedagogical expertise, which includes the knowledge we hold of students as learners and the social culture of the classroom. Hence, taking the classroom temperature means considering the following educational theory. The intended purpose is to develop our understanding of the many ways in which curiosity can show up in the classroom culture to inform how to go about activating and scaffolding student questions.

Acting on your curiosity can be risky business. Psychologist George Loewenstein (1994) claims that curiosity is triggered in response to an information gap—a discrepancy between what we know and what we want to find out. Illustrated in Figure 2 is an adapted curiosity continuum (Day, 1982, p. 20) featuring a student leaping from solid footing, who is momentarily suspended in liminal space, towards an edge of uncertainty. It is not merely incongruity that kindles the desire for knowledge; it is the absence

of information itself that can stir a need to seek out answers. Although just like any sudden gravitational jolt, that feeling of falling can induce fear. How will my question be received? What if it's a silly question? What if my teacher and peers judge me?

Examining curiosity through the lens of the below information gap theory allows us to reframe how it shows up in the classroom across a continuum. Taking the temperature involves teachers skilfully identifying student behaviour in context to the classroom culture and values. Offering a vantage point to inform how we can position students to be curious learners, take risks and ask questions.

At the **cold zone** in the continuum, some students may exhibit signs of incuriosity, disengagement, and a lack of interest or challenge, which can sound like: "We have already learnt this" or "Why are we learning this?". Curiosity thrives on the edge of uncertainty – enough to stir an incurious state of indifference towards an information gap that is relevant and relatable to learn. Introducing uncertainty that creates some healthy doubt, a challenge or problem-solving to generate knowledge together can do the trick.

On the other hand, in the **hot zone**, where the perceived gap between the known and unknown becomes too substantial, excessive uncertainty can trigger cognitive freeze, causing a depletion of cognitive energy and hindering of curiosity. For instance, posing a question without knowing the answer can, for many, induce anxiety in a classroom culture that prioritises the performance of 'being right'. Additionally, feelings of judgment from peers and teachers can arise, preventing students from wanting to answer or ask questions.

To journey towards the **warm zone** involves cultivating a practised culture that recognises and values students' questions to find out, as a leap towards their perceived uncertainty. Students in the warm zone feel comfortable with peers and teachers and do not fear that their ideas, opinions and questions will be judged or criticised. Culture-building exercises like sharing weekly peaks and pits can support students to feel more comfortable sharing ideas

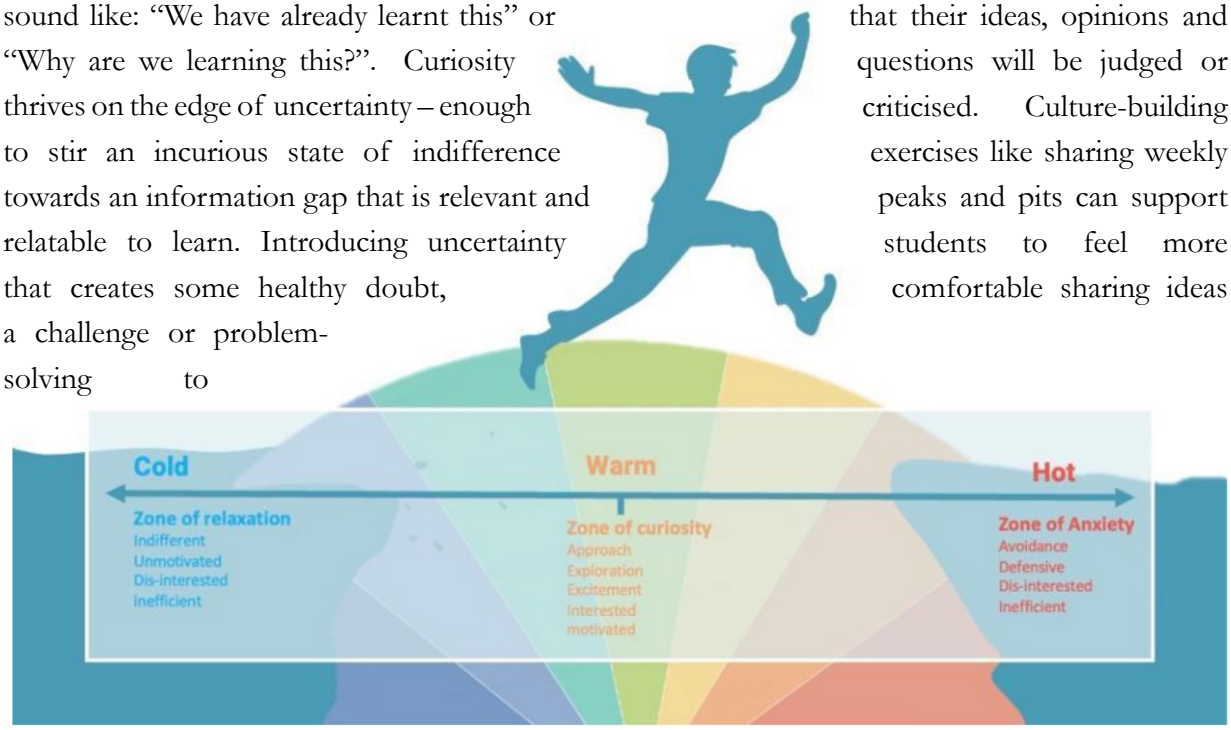

Figure 2 Curiosity Continuum adapted from Day, (1982, p. 20).

related to learning. Teachers contribute to culture building in the warm zone with careful language choices that reframe anxiety of not knowing with shared curiosity: 'Let's find out together,' 'Let's get curious,' 'What questions do we have'? When we use questions as tools, we can explore new perspectives and generate deeper shared understanding.

3. Activate Questions

Curiosity is often linked with questions, yet we often need to pay more attention to how to use student questions to spark curiosity. Student questions are not just tools for seeking information; they can also be leveraged as pedagogical tools, providing a window into students' thinking and fostering curiosity. To unlock the full potential of student questions, teachers can strategically integrate opportunities for students to think, talk and generate questions. Here are some easily found practical ideas teachers could explore:

- Teach students how to use the Q-Matrix as a question-generation tool
- Teach students about questions using the Question Formulation Technique (QFT)
- Use a question parking lot to hold onto student questions to drive motivation through a unit
- Introduce student questions to see, think and wonder
- Scaffold time for independent and interdependent thinking and questioning in a round-robin activity

In conclusion, creating a curious classroom begins with our professional curiosity to reframe how we think about curiosity showing up in the classroom and navigate the classroom culture to activate student questions and unlock student curiosity.

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Sleep-Wake Cycles for Teenage Online Gamers

By J. Maudsley, C. Driver, C. Jamieson and D. Jamieson

Introduction

Did you know that sleep is one of the most important parts of your day? Sleep helps your body to recover from your busy day and leaves you energised and ready for the next. While sleep is critical for people of all ages, it is especially important for teenagers. Teenagers who get enough sleep are helping their brains become stronger and better connected. This helps them to get better grades at school; to make helpful decisions at home and school; to continue to grow bigger and stronger; and to feel happier. Unfortunately, online gaming before bedtime is making it hard for some teens to get the sleep that they need to enjoy all of sleep's benefits.

On average, you will spend about one-third of your life asleep. If you are 15 years old, that means you have spent about five years of your life sleeping. While scientists are still discovering the exact purpose of sleep, there is no denying that it is an incredibly important part of life. Sleep helps your body recover from your daily activities and gives your brain a chance to rest and prepare for the next day (Krause et al., 2017). We have all experienced how important sleep is for the ability to function, and we are all aware of the effects of not having enough sleep!

As our lives become more connected through the internet, online gaming is becoming more common and is very popular, particularly with teenagers. Part of the attraction of online gaming is that it can be done at any time or place. While it is great to be able to access these games and communities whenever we like, online gaming late at night can have some disastrous effects on sleep and even the development of the brain (Harbard et al., 2016).

What is Sleep and Why Do We Need It?

Sleep is an incredibly important part of our lives. While we might not realise it, each night we go through several different sleep stages, which help our bodies to rest and recover. There are two main parts of the human sleep cycle. These are known as *Non-Rapid Eye Movement* sleep [NREM] and *Rapid Eye Movement* sleep [REM]. NREM sleep includes three sub-stages of sleep, which get deeper and deeper, meaning brain activity becomes slower, and it becomes harder to wake the person up. NREM sleep helps the body to recover from the day and allows memories from the day to be moved from a short-term memory-storage area called the *hippocampus* (like a USB flash drive with a small storage capacity) (Figure 1), to a long-term hard-drive-type storage area located throughout the *cortex* (the grey-coloured outer layer of the brain), with limitless storage capacity. If we don't transfer the memories from the brain's short-term USB each night, we won't have the space to create new memories effectively the next day. This would make it harder to learn new things (Wamsley & Stickgold, 2011).

