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Cognitive psychology's  
case for teaching higher  
order thinking

Finland: A good place  
for teachers and  
children

From backboards  
to blackboards

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## 12

Is talent a gift?  
*Catherine Scott,  
MACE*

## 15



How to improve the  
learning of children  
with ADHD  
*Jenna Brimner*



## 28

Reimagining  
resistance  
*Donna Evans,  
MACE*

- 03** Editorial  
*The Hon. Bronwyn Pike, MACE*
- 04** Cognitive psychology's case for teaching higher order thinking  
*Joshua Cuevas*
- 08** Finland: A good place for teachers and children  
*Tom Stehlik*
- 19** From backboards to blackboards  
*Helen McCarthy*
- 23** Homework in primary schools  
*Susan Richardson & Mike Horsley*
- 30** Book review—Ungifted: Intelligence Redefined  
by Scott Barry Kaufman  
*Catherine Scott, MACE*



## Tricky issues in education

Most areas of life and work have truisms that govern attitudes and practice. New parents are barraged with advice about putting their baby to sleep, when and what to feed them and how to deal with nappy rash, colic or teething. Cooks will be adamant about the best ways to prepare their favourite dishes just as the home handyperson has 'always done it this way'.

Education is no different, unless long held views are challenged by evidence based research, it's easy for funding policy and classroom practice alike to perpetuate the status quo. The articles in this issue of the *Professional educator* all tackle those tricky issues that have long been the subject of debate. Issues such as the benefit of homework, class sizes, single sex schools and performance reporting are just a few of the 'hot buttons' that regularly grab media attention. The recent release of NAPLAN data was hotly debated on talk back radio and most contributors drew on their own, and often dated, school experience to offer wisdom as to how we could improve student results. The premise is that we are all educational experts because we all went to school!

In his latest book *Leading, Learning and Teaching*, Professor Stephen Dinham OAM, FACE Immediate Past President of ACE, identifies a list of 'what are the supposed problems with education' and eight 'simplistic solutions that haven't worked elsewhere'. Whether its performance pay, greater school autonomy, or the focus on administrative leadership at the expense of educational leadership, they all demonstrate how easy it is have a knee jerk reaction. Much of this is driven in response to negative views about education which have entered the popular consciousness and are mostly ill informed and unfounded. I commend the book to you all.

The challenge for those, who devote their lives to improving educational outcomes, is how we ensure that there is a widely held consensus about what strategies are most effective. It's not enough to draw on the excellent research available to shape our learning institutions, our task is as much about winning hearts and minds as it is about directing resources. The more people are informed and engaged in the debates the greater chance we have of meeting the aspirations for equity and excellence.

**The Hon. Bronwyn Pike, MACE**  
ACE National President

# Cognitive psychology's case for teaching higher order thinking





## JOSHUA CUEVAS

Over the last several decades it has become increasingly common in public schools, teacher education programs at colleges and universities and in new curricular standards to emphasise integrating higher order thinking into both instruction and assessment in the classroom. After many years, if not centuries, when knowledge was the focus of education, the shift towards higher order thinking processes has been a response to an environment that often led to students memorising isolated facts in preparation for tests, only to forget those facts a short time later, essentially cramming and then dumping.

With national test scores largely flat and concerns about education mounting, particularly in comparison to other nations, the movement towards teaching higher order thinking skills has been robust. But as with any large scale proposition, the effort has generated some detractors, most notably when a major political party in a large state adopted, as part of its platform, its opposition to teaching higher order thinking in public schools ([https://www.washingtonpost.com/blogs/answer-sheet/post/texas-gop-rejects-critical-thinking-skills-really/2012/07/08/gJQAHNpFXW\\_blog.html](https://www.washingtonpost.com/blogs/answer-sheet/post/texas-gop-rejects-critical-thinking-skills-really/2012/07/08/gJQAHNpFXW_blog.html)).

In the classroom, many teachers feel that the push to extend higher order thinking skills is just another in a long line of policy initiatives based on empty rhetoric with little real-world meaning. At a time when policy makers and educators are oddly calling for the use of more research-based strategies in the classroom while also simultaneously promoting widespread myths such as learning styles (<http://tre.sagepub.com/content/13/3/308.short?rss=1&ssource=mfr><http://www.tandfonline.com/doi/pdf/10.1080/00461520.2013.804395> [https://www.psychologicalscience.org/journals/pspi/PSPI\\_9\\_3.pdf](https://www.psychologicalscience.org/journals/pspi/PSPI_9_3.pdf) <http://aed.sagepub.com/content/54/1/5.abstract>), it may be instructive to examine how cognitive psychology can contribute to the conversation about teaching high order thinking in schools.

There is a broad consensus that having students simply memorise isolated facts is not an effective way to learn. This has typically been portrayed as a situation involving passive learning during which information is presented to students as they sit silently, listening and writing notes, only to have them regurgitate that information on tests, ultimately forgetting it days or weeks later. But there is also no doubt that memory is essential to learning. If what is covered in the classroom is not retained, then one would be hard pressed to claim that anything had been learned. So how does memory fit in with the idea of higher order thinking?

One framework from the field of cognitive psychology suggests that memory is encoded in three different 'storage units': episodic; semantic and procedural memory. Episodic memory is the memory of events that happen to us, semantic memory is memory of language and meaning, and procedural memory is our memory of how to do things. The three are not equal in terms of durability, or how strongly the memory stays with us. When I informally poll university students, most of them guess that episodic memory is the strongest, the one we're least likely to lose. This is because episodic memory

is the one that *seems* most salient to us. It is the one that we most associate with the term *memory*. It is birthday parties and vacations, breakups and graduations; it is the 'story' of our lives. But it is actually the type of memory that is most likely to fade over time.

Thus, episodic memory is the least well tethered of the three forms of memory. In the event a person gets amnesia, they usually do not lose the ability to speak or understand language (semantic memory) and they usually do not lose the ability to tie their shoes, play an instrument, or drive a car (procedural memory). They forget what happened to them, prior events in their lives—their episodic memory. But those of us who do not have amnesia also experience a fading of episodic memory. We have evolved to allow our brains to regularly erase information that is not essential to our daily lives, likely to clear up 'space' for the storage of new memories. We simply cannot hold memories of everything that ever happened to us and continue to function normally. In the rare cases of individuals who have 'perfect' memories and can remember, for instance, the color of every shirt hanging in their closet on Wednesday, 19 March 2003, they almost universally report it being

a burden to remember everything that ever happened to them. They describe a mind so cluttered that it is sometimes difficult to function, as if 100 movies were constantly playing in the background as they went about their daily business. So our brains filter out the peripheral information that doesn't seem to add to our survival but instead reinforce the important information that we tend to draw on in our day to day lives.

So what does all this have to do with education? Well, pretty much everything students experience in the classroom is initially stored as episodic memory, and most of the details are likely to fade, particularly if that information is not retrieved regularly and put to use. But while we've established that a great deal of episodic memory is sure to fade, we haven't discussed the most durable form of memory—procedural memory. Once we have learned how to *do* something, it generally stays with us for life. Of course there's the old adage that we never forget how to ride a bike, and that's because riding a bike is procedural memory. Someone who learns to play guitar well can go many years without playing, and while they might be very rusty years later, they will likely still be able to play when they try again. In my younger years there were times when I went a year or two without having to wear a tie, but when I was finally forced to dress up I had no problem going through the motions and producing a tight, well-formed knot. All of these are functions of procedural memory. Semantic memory falls somewhere in between episodic and procedural memory in terms of durability, but that's for another discussion.

The next question is how this information about procedural memory can apply to classrooms and public education. That's where higher order thinking comes in. Higher order thinking is a *process*, so if retained, it should be sustained as procedural memory that should be very long lasting. As of yet I have not defined exactly what higher order thinking is, and it's likely that everyone has some idea of how they would characterise it. In my opinion higher order thinking requires active reasoning. It is *not* recalling a name or date that was devoted to memory the night before a test. This is



the type of memory most likely to fade and do so quickly. Active reasoning takes place when students encounter a novel prompt or problem, one they've never seen before, and must use active thought processes to respond to. This could be in the form of a new passage that they must interpret, solving a math equation which they've never encountered with that particular mixture of numbers, or having to compare two historical events that they are familiar with but have never considered in the same context. It could comprise thinking about a problem in Science and going through the scientific method: predicting; isolating variables; changing just one variable in one of two conditions and then comparing the outcomes to draw conclusions about cause and effect.