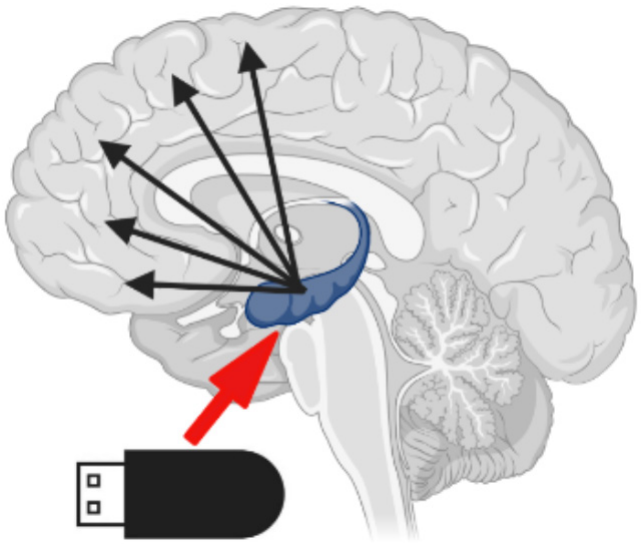


Figure 1

The Hippocampus

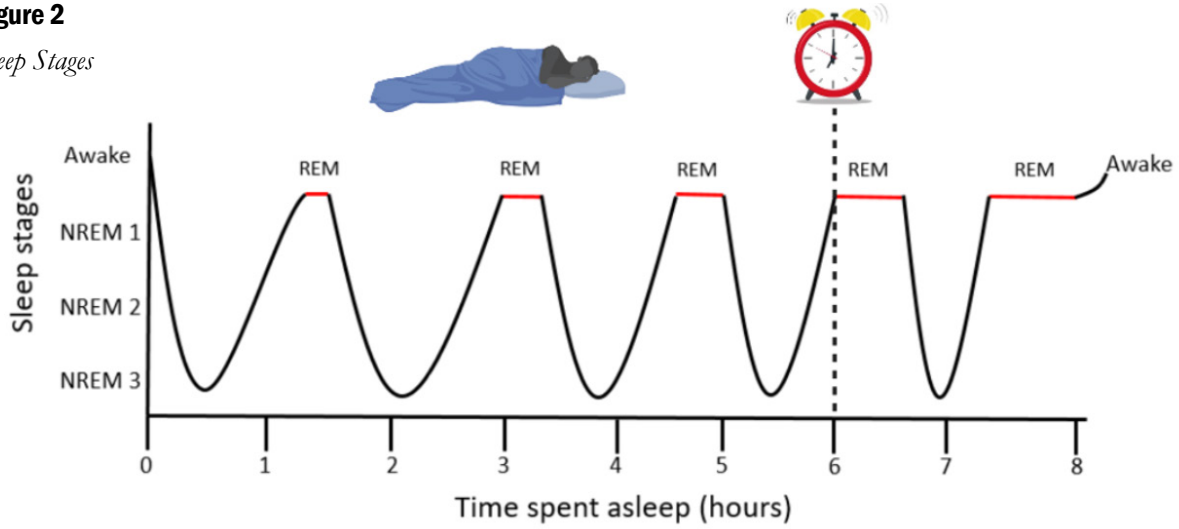
Note: The hippocampus (blue) acts as the short-term memory storage for the experiences of the day (like a USB). During NREM sleep, the day's data is transferred into long-term memory storage in the cortex of the brain, allowing the brain to learn new things again the following day.

During REM sleep, the eyes start to move around quickly (hence the name "rapid eye movement"). REM sleep is the stage of sleep when most dreaming occurs. Have you ever experienced the feeling of trying to run away from something in a dream, but you can't get your legs to move fast enough? This is because our bodies enter a sort of paralysis when we are in REM sleep, which means our bodies don't want to move. This paralysis stops us from acting out our dreams, which could be dangerous! Because the amount of time spent in the REM stage of each sleep cycle increases towards the end of the night, the longer you are asleep each night, the more REM sleep you will get (National Institute of Neurological Disorders and Stroke, 2019). See Figure 2 for further explanation.

REM sleep has been shown to be very important for creativity. When people (or animals like mice) are presented with a problem that they can't quite figure out, studies show that after getting good REM sleep that night, they are far more likely to wake up the next morning with the ability to solve the problem (Wamsley & Stickgold, 2011).

Figure 2

Sleep Stages



Note: Sleep cycles take around 90 minutes. REM sleep occurs at the end of each cycle. The amount of time spent in REM sleep gets longer each cycle, meaning that the last two REM stages account for around 60% of a person's REM sleep each night! The first REM stage may only last for about 5–10 minutes. The last REM stage lasts about 1 hour. If people only get 6 hours of sleep, they miss out on around 60% of their REM sleep. Getting a full night's sleep is very important!

How Does the Body Know When to Sleep?

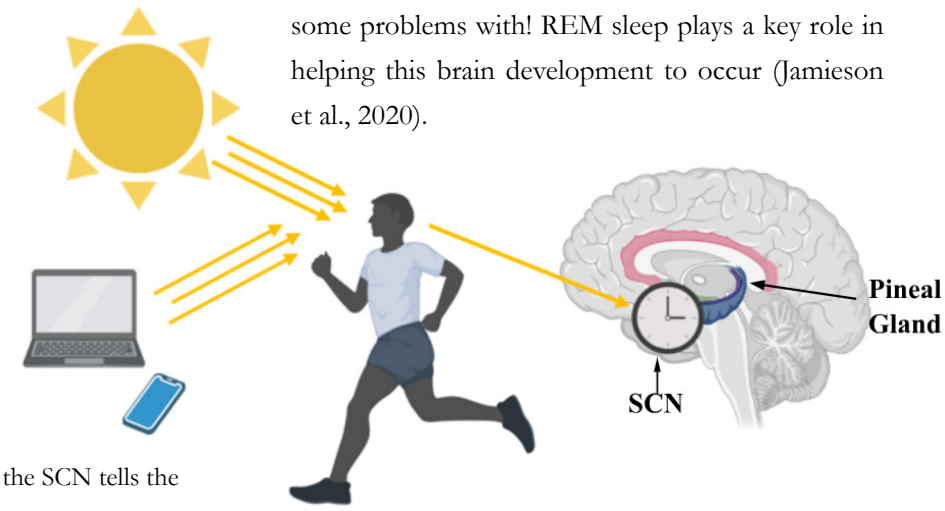
Most of us will agree that sleep typically happens at night. This preference is programmed into our behaviour, with our brains telling our bodies when to go to sleep. A special part of the brain called the *suprachiasmatic nucleus* [SCN] (Figure 3) is in charge of starting the sleep cycle each night. This sleep cycle is called the circadian rhythm and it repeats roughly every 24 hours (National Institute of Neurological Disorders and Stroke, 2019). While children and adults tend to fall asleep easily, teenagers may lie in bed for a long time, trying to fall asleep. This is because the teenage circadian rhythm is delayed, causing teenagers to become tired later in the evening and to want to sleep later in the morning. This shift in circadian rhythm happens because of the delayed release of a hormone called melatonin (Carskadon, 2011). Hormones are chemical messengers that are released into the bloodstream to send messages throughout the body.

Melatonin is released into the blood stream by a part of the brain called the *pineal gland* (see Figure 3) and this hormone's job is to get the brain and body ready to go to sleep. While melatonin in the brains of adults is released at around 10 PM, for teenagers it may not be released until 1 AM! This can make it really hard for teenagers to fall asleep at the same time as their parents. It's no wonder that teenagers have so much trouble getting up early for school!

Note: Sunlight (or artificial light from a gaming device) enters the eye and travels along the optic nerve to the built-in clock in the brain called the suprachiasmatic nucleus [SCN]. The amount of light detected by the SCN tells the pineal gland when it is time to release melatonin and get the body and brain ready for sleep.

The teenage brain is an incredible piece of hardware that undergoes important development during the teenage years. During adolescence, the teenage brain can change and adapt to different experiences. One way this happens is through a process called myelination. Thanks to myelination, the cells of the brain (*neurons*), communicate with each other at an increased rate. If you think of neurons like a slip'n'slide, myelination is like putting lots of soap and water on the slip'n'slide, helping the messages that are sent around the brain to travel much faster. Increased myelination also helps people to think more deeply, to problem solve, and to plan for the future—all things that teenagers can definitely have some problems with! REM sleep plays a key role in helping this brain development to occur (Jamieson et al., 2020).

Figure 3
Sleep, Light and Melatonin



Note: Sunlight (or artificial light from a gaming device) enters the eye and travels along the optic nerve to the built-in clock in the brain called the suprachiasmatic nucleus [SCN]. The amount of light detected by the SCN tells the pineal gland when it is time to release melatonin and get the body and brain ready for sleep.

Because of all these benefits of sleep, it is no wonder teenagers are always being encouraged to get enough sleep. Scientists have determined how much sleep people of various ages need to be healthy and happy (Table 1). The data indicate that teenagers should be getting 8–10 hours of sleep each night. Unfortunately, many teenagers today are not getting the recommended amount of sleep, and there are many things that can distract teenagers from getting enough sleep. One of these is online gaming.

Table 1

Recommended Sleep Durations

	Age Range	Sleep (Hours)
Newborn	0–3 months	14–17 hours
Infant	4–11 months	12–15 hours
Toddler	1–2 years	11–14 hours
Preschool	3–5 years	10–13 hours
School-Age	6–13 years	9–11 hours
Teen	14–17 years	8–10 hours
Young Adult	18–25 years	7–9 hours
Adult	26–64 years	7–9 hours
Older Adult	65+	7–8 hours

How Does Online Gaming Affect Teenagers' Sleep?

Due to school and family schedules, many teenagers spend a lot of time online at night. While it is both normal and acceptable to play online games, it can become a problem when the gaming starts to affect one's life. Teens might play games online so much that they are not getting enough sleep; missing out on social events; or finding themselves constantly thinking about gaming instead of doing schoolwork.

The overuse of internet gaming is a real problem in terms of teenagers' sleep quality. As well as reducing the amount of sleep teenagers get, playing online games at night also affects the brain in ways that carry on well after the console or device is turned off. Mobile phones, tablets, computer screens, and televisions all produce a special kind of light called blue light. Looking at blue light during the day keeps us alert and awake, but too much blue light at night can confuse the SCN into thinking that it is still daytime, which delays the release of melatonin. This delay in melatonin release can disrupt what is already a delayed circadian rhythm, leading to shorter sleep duration, and particularly to reduced REM sleep (Figure 2), which is vital for teenage brain development (Tahkamo, Partonen, & Pesonen, 2019). This is why a person may not feel tired right after leaving a screen. The excitement that comes with playing one's favourite online games has also been shown to stimulate the brain and keep teenagers awake when they should be asleep. This means that simply switching to 'night mode' is not very helpful, unfortunately. Scientists have also discovered that a lack of sleep in the teenage years puts people at higher risk of developing mental disorders and may even affect the way that their brains fully develop.

Summary

Late-night online gaming has clear and harmful effects on our sleep patterns. This is particularly problematic for teenagers, who already have a delayed sleep cycle. By overusing online gaming, particularly at night, gamers run the risk of delaying the production of melatonin, which can reduce the all-important REM sleep cycle. If teenagers continually do not get enough REM sleep, brain development can be affected, which can impact their adult lives. When gaming online, teenagers should think about the time during which they are gaming, and how close it is to bedtime. Teenage gamers should make sure that they are giving their brains enough time to switch off before it's time to go to sleep.

Glossary

Non-rapid Eye Movement (NREM) Sleep:
Includes three stages of sleep in which we gradually become less responsive. This eventually leads to rapid eye movement sleep.

Rapid Eye Movement (REM) Sleep:
A stage of sleep where our eyes move rapidly. During this stage of sleep our bodies and brains can recharge and develop.

Hippocampus:
A seahorse shaped part of our brain which is involved in primary and long-term memory.

Circadian Rhythm:
A biological rhythm which occurs every 24hrs.

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Redefining the Classroom as a Synergetic Pedagogical Exchange

By Leigh Jackson and William Payne, Corinda State High School, Brisbane

Introduction

Two years ago, we found ourselves asking the questions: How can we raise the bar to a level our students can meet? What can we do to make differentiation more sustainable for teachers? How can we make students participate more actively in their own learning? We work at Corinda State High School, one of Brisbane's leading co-educational high schools. Our middle years context (Years 7-9) provides us with the opportunity to innovate, and we have taken this up in the Year 7 precinct through the lens of agency and collaboration. This collaboration occurs not only between students but is also evident between the teaching teams (hubs) that began in the English and Humanities departments and have since expanded to other faculties.

Like many schools across the world, COVID-19 was a catalyst for change in our middle years environment as we found new ways to support each other and our students. Team teaching

and working in hubs became the norm, and from these, more collaborative pedagogies were developed. Inspired by the work of primary educators in South Auckland and in response to their disappointment that secondary school education was not providing the opportunities for students to drive their learning journey, the

Learning Lanes model was born. Grounded in practices derived from the OECD's *Learning Compass 2030* (2019), Hattie's *Visible Learning* (2018), and QCAA's *Middle Years Pedagogies* (Mulcahy, 2015), the *Learning Lanes* model finds the top-line melody of the competing ideas thrown at teachers. The OECD *Learning Compass* for 2030 (2019) highlights the importance of agency: "The competency to think, initiate, and act intentionally and responsibly to shape the world towards individual and collective well-being" (p. 7). The students in our middle years' context demonstrate these competencies on a daily basis.

The Learning Lane Model

The model provides middle years students with genuine opportunities to exercise agency by adopting a 'learning lane' and choosing the speed and mode they need to reach their destination. The aim is to transform them into reflective leaders of their own learning. Students select their lane through consideration of teacher feedback, practice exam results, and intentional reflection of their own growing capacities as a learner. The Learning Lanes model has four key mechanisms: *Workshops, Fast Lane, Self-Management System, and Accelerator Teams.*

Workshops

Finding flexibility in the timetable and making purposeful use of physical and human resources, we have implemented *workshops* into key juncture points within the unit (usually between draft and final submission or practice exam and final exam). We have seen great success with our targeted workshops. In these rotations, students identify their learning gaps and goals and choose a 30-minute workshop to attend. These workshops, run by any of the English and Humanities teachers in our hub, aim to address the skills and knowledge the students want to focus on. For example, in a narrative task in English, teachers may observe several concerns in the drafting phase. These key areas of concern become the focus for our workshops, with each teacher (and sometimes students) designing a workshop that approaches the skill or content in a new way with the aim of 'filling the gap'. The workshops continue to grow in our context, with Senior English and Humanities teachers joining the hub and offering Master classes (a level of extension above the workshops) to students who have demonstrated success with the task and are seeking to further lift and stretch their learning. The release of responsibility from teachers to students (not prescribing what they are taught but giving them space to choose) generates an opportunity for agency in an authentic and meaningful way that students appreciate. Differentiation has organically flowed through the workshops. Some workshops lift and stretch, while others are 'Help!' sessions to support students who have been absent or simply did not understand a concept or skill. The element of choice has been a game-changer as students feel empowered in their learning.

The impact on student learning is expressed with great clarity by the following Year 7 student:

"Workshops allow kids to learn information that they are uncertain about or a topic they may have missed out on due to absences. They allow kids to take charge and be responsible for their learning as an individual. They also make kids less bored during class time, as they are not learning things that they already know, and instead learning things they do not know." Teagan – Year 7

Fast Lane

The Fast Lane brings together the many learnings from COVID-19. Students learning at home (or independently at school) using pre-recorded materials from their teachers were able to speed ahead, and the data showed an improvement in achievement in a large percentage of our students. In this learning mechanism, students are provided with resources to independently complete each section of their assignment. Interactive worksheets or pre-recorded presentations are provided to the students in their first briefing session when they choose to 'live in the Fast Lane'. They can separate from the mainstream group and get ahead. This affords them more time in their assessment cycle for feedback and creates an opportunity for more lift and stretch or student-led workshops for those traveling at a normal or slower speed within the model. Progress is tracked using a bingo card, and students can fly in and fly out of the Fast Lane throughout the assessment preparation process.