Ideally, if students learn to use these types of active reasoning skills and this becomes the goal in the classroom, then they should be able to take those skills and apply them across a wide range of concepts, problems, and situations. This is why we have begun to place such a heavy emphasis on involving students in higher order thinking. We want them to acquire thought processes that can transfer across subjects and that they can employ in different environments, and that will be long lasting if not permanent.

But wait. There's an important caveat, and that's that teachers often overestimate how well students can generalise what they learn in class to other settings. Problem solving that students can accomplish in one situation does not necessarily transfer to all or even most situations. In fact, when students are novices, there's actually very little transfer. This is where we come full circle and return to the old standby in education—knowledge. Knowledge has been given a bad rap in recent years because the term has come to be associated with memorising, passive lower order thinking, and regurgitation of facts prior to being dumped later that week. But knowledge is essential, and it's the glue that holds all that higher order thinking together. For instance, a scientist who has a wealth of background knowledge will be much more likely, and likely much more successful, in applying scientific thinking to a variety

of situations, just as the historian will be much more likely to recognise the intricate web of links between many different occurrences throughout history. And this type of knowledge draws upon all three types of memory.

These experts will have vivid memories of experiences they have had as they learned their craft (episodic). They will be familiar with the intricate academic language in their field and will understand nuances and details of it that allow them to make important connections and form deeper meaning (semantic). And they will have a wealth of memories related to the processes they use to experiment, problem solve, synthesise information, and ultimately come to new realisations about the natural world (procedural). Novices, in contrast, will tend to utilise their newly-acquired information and skills in isolated circumstances and will be unable to make those great leaps to applying it across

different contexts until they have built multilayered levels of knowledge.

So ultimately, we must continue to emphasise the use and development of higher order thinking skills in the classroom. We want students to use active reasoning, and the goal of education has always been long term retention. We want students to be able to transfer those skills beyond the classroom to every facet of their lives. The best way to do that is to practice and reinforce those processes until they are engrained in procedural memory. But we cannot forget that teaching students skills without also expanding the knowledge base that binds those skills together may result in no better long term outcomes than the cram-and-dump process we are currently trying to move away from.

**Joshua Cuevas is a cognitive psychologist and associate professor at the University of North Georgia, US.**



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# Finland: A good place for teachers and children

TOM STEHLIK

**I recently asked an expert from one of our leading universities, what was the most important thing one could do to lift the quality of early childhood education in Australia? He answered without equivocation, 'pay the teachers and carers more'. The response may seem simple, but at its heart is the complex matter of how we appropriately value the work of those who are entrusted with the care and education of precious and vulnerable children in their critical formative years. (Pike 2016 p.3)**

I was very interested to read in the editorial of the April edition of *Professional educator* (Vol 15, Issue 2) that increasing teachers' pay was seen as a solution to lifting the quality of education and care in Australia...because in Finland teachers are highly respected, entry to their rigorous teaching programs is very competitive, and teacher quality is high. However, their salaries by comparison with those of Australian teachers are not that high—they are valued in more subtle ways than just remuneration.

I gained a sense of the importance of the teaching profession within Finnish society and culture in 2014 when I spent two months living in Eastern Finland, thanks to a Federal Government Endeavour Executive Fellowship. Visiting schools and talking to teachers, principals and education administrators, it also became apparent that Finnish children benefit from a society in which they are valued and protected through a national commitment to equality of educational opportunity and support, which can be

summed up in the wonderful concept *pedagogical love* (Stehlik, 2016).

I think that the way we value teachers and the way we value children in Australian society are *tricky topics*—these two issues from my perspective, as a former teacher, a parent, an educator of teachers, and an academic researcher with an abiding interest in improving educational systems in our country, is based on what we can learn from other countries such as Finland.

## Valuing teachers

Addressing a group of teachers at their whole of school professional development day recently, I made the point that the process of performance appraisal which they were gearing up for implies placing some sort of value on their work, that the term *appraisal* is more often applied to valuing something in a monetary sense, such as real estate or an antique object. The fact that professional development and teaching performance are now linked to the Australian Institute for Teaching and School Leadership (AITSL) standards and measured in terms of time served and standards achieved, as if PD were a form of currency, also reinforces this marketised approach to valuing teaching.

At the same time schools in Australia are under pressure to promote themselves in a competitive educational marketplace, appraised against outputs, metrics and achievements through instruments like The National Assessment Program—Literacy and Numeracy (NAPLAN),

and available for public comparison and scrutiny through MySchool websites. This has had the concomitant effect of focusing on teacher quality as a dependant variable that is presumed to directly affect school and student performance, creating some very unfortunate and uninformed public criticism of the teaching profession and teacher education programs at universities.

For example, when he was Federal Minister of Education, Christopher Pyne was using 'teacher quality' as a measure of school performance, looking for reasons why Australian school children were not performing so well in international academic assessment programs such as the Program for International Student Assessment (PISA) compared with countries like Finland (Pyne, 2014). Unfortunately some of the language used in speeches, media releases and even in parliament reinforced the notion that our teachers are not good enough, that our teacher education programs are below par, and that the profession as a whole is not valued for the important moral purpose that it brings to society and our children. As Pike puts it, appropriately valuing 'the work of those who are entrusted with the care and education of precious and vulnerable children' is a complex matter—and not one that should be caught up in political point-scoring (2016 p.3).

Ironically, it was through the Federal Department of Education that I received a scholarship to be able to visit Finland



and to compare the way teachers are valued there. It is probably well known that teaching is a high status profession in that country, that all teachers have a Masters degree, that entry to teacher education programs is highly competitive, and that education at all levels is well funded by the state and free to all. However what I came to realise after being immersed in Finnish culture for two months, is that historically teachers were seen as 'candles of the people' lighting the way to Finland's independence in 1918, when education was recognised as the key to creating a modern civilised state (Booth, 2014). Education is therefore culturally critical to this small country in maintaining a socially democratic economy within its geographical position, located between Western and Eastern Europe, with the successful Swedes on one side and the large neighbour Russia to the east.

This nationalistic notion still pervades at all levels of Finnish society, reinforced by the fact that teaching is seen as a 'favourite occupation' and that in almost every household, it is a matter of national pride that all children will be able to attend schools where all teachers are trusted to nurture and support not only their intellectual and physical development, but their social and emotional development.

However, if we take the view that the success of Finland's educational system is due to the quality of its teachers, and if we adopt the suggestion that 'paying teachers and carers more' in Australia will bring us up to speed with such countries, then a simple comparison of relative salaries does not support the argument. The average teacher's salary in Finland is around 32,400 Euro (\$45,600) per annum. By comparison, in South Australia annual teacher salaries range from \$61,500 to \$89,000 and are no doubt higher in eastern states.

This is just one reason why it is difficult to make absolute comparisons between Finland and Australia, because there are so many contextual differences. Like the Swedes, the Finns are highly taxed because of the amount of social welfare and subsidies they benefit from, such as free childcare, education, healthcare

and other services. Finnish teachers are not paying off HECS debts, paying for their children's education (even the small number of independent schools are fully funded by the state), and are generally experiencing a reasonably low cost of living compared with Australians. So while at first glance the apparent disparity between absolute salaries seems as though Finnish teachers are not 'valued' in a monetary sense, this does not give the full picture.

I think it is tricky then to suggest that just paying teachers more will result in higher teacher quality. It might contribute to some improvements, but I believe we would also need to value teachers in more subtle ways, like the Finns do. For example: afford them much more respect as trusted professionals responsible for nurturing the citizens of the future; instead of centralised administration, devolve responsibility at the local, school and classroom level; allow freedom to teach based on trust rather than on performance management, inspections and high stakes testing; and above all do not send messages via politicians, uninformed commentators and the media that teachers are the problem—they are part of the solution.

## Valuing children

My first encounter with Finnish school teachers and principals was at a conference in Sydney in 2005. On being introduced I mentioned their country's recent high performance in the PISA results at the time. They almost shrugged this off, saying 'Yes we are doing well...but we are not so concerned with academic results - we are more concerned that our children are happy'. I was profoundly impressed by this statement, which then motivated me to visit Finland to find out more about this central concern for children's wellbeing, and whether there was actually some correlation with this approach and their academic performance as a country.

Having now visited the country several times, I can say that I believe there is a genuine link between the way children are treated and valued in Finland, and their successful performance across a range of indicators: school retention,

school completion, literacy and numeracy, transition to further education, and overall wellbeing. Much of this has to do with the education system as a whole—it is well-funded, with schools providing pathways to senior high school, vocational school, or specialist music and art senior high schools; with childcare subsidised and available day and night for 365 days of the year; and well-resourced with all children (and teachers) benefiting from a cooked daily meal; as well as free transport to school for many children.