Self-Management System

Our *self-management system* gauges students' proficiency as an independent learner and is measured on a scale from Learner permit to Open Licence. This scale reflects their ability to be a self-manager and meet the expectations of each level. For example, a Learner may need teacher support to stay on task and engaged, whereas a Green P and Open Licence holder can travel beyond the walls of the classroom to engage in their learning. Students have this freedom as they have demonstrated their ability to self-regulate, set goals, and work towards achieving these goals without needing explicit supervision or guidance from us. As a result, we have created an aspirant environment where students strive to level up. In recent months, we have introduced the 'Licence to Roam,' an added level for our Open Licence holders to go to the library or other communal areas to work on their own – with minimal supervision.

Accelerator Teams

Groupwork is a common pedagogical practice in secondary schools, though both students and teachers are familiar with the discrepancy between expectation and reality. *Accelerator Teams* is a mechanism that explicitly teaches methods of collaborative learning, tasking students to complete curriculum work through a focus on four agentic capacities: communication, collaboration, conflict resolution, and relational awareness. Curriculum work is designed through a lens of interdependence in which the achievement of learning intentions is dependent on the successful development of these capacities. To express metacognition, students measure their competence in each capacity at regular intervals and hold campfire sessions to deconstruct and resolve friction occurring in their group during a specific activity. In this way, *Accelerator Teams* is closely aligned with the OECD's transformative competency (2019), reconciling (literal) tension and dilemmas. In our context, *Accelerator Teams* has moved from a once-off project to a continuous mode of learning facilitated across the year in each unit of work. It is the way we 'do' groupwork in our subject areas. Accelerator refers to students driving each other forward as opposed to putting on the brakes

and limiting each other by an inability to collaborate meaningfully and successfully.

The Research

The *Learning Lanes* model places agency at its core as it offers students the opportunity to negotiate their own learning by making choices about the how and when and then setting their goals based on the synergetic interchange with their teachers and other learners working alongside them. The Sun Model of Co-Agency (OECD, 2019) shows us that the goal for educators is to create classrooms where "young people initiate a project, and the decision making is shared between young people and adults" (p. 11). This partnership in learning flows through the *Learning Lanes* model. Students negotiate with the teachers in the classroom their placement on the *Self-manager wall*. The model also provides students with the choice to plan their own course via the *Workshops* and *Fast Lane*. Throughout this process, we are gathering student voice and applying their feedback as we consider the way forward with each pedagogical innovation. We have found a simple way to create Hattie's (2018, para.1) "collective teacher efficacy"; the teaching team complements each other and knows together we can improve our students' learning. The workshops are a perfect example of this *Visible Teaching* strategy. On Hattie's online *Visible Learning* site (Hattie, 2018), it states that "A school staff that believes it can collectively accomplish great things is vital for the health of a school and if they believe they can make a positive difference then they very likely will." When the team of teachers in our hub comes together, they feel the power of the group, and suddenly the organisation of learning to differentiate for support and lift and stretch does not hold the same burden as when they were operating in a silo. Students and educators feel the momentum of the workshops and their sole purpose to help every student improve upon their current standard and reach for their personal best.

In Mulcahy (2015, p. 193) *Changing scenarios for teaching and learning in the middle years*, there is an emphasis on "student-centred learning that excites and challenges them and offers independence and collaboration [whilst also providing a] strong connection to peers, teachers, school community, wider community and family" (p. 193). These practices adopted by the Queensland Curriculum and Assessment Authority flow through their written curriculum and key literacy and numeracy policies modelled as best practice. The premise being Middle Years education is focused on engagement and relevance (Luke et al., 2003). By employing these umbrella themes for planning and pedagogy, educators are encouraged to address the issues of motivation, engagement, and the issues young people face in the ever-changing world they live in. The *Learning Lanes* model aims to put young people back in the driver's seat. We collaborate as a teaching team and with our students to determine the direction we should head in. The model takes us beyond 'student-centred' and into completely new territory where the relationship between teachers and students is coactive more than cooperative. The student voice gathered formally and informally throughout the learning process provides the students with a seat at the table which in turn, provides a more engaging space for them to occupy. Students are also able to see the relevance of what we are doing in relation to their end goal – achieving their personal best.

The Outcomes

Working together makes the day enjoyable for the teachers in the team and our students. We laugh and share experiences from one classroom to another. We take turns leading the groups. Morale is high in our hubs, and everyone's voice is heard, and their ideas explored. The learning is visible, and the individuals in the team—students and teachers—are visible as well.

The subsequent academic results have reflected the positive feelings students have toward this innovation as they design their own learning path. Both the teachers and students working on this project have been energised by the community that is being created. We work smart, not hard, to meet the needs of all students in our hub.

What's Next

We continue to push the boundaries of what we must do and what we can do. The hope for the future would be to create even more flexibility in what we teach, how we teach it, and what our classrooms look like.

Addressing the 'Adolescent Dip' that is often seen in educational achievement in our own context and around the world, as well as considering the learnings and unlearnings from the *International Conference for Adolescent Success: Meet Me in The Middle*, have become our primary objectives moving forward. We see the positive outcomes in what we are currently doing and how these could be extended beyond our current context. We are seeking like-minded educators to work with us and create more 'Learning Lanes' for students across Australia. Our ultimate goal is to prepare students for the familiar and unfamiliar world that awaits them. We are not preparing students for just another classroom. We are preparing them for the world.

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Learning to Learn: Implementation Principles from a Middle Years Course for Self-Regulation

By Dr Hannah Campos Remon & Adam Kuss

Introduction

This paper discusses lessons learned and the principles derived from the implementation of a middle years course on learning to learn. The course has been running for three years at Brisbane Grammar School for boys. Named *Applied Thinking,* the subject comprises three 50-minute periods a fortnight for students in Years 7 and 8. Originally conceived of as a study-skills course, internal evaluation processes revealed the need for a much broader role for the course to play in developing students' capacities for learning. It has since been developed into a more comprehensive and fundamental approach, where students have had opportunities to develop the metacognitive and self-system skills that underpin self-regulation.

Our conception of self-regulation is that it is the outcome of the development and application of metacognitive and self-system processes to the improvement of learning (Boekaerts, 2010; Marzano & Kendall, 2007; Wilson & Clarke, 2004). Herein, the term self-regulation is used to refer to the set of behaviours for learning that affect *how* and *how well* students learn within specific social and cultural contexts. Metacognitive knowledge, awareness and behaviours, and the affective and volitional aspects of the self-system (which may be more dispositional than behavioural), combine in context-sensitive ways to determine a student's self-regulatory potential in the moment. Thus, the 'self' who is regulating, is an enculturated and social 'self', not an isolated, individualised self. *Applied Thinking* seeks to build students' understanding of this, and to influence how their behaviours for learning develop over time into durable dispositions for:

- planning, monitoring, adapting and reflecting on thinking and learning; and
- engaging and connecting with purposes for learning, creativity and curiosity, capacity for collaboration and self-awareness.

This view of self-regulation has been influenced by the work of Deakin Crick et al. (2015) who emphasise the dispositional elements of learning capacity: [learning is] *an embodied and relational process through which learners regulate the flow of energy and information over time in order to achieve a particular purpose. Learning dispositions reflect the ways in which we develop resilient agency in learning by regulating this flow of energy and information in order to engage with challenge, risk and uncertainty and to adapt to change positively* (p. 121).

As self-regulation develops, a learner's capacity for exercising agency also develops, evidenced through their development of hope, optimism and confidence, belonging, flexibility and independence in learning and resilience (Deakin Crick et al., 2014, 2015). Data from this research supports the following statement in suggesting that there is: *a relationship between the ways in which a person understands themself as a learner… their basic beliefs about their identity as learners in terms of entity theory and their approach to learning which orients them to be either open to, or closed, towards new learning opportunities* (Deakin Crick & Goldspink, 2014, p. 5).

By exploring their understanding of learning conceptually, as well as through reflecting in targeted ways on themselves and their experiences as learners, *Applied Thinking* seeks to develop such capacities to support self-regulation.

Developing a course that is more than study skills

The approach of *Applied Thinking* is predicated on achieving a shift away from a view of learning which privileges the delivery of content as the most important variable in the educative process. Beyond the need to be able to study effectively for exams and assessments (which tends to emphasise memorisation), our students needed to understand how learning worked to be able to develop the agency to improve it (Ritchhardt, Church & Morrison, 2011). Behaviours for study were already ingrained in our school culture, but a broader language of learning was not. To be truly equipped with the independence to plan, adapt and reflect on their learning, and to manage the emotional and motivational demands of learning, students needed a much deeper and diverse skill set, and the awareness to support it.

For these reasons, the purpose of the course became to develop students' understanding of what learning is and how it works, beyond just the activity of study. It was intended that the course would include hands-on, experiential learning, so that it could be authentic and engaging, and provide an environment of low threat but high challenge. These components alone were not enough, however. The effectiveness of the course also depended on whether students could make sense of their experiences using concepts of learning, and vice versa. To successfully support the development of self-regulation, *Applied Thinking* had to be able to support our students to develop their own meanings from both the concepts of learning, and their own experiences, as well as identify concrete applications from their conclusions for their learning in the future.

Four objectives for the course were developed:

1. Establish a clear understanding of learning and a shared language for talking about it,
2. Promote student learning behaviours for curiosity and inquiry,
3. Create personally meaningful experiences to explore and build self-regulation, and
4. Build awareness of specific strategies for improving the effectiveness of learning.

The significance of these objectives is best captured in the words of one of our Year 7 students: *"It's almost like you give a man a fish he might be hungry, if you teach him how to fish, he'll never be hungry."* This student clearly identified the worth of their learning and saw how it could benefit them into the future.

Principles of implementation for a course on learning to learn

Three principles of implementation have emerged from our research regarding how to make a learning-to-learn course successful. These form advice for others seeking to promote learning-about-learning that goes beyond study strategies:

1. Clarity of theoretical perspective on learning is required to guide pragmatic decision making on the concepts and approach that help learners to understand learning and themselves as learners,
2. Curriculum scope, sequence and coherence need to be built over time based on developing teacher expertise for teaching the subject well,
3. Success of the subject depends on stakeholder belief that all learners can develop their self-regulation and can benefit from doing so, and
4. True depth and longitudinal benefit of the outcomes of such a course can only be realised when learning to learn goes beyond a standalone course.

The following discusses the implementation of our course and is structured by the following three questions:

1. How do you decide what to teach adolescents about how to learn?
2. How does our view of curriculum affect what is possible in helping students learn?
3. Can all students really benefit from our efforts to help them learn how to learn?

1. How do you decide what to teach adolescents about how to learn?

A starting point in the development of the course was intentionally selecting which concepts students could benefit from learning about. Developments in psychology, cognitive science, neuroscience, and education, including interdisciplinary research as far afield as machine learning, have given rise to a field of study often referred to as the science of learning. Its findings have significant implications for how schools and teachers can help students to learn better (Darling-Hammond et al., 2020). In acting on these findings, it is important to note that the impetus for change rests on schools, rather than individual learners:

The foundational knowledge provided by the sciences of learning and development, coupled with decades of insights from educational research, provides a framework for supporting children's welfare across the wide range of contexts they experience... It indicates how schools can be organized around developmentally-supportive relationships; coherent and well-integrated approaches to supports, including home and school connections; well-scaffolded instruction that intentionally supports the development of social, emotional, and academic skills, habits, and mindsets; and culturally competent, personalized responses to the assets and needs that each individual child presents (Darling-Hammond et al., 2020, p. 133).

Many schools turn to the findings of this field where a means to boost learning and learning outcomes for students is desired. Practically, including at our school, this often takes the form of developing stand-alone 'science of learning' or study skills courses, with questionable effects

on students' actual learning processes. Instead, translation of the findings of this field through careful pedagogical and curricular design is needed if it is to make a difference to the learning outcomes of students. For example, knowing on a theoretical level how the brain works does not necessarily result in changes in learning behaviour (Deakin Crick et al., 2014, 2015). Care should be taken to not be distracted by concepts that appear theoretically founded, but are actually scientifically unsupported, such as that of learning styles (Furey, 2020). Hence, it is necessary to grapple with deeper questions about what students should know about how to learn, and to have a pragmatic basis for making such decisions. Even with a variety of literature and materials available, there was no "off-the-shelf" set of concepts that could truly address learning in the most fulsome sense.

Consideration of fundamental theoretical perspectives on learning offers practical implications for how to proceed with building a learning-about-learning curriculum. In our case, the notion of constructivism, including socio-constructivism, pointed towards the ideas and concepts that could assist *students* to understand the role of the individual and social self in the meaning-making process of learning. Constructivist principles cast learners in a necessarily active role, and emphasise that, beyond receiving information, learners must exercise agency in doing something with it:

Learners are not passive recipients of information; rather, they actively construct their knowledge and skills through interaction with the environment and through reorganisation of their own mental structures... "Learning occurs not by recording information but by interpreting it." Learners are thus sense-makers (de Corte, 2010, pp. 39-40).

Additionally, it is important to recognise the relationship between individual thinking and meaning-making processes and the community of learning a student finds themselves in. Such meaning-making is always mediated by the culture of learning in which it occurs, albeit in different ways for different learners and settings: *The "situated cognition and learning" perspective stresses the important role of context [on learning], especially social interaction…cognition is considered as a relation involving an interactive agent in a context, rather than as an activity in an individual's mind… The socio-constructivist understanding of learning is seen as "participation" or "social negotiation"* (de Corte, 2010, pp. 40-41).

To be positioned to understand themselves as learners, and to develop their agency in regulating these processes, our students would need to understand this in a deep and concrete way. Our social constructivist standpoint therefore underpins not just the content of the course, but the pedagogical approaches needed to implement it.

Acting on this perspective, a focus on inquiry and student-led project-based learning was set forth as the pedagogical foundation of the course (Table 1). In this respect, our course design began with pedagogy first, from which curriculum decisions followed with ongoing refinement year by year. This refinement has been enabled through collective pedagogical learning about how to implement the approach effectively and coherently.

Table 1

Summary of Inquiry Focus and Project for Year 7 and 8 Applied Thinking

Year 7 Focus	Year 8 Focus
Learning is challenging, how can we make it easier and better?	*How can we build and adapt our learning agency within our cultures of learning?*
Year 7 Project:	Year 8 Project:
The Personal Learning Project (PLP): *Choose something new you would like to learn and spend 20 hours of intelligent practice to see how far you can get. Plan to experiment with different ways of getting the most from the learning process.*	The Learning Improvement Plan (LIP): *Develop specific objectives for improving your self-regulation as a learner and explore strategies for achieving these objectives in different cultural contexts.*

This iterative approach has led to a coherent set and sequence of topics that both supported the students' cumulative development of their concepts of learning, and allowed a meaningful and personal exploration of learning experiences. For example, to consider what it means to know yourself as a learner, students in Year 7 explored the elements of *Learning Power* (Deakin Crick et al., 2014 & 2015); a means of considering their areas of strength and weakness as a learner, and potential areas to focus on for improvement. These included mindful agency, sense making, creativity, curiosity, belonging, collaboration, hope and optimism, and orientation to learning (Deakin Crick et al., 2014 & 2015). They also considered how fundamental dispositions for learning prepare learners to engage with processes for learning such as metacognitive monitoring and strategising, which were represented in the course by the concept of the Learning Pit (discussed later).

The current course overview is shown in Figure 1. The key concepts offer students a way to think of learning as something that is constructed through individual meaning making processes, within and mediated through the contextual and socio-cultural conditions learners find themselves in.

Figure 1 Overview of the Applied Thinking Course Structure, Scope and Sequence

2. How does our view of curriculum affect what is possible in helping students learn?

The fact that no syllabus of instruction existed for this course, and that it had to be built iteratively in the first few years of its implementation, became an opportunity to improve course effectiveness. A parallel challenge existed, however, in the fact that our teachers had no experience and little preparation for teaching the material. Not only would teachers need to grasp the concepts themselves, and implement activities that make them accessible and meaningful to students, they would need to teach in a way that allowed students to see how the concepts fit together to build an overall conception of learning. This implies a layering and spiral approach; building a sequence of learning experiences with a clear thread binding them towards a growing sense of how learning works.

Unlike traditional subjects, where an established syllabus and set of course plans provides a concrete roadmap for teachers, this course required our team to build as they went – a source of considerable discomfort, confusion, and trepidation for some. Additionally, the experiential basis for decision making that teachers necessarily rely upon in traditional subjects —pedagogical content knowledge (Park & Oliver, 2008) —was not fully available to them. This emphasised the need for teachers to be responsive and intentional throughout the implementation of the course, and to 'shift gears' where required. For instance, there were many times when planned experiences or core concepts did not 'land' with the students, disrupting the flow of learning. This meant teachers had to make time to slow down, reiterate or repeat learning experiences in new ways. Rather than dwelling on the sense that the course was not perfect, or that particular plans had 'failed', the team was encouraged to focus on principled experimentation, and on adapting curriculum plans to meet the learning needs of the students. In this way, curriculum is seen as: *that which is successfully conveyed to differing degrees to different students, by committed teachers using appropriate materials and actions… and propensity to act and react, which are chosen for instruction after serious reflection and communal decision by representatives of those involved in the teaching of a specified group of students who are known to the decision makers* (Schwab, 1983, quoted in Dillon, 2009, p. 343).

In one example, teachers were called to teach the concept of metacognition, which came with the challenge of how to make a dry, theoretical concept meaningful and relevant for Year 7 boys. In the earlier years of the course, the concept had been taught along with a hands-on experience involving breakfast cereal and the task of developing a strategy for dividing the cereal to all members of a group of students. Whilst the theory itself was important, and the activity designed to demonstrate it was engaging, it was determined that the activity and the theory did not seem to fully support each other, as students did not readily connect and draw conclusions about the importance of metacognition.

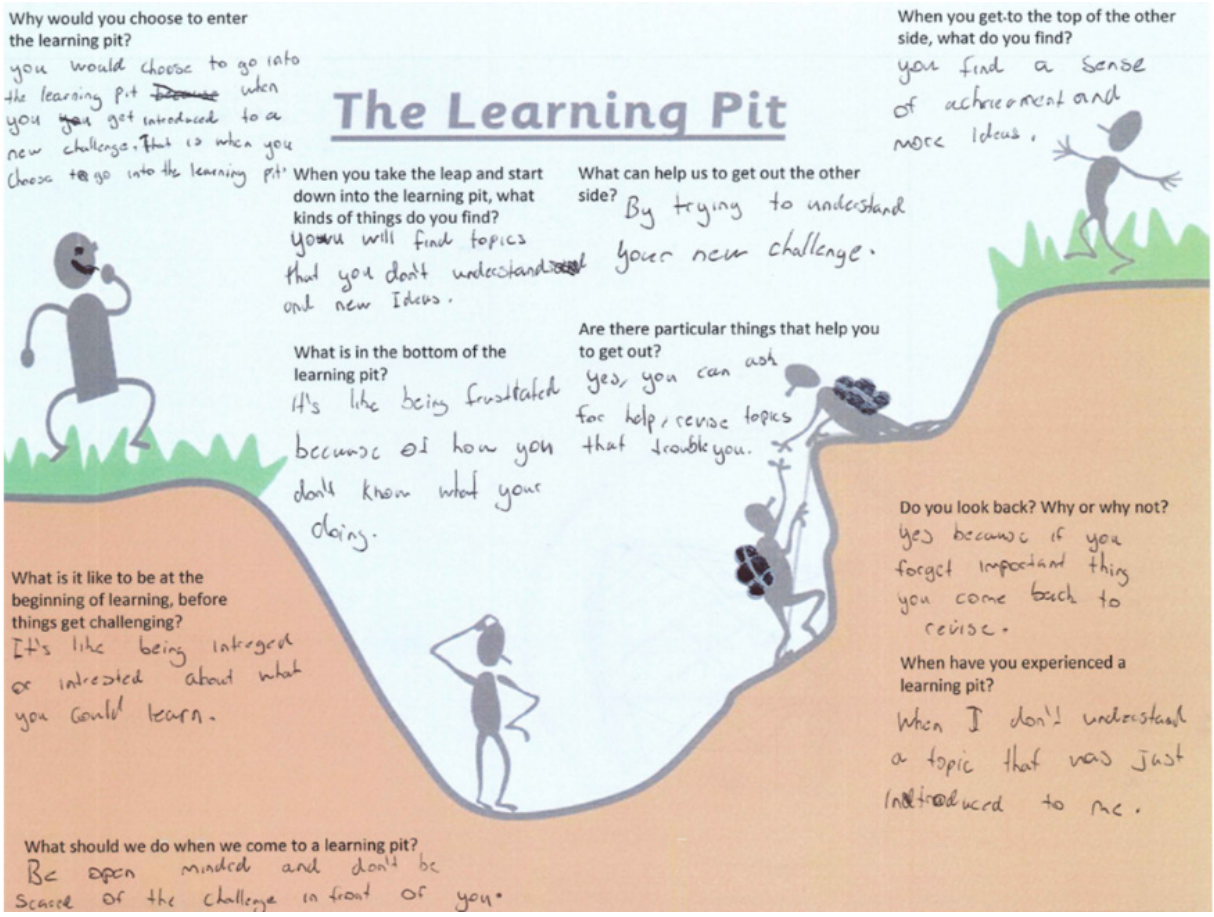
In 2023, the sequence of this set of lessons was expanded to better exemplify the concept of metacognition through the activities students engaged in. The concept of the *Learning Pit* was introduced within a Socratic discussion about the role of challenge in the process of learning. Students were encouraged to ask questions

about the idea of a Learning Pit and how it might influence learning. From here, the idea that metacognition offers a means for navigating the challenges of a Learning Pit was presented to learners, with the theoretical components of metacognition mapped to the Learning Pit itself (see Figure 2).

Figure 2 Navigating the Learning Pit Using Metacognition

From the Learning Pit analogy (in addition to the breakfast cereal activity), our students became more successful in drawing connections about the metacognitive process of learning and their own learning experiences. Figure 3 presents the response of one student showing his perspective of metacognition using the Learning Pit.

Figure 3 Example of Applied Thinking Analysis by a Student



The pedagogical content knowledge of teachers proved vital in ensuring the effectiveness of this lesson (Park & Oliver, 2008). Particularly, it was important that teachers recognised the need to support students to find personal connections between both concepts and experiences. No amount of prior curriculum planning would predict the exact nature and specifics of how to make the material accessible, meaningful, and relevant in terms of how our students come to understand it. In other words, there was no substitute for planning to respond to how learners learn and improving from there.

Routines for collaboration supported teachers to meet the challenge of developing pedagogical content knowledge for teaching the subject, and to uncover and share their emerging expertise as it developed. Teachers engaged in fortnightly meetings for each year level team, scheduled in a 50-minute lesson blocks for sharing and planning. During these meetings, the teaching teams were asked to reflect on how learning experiences were going, the students' responses, as well as consider how we could proactively refine upcoming planned lessons in light of the learning that was emerging. As their comfort and confidence improved, teachers were invited to help prepare lesson resources or activities and consider options for different ways that learning experiences could run. In 2023, more experienced teachers were asked to oversee lesson sequence development and refinement

for specific units of work. At the end of year, workshops gather collective feedback and invite input for the future improvement of the course.

Our curriculum development process required a different approach and conception of curriculum than a more traditional view of a well-planned course. Although the principle of constructive alignment holds true, in that assessable learning outcomes should be backward mapped to develop targeted learning experiences, for us, the source of this alignment came from developing and uncovering pedagogical expertise. It was through teachers' expertise about how students come to understand the subject matter well that true coherence emerged. For this reason, it was important to accept a dynamic, organic, and adaptable course development structure.

Formal internal evaluation processes were conducted throughout the life of Applied Thinking to understand and track its development and improvement. Teachers contributed to data collection through semi-structured interviews. In discussing their own progress in teaching the course, they specified ways in which they and their pedagogy had grown. One teacher in particular identified three different outcomes of her involvement in the course during her interview:

"The biggest thing was I learned about myself… I don't feel like I was ever taught any of this stuff… it definitely has changed the way I approach life in a way…I'm a better teacher because of [teaching Applied Thinking] … because I have such a greater awareness about individuals and unique approaches to learning and how much I influence that. But also, how much the class influences that…I'm able to bring it in and find tangible ways to bring it in, in my other subject with them so that they're not seeing it as this tacked-on thing. It's more, this is something you can use all the time and it's super helpful. (Teacher A, Applied Thinking, 2022).

Reflections such as these demonstrated the value teachers assigned to the process they engaged in, as well as their views of the benefits of the course to students.

3. Can all students really benefit from our efforts to help them learn how to learn?

The decisions to invest in a course like *Applied Thinking*, and to commit to its ongoing refinement, necessarily rests upon a belief that all students can achieve the outcomes that are intended. However, it is not a given that all stakeholders will share such a belief. In discussing the importance of self-regulation and its development, we have often observed teachers questioning: *"Can all students really do this? What about the ones who really struggle with school?"* We contended that it is precisely for the reason that they may struggle that it is worth it to invest in self-regulation. What better tool for assisting them to succeed, not just at school, but beyond? For students who are academically strong or who thrive naturally in traditional classroom settings, there are also benefits. Beyond learning subject matter well and performing readily on assessment, increased independence, self-awareness, self-efficacy, flexibility, and adaptability are the characteristics we hope students stand to gain from this additional offering.

Whilst this course is still in its infancy, with long-term benefits yet to be examined, student voice

and assessment data suggested students saw value in this learning:

"When you're learning in Applied Thinking, you're learning how to learn as in you're learning different ways to regulate yourself, how to improve on your learning, your culture, just your entire workspace" (Student A).

"I feel like Applied Thinking is like the subject on how to do school" (Student B).

"It's all about taking a step back, thinking, "How can I improve what I'm doing?" …If I'm rushing or if I'm procrastinating, if I'm not doing it properly, if I'm over focusing on one thing, it's all about that just stop for a second, "how can I fix this?" (Student E).

"I used to think I'm the best learner, I'm so persistent, I'm so good at collaborating…I ended up realising that I wasn't as persistent and I wasn't as amazing as I thought…It helped me to realise that maybe I had actually a lot more to work on than what I had originally thought" (Student F).

Perhaps the most compelling evidence that our intended outcomes are starting to be realised, even for students who particularly struggle with school, comes from their reflective essays completed for assessment in the course. In Term 2 of Year 8, students are asked to write a "Learning Improvement Plan Proposal", outlining the challenges they have identified to their own self-regulation, and the strategies they could use to improve. Responding to such a task requires students to show both self-awareness and an understanding of learning. Figure 4 contains the response of a student who, despite having challenges as a learner, was targeted, precise, insightful, and realistic about how his self-regulation could have been improved. The response contains evidence that all four of the objectives of Applied Thinking are both worthy and realistic goals.

Metacognition is knowing yourself as a learner and thinking about thinking. I need to learn my strengths and weaknesses as a learner. For example, I am good at assignments and multichoice tests. I am not so good at long answer tests, working in groups and managing my time. I find it difficult to engage with schoolwork and stay motivated, however I love learning when I take ownership of the content and how I learn it.

I improved my collaboration skills this year, however, still find groupwork frustrating. I prefer to work alone as the group doesn't need my contribution. My brain explodes with thoughts leaving no room to think in a group situation. Being collaborative is important because usually in life and at Grammar you must work with people. It also helps me to understand people's opinions and perspectives.

I've learnt many strategies to develop my collaboration skills. Being an active listener shows I have heard what the other person has said. Another strategy is being accountable. When I say I will do something, I will do it. I know it takes me more time, so I start early, doing it in one go. I work better when I hyper-focus on learning. I don't like it when people contradict me in long, opinionated monologues with no evidence, so I could be more patient. I should recognise and value different perspectives. This will help me solve problems, learn from others and improve my group work.

I could improve my time management skills, which according to the MAAL survey, are terrible. ADHD does not help as it affects my attention span and executive functioning skills. Time management is important because it helps you achieve your goals faster, prioritise your work and reduce the stress you feel from having a whole heap of work due. I am good at procrastination. I do it a lot, so this is an area I could improve. I have intrinsic motivation but this is bad for school as I don't want to do school work which impacts my time management. This means I can achieve personal goals but struggle in formal learning environments.

To improve my time management skills, I could try a few strategies. For example, I could start tasks early, give myself breaks, prioritise tasks, learn my patterns of productivity (e.g., do it all in one go, work at night), and use technology to do it faster (e.g., voice to text, timers). I get ridiculously distracted and so need to learn to block distractions out. The best way for me to do this is to try to find something interesting about what I am learning and focus on that. If I can focus well, this will help me get started and sustain my attention and effort through to completion. For example, this will help me identify main ideas and understand the parts of a story when reading. I could also work on this with self-regulation, for example, by planning, monitoring my progress and reflection.

Figure 4 Year 8 Student's Reflective Essay on "How will your learning improvement plan help you to develop as a learner in specific ways?"

Of course, such outcomes are not universal. Other students challenged the value of the course, for example in the following ways:

"There's not even a dux of Applied Thinking which just shows how irrelevant the marks are. It doesn't matter how well you do in it." (Student C)

"Applied Thinking drastically overcomplicates everything. It could literally just tell you, here's this technique, this technique, and this technique, use them. Instead of making you think about your learning, waste class time, going on about your feelings and how you think about this." (Student D)

Whilst these comments reveal the course may not have been as successful for these students, they serve to highlight the cultural challenge *Applied Thinking* attempted to tackle - that learning and its value is evidenced only through marks achieved on assessment, and through declarative knowledge acquired and performed. The students' disagreement with the course highlights what we argue is a failure to understand the nature of learning, rather than a problem with the basis of the course itself. Despite progress to date, this cultural challenge remains.

Developing outcomes beyond the course

Another student's view highlights yet another challenge for the course that lies ahead:

"I feel like it's more of a concept and a way of thinking rather than a subject and it should be introduced through all subjects. Not just Applied Thinking as one singular entity." (Student G).

Future refinement of *Applied Thinking* will need to focus on developing the transfer of thinking skills being practiced to learning at other times. This is a deeper issue than a first glance reveals. In part, students may apply their learning better once they develop tools that give a progressive view of where they are in their learning, as well as where to go next (Milligan et al., 2020).

However, the true nature of this challenge is that the context of education in the 21st Century juxtaposes old and new perspectives of learning in a manner which pits one against the other, instead of emphasising the deep relationships between the two. A range of overlapping and competing terms such as 21st century skills, 'soft skills', 'employability skills', 'general capabilities' and 'adaptive competencies' (de Corte, 2010) sit within the broad concept of *learning capabilities* which are a class of learning outcomes that extend the role of education far beyond the need to transmit content (Milligan et al., 2020). For these outcomes to be authentically achievable, learning capabilities should be taught in embedded ways in disciplines and through substantive content domains (Milligan et al., 2020). Students need to know more than *what to learn*, they need to understand *how to learn what they are learning*, within and in reference to all subjects they engage in. Achieving depth of learning demands that students consistently develop learning capabilities that instil a willingness, and ability to continually expand the breadth and depth of their expertise, calling on schools, curricula, subjects, and the teachers who implement them to engage with a broader agenda for learning (Bradford et al., 2006). The focus of learning for students in all

subjects needs to be "more about ways of thinking that involve critical and creative approaches to problem-solving and decision-making where students influence what they learn" (Kools et al., 2020, p. 1).

Critically, as we have learned, this will need to be supported by sharing our teachers' pedagogical content knowledge about learning to learn with teachers in other subjects. For teachers who are involved in the course, there is evidence this is already occurring within their teaching in other subjects, for them and for the students themselves:

[Applied Thinking is like the] u*ndercurrent which runs through all subjects...like the sub-curriculum that permeates underneath. But it only sits underneath, it never comes to the surface unless you tap it. We know it's there now…It has given them a shared language around these concepts [of learning]. I think it's given them some tangible strategies that they can use in real life and that's where I've always found the most success in any lesson if it has been something tangible that they could either apply straight away or try out and go that does work for me or that doesn't work for me. Or adapt."* (Teacher B)

The skill, foresight and curriculum planning that can support use of *Applied Thinking* across the board should not just be left to individual teachers, however. Returning to the advice of Darling-Hammond et al. (2020), and to build on the lessons learned at Brisbane Grammar School, our commitment to helping students learn to learn cannot be achieved through one course alone. It should be seen as core to the role of schools in supporting the holistic development of their students. Whilst courses such as Applied Thinking help with this, and help schools learn how to do this, our commitment need not stop here. Ideally, lessons such as those contained herein provide some starting point for how this work can continue beyond standalone courses.

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Michelle Mitchell's A Girl's and A Guy's Guides to Puberty

Book Review by Dr. Rebecca Seward

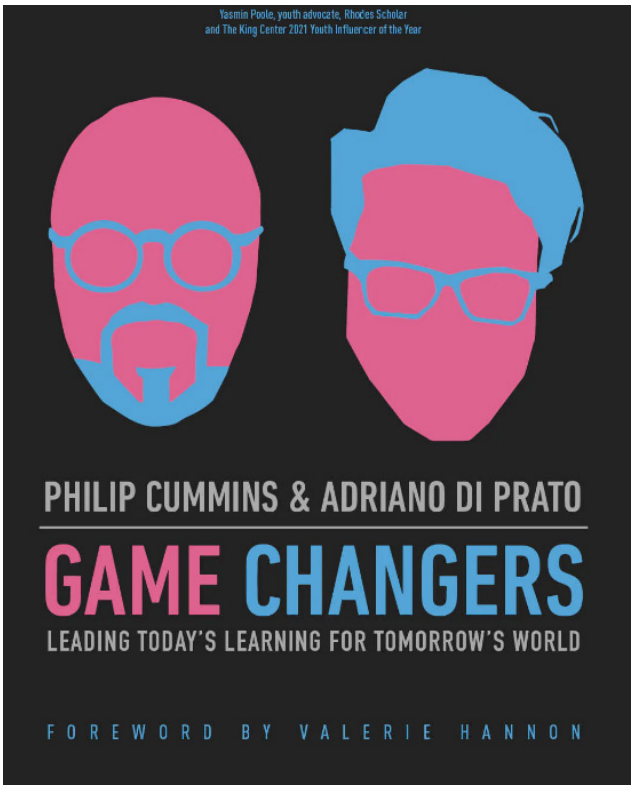
Michelle Mitchell's *A Girl's Guide to Puberty* and *A Guy's Guide to Puberty* provide colourful, visual, friendly, and highly informative advice for young people seeking information on their changing bodies. Mitchell starts the guides with a personal letter to readers where she says: *"I've noticed that not all kids like to talk about puberty, even if they have amazing adults in their life. Some prefer a little more space and PRIVACY, especially when they are first trying to figure it all out. You can treat this book like your private go-to place when you need to know more about your growing body or have questions that you are embarrassed to ask a real-life person…" (p. 2).*

Written specifically for adolescents, in kid-speak, Mitchell unpacks not just the full list of physical changes young people experience, but also the emotional ups-and-downs and different attitudes that adolescents adopt when dealing with this new stage of life. The guides feature fun cartoons with conversations about puberty, information about bodies, and tips for healthy growth. Importantly, the guy's guide features a section on puberty for girls; whilst the girl's guide features a section on puberty for boys, allowing them to learn about one another. Today, young people often turn to the internet for advice on puberty, relationships, and sex, but unfortunately the information they access there is not always accurate, healthy, or realistic. Guides like Mitchell's provide adolescents with a reliable source of information that still offers the privacy that many seek. Mitchell's puberty guides and other resources for adolescents, parents and teachers are available from: https://michellemitchell.org/

Philip Cummins and Adriano Di Prato's 'Game Changers: Leading Today's Learning for Tomorrow's World'

Book Review by Liz Benson, Executive Officer, Adolescent Success

Just like the title promises, this book from Dr Phil Cummins and Adriano Di Prato is future focused, purpose driven, and action orientated. Starting with a strong moral purpose to 'fix' the old model of schooling, Phil and Adriano put forward a case for future orientated educational leaders to step into their 'game changer' and act now to be the 'bold pioneers' who will lead today's schools into the future. At the core of their message is character for learning and leading. Cummins and Di Prato directly provoke the reader to consider whether they are a game changer by asking "Do you have the character of a game changer?" And "What is your purpose as an educator and how do you intend to put it into practice?"



Steeped in OECD and their own research, Cummins and Di Prato combine their wisdom with the voice of current game changing educational leaders to outline their vision for leading today's learning for tomorrow's world. They provide the reader with 'encounter and respond' reflection points, where the reader is encouraged (and sometimes challenged) to reflect on their game changing leadership. Importantly, they assist the reader to journal through words and images. For someone

like me who doesn't like to keep a journal, but writes all over the book I am reading, there is also plenty of space in this book for note taking and scribbling down 'encounter and respond' reflections.

Cummins and Di Prato suggest the new social contract for education includes leadership that: leads from the inside out;

- strengthens;
- informs;
- orientates;
- focuses;
- aligns; and
- enriches.

Each chapter is dedicated to exploring one of the above seven characteristics of leadership. Well known concepts such as visioning, communication, continuous learning, leading change, leading teams, problem solving, and leadership styles are discussed with a fresh take to lead learning for tomorrow's world. For self-reflection the authors ask the reader to explore their leadership development in a four-part questioning process. The four questions are:

- Who am I?
- Where do I fit in?
- How can I best serve others?
- Whose am I?

These four questions are foundational for the development of leadership identity and moral purpose.

Overall, Cummins and Di Prato's manifesto for reimagining and creating the future of education reflects their passion for changing the way our children, and our children's children engage in schooling. Speaking directly to the educational leaders of today and tomorrow, Cummins and Di Prato provide a framework for leaders searching for purpose driven leadership.

Note: Ideally this book is best read while listening to *The Game Changers* podcast where many of the inspirational quotes in this book come from.

MIDDLE YEARS DIAGNOSTIC TOOL

adolescent success

The Adolescent Success Middle Years School Improvement Diagnostic Tool is a strategic audit tool school leaders and teams can use to gauge the effectiveness of middle years practices in their school. The Middle Years School Improvement Diagnostic Tool encourages recognition of strengths and identification of areas of improvement.

The Diagnostic Tool is compilation of effective middle schooling practices as outlined in the Adolescent Success Position Paper. The Position Paper is founded upon an analysis and synthesis of current research and evidence about middle schooling (10-15 year olds).

The tool is designed to encourage reflective, evidence based conversations about current practice in the school; prioritise opportunities for improvement; and devise an action plan to implement change.

1 What is it?

The Adolescent Success Middle Years School Improvement Diagnostic Tool has three phases:

1. initial reflective discussion about middle school program;
2. in-depth reflection and evidence collection on the four areas of effective middle schooling practices (Adolescent, Educator, Place, Pedagogy); and
3. prioritising and action planning.

2 How does it work?

In each phase you will be guided to:

- individually and collectively reflect;
- use conversation protocols to facilitate reflection, evaluation and decision making;
- identify evidence to support your reflections;
- engage with current research around middle years education; and
- work collaboratively.

3 What will change?

Upon completion of the audit, you will have strategically:

- engaged in a thorough reflection, analysis and evaluation of the middle school program;
- prioritised key areas requiring action;
- created an action plan; and
- be ready to implement the plan for improved student learning.

You will also be able to apply for the Middle Years School of Excellence.

4 When will it happen?

Schools are busy places, so we recommend taking time to thoroughly audit your middle school practices. Generally the commitment is:

- introduction to the tool by Adolescent Success 1 hour;
- a full day of in-depth reflection guided by Adolescent Success; and
- 10 hours of support over the next year.

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MIDDLE YEARS SCHOOLS OF EXCELLENCE 2024

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The Adolescent Success Middle Years School of Excellence is an endorsement program for schools that teach the middle years of education.

Adolescent Success Middle Years School of Excellence Program (MYSOE) is an endorsement program for middle years education in Australasia. The Adolescent Success MYSOE program is open to any school that educates students aged 10-15 years old.

Recognition as a Middle Years School of Excellence requires:

- Achievement of the Adolescent Success Middle Years School of Excellence criteria
- Commitment to ongoing middle years specific professional learning for middle years staff

What is it?

Recognition
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Support
Become part of the leading middle years network of schools and school leaders.

Opportunity
Review and evaluate your middle years program and share your learnings with other schools.

Professional Learning
Engage in Adolescent Success professional learning.

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- Discounted tickets to Adolescent Success professional learning
- Adolescent Development Slide Shows for you to use with parents and teachers.
- 1 x copy of "Teaching Middle Years"
- 10 x hard copies of Adolescent Success Position Paper
- Coaching/mentoring conversations with an Adolescent Success educational consultant.
- Display plaque and Digital badge

How to apply

Email us for an application form and complete by 1 March 2024.

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MEMBERSHIP

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Adolescent Success Inc is a not for profit association for teachers, schools, businesses and other educators who care about young adolescents and education in the middle years.

By joining Adolescent Success you are making a key decision to enhance your professional network and to connect with other like-minded educators and businesses who are dedicated to the education, development and growth of young adolescents. Middle School is a unique time in a young adolescent's life and the educators who work with them deserve to have opportunities to collaborate and celebrate the critical middle years.

Adolescent Success is where educators like you belong.

Membership Type	Cost per year	Features
Standard	$155	All memberships include: • Connection to other like-minded middle school educators. • Members rates for professional learning and conferences. • Digital copies of the Australian Journal of Middle Schooling. • Monthly eNewsletter with current insights in middle schooling. • 12 months membership (February 1st to January 31st). • Member rates for the Middle Years Diagnostic and Improvement Tool. • Ability to apply for the Middle Years School of Excellence. • No automatic renewals.
Institutional Up to 10 teachers can be part of an institutional bundle.	$330	
International	$185	
School Leader	$190	

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