However, the wellbeing of children in Finland is not only at the heart of their education system, but of their society itself. It really is an example of the aphorism that 'it takes a whole village to raise a child'. Children are not under societal pressure to perform, in fact the school day is comparatively shorter, homework is kept to a minimum, and there is plenty of play time between lessons in the comprehensive schools, so that hothousing or accelerated learning are definitely not part of the 'secret' to Finnish educational success. In fact it is quite the opposite, and this measured approach was described to me as 'unhurried working', in which healthy living, sport, art, music and culture are valued just as highly as academic work.

The tricky part of this whole-of-community approach to supporting the wellbeing of children, and in turn respecting teachers, is the level of trust apparent at all levels. It is tricky because here in Australia we seem unable to generate that amount of trust in our schools and with our children. I am referring to the fact that in Finland I could visit any school and be welcomed without having to sign in, to show that I had a current criminal history clearance or police check, or a certificate in responding to child abuse and neglect, and so on. I was told that 'anyone is welcome to visit our schools'.

It is tricky because their children are trusted to achieve without high stakes testing, because teachers are trusted to teach without external pressure from regulating bodies or even their principal, and because principals are trusted to run their schools without the same

level of accountability that we would require. The whole picture is based on relationships of trust that are developed at all levels, and a form of self-evaluation and collaborative accountability. This is something that we in Australia would struggle to develop given the path we have gone down in terms of regulatory policies and accountability requirements.

The Finnish educator Pasi Sahlberg suggests that Finland has managed to avoid being infected by the Global Education Reform Movement (GERM) virus—characterised by standardisation and regulation, outcomes-based learning, corporate management models and accountability-based testing. He believes 'the reason is clear: professional strength and moral health of schools' (Sahlberg, 2015, p. 1).

I believe we could learn from Finland by developing professional strength and moral health in our schools and in the teaching profession. However, this is tricky as it would require a major shift in a whole-of-society mindset from a culture of compliance to one of trust. That is trust in our teachers as professionals and in our children as precious cargo; so that all can benefit from less pressure to perform and more opportunity to develop positive learning relationships in an environment of pedagogical love.

**Tom Stehlik is a senior lecturer at the University of South Australia.**

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# Is talent a gift?



CATHERINE SCOTT, MACE

**'Intelligence' as a concept has a fairly short history. While people had noted that some seem to find learning more difficult, the scientific study of intelligence had its origins in the 19<sup>th</sup> century. The impetus to apply the methods of Science to understanding human beings led to the founding of Psychology as a discipline and among the first to attempt to explain differences in 'intelligence' was Darwin's cousin, Francis Galton.**

Biology was an established Science and it profoundly influenced theories about and methods of study of human beings. Although an understanding of how heredity works was some way off, Galton and other students of human ability regarded intelligence as a biological attribute, inherited as are other traits, such as height and eye colour. Galton attempted to prove his theory via his study of genius, purporting to show that brain power is indeed inherited.

Interest in measuring cognitive ability, began in earnest, with the advent of compulsory schooling. It became plain that some students struggled with mastering basic knowledge and the French led the way in exploring differences that could explain these difficulties. French psychologist Alfred Binet developed the first intelligence test, the purpose of which was to help identify those children who had educational difficulties of a sufficient magnitude as to require extra assistance. Binet did not believe that intelligence is inherited, but that his tests provided a snap shot of current attainment without in any way suggesting limits on possible learning.

It's important to note that while intelligence tests were invented to allow provision of assistance to children with additional needs, once the testing movement crossed to the US, a darker purpose came to dominate. In a continuing atmosphere of belief in the biological basis for human attributes intelligence testing came to be used to prove the 'inferiority' of some ethnic groups and to diagnose the brilliance of some individuals. Lewis Terman designed an American version of Binet's intelligence test and employed it to select a group of highly gifted children—the so-called 'termites'. The children and later adults were followed for decades to determine—prove more like—the effects of braininess on attainment.

Terman's participants did indeed do very well, achieving academic and career success. A later re-analysis of the data revealed, however, that their achievements could be entirely explained by the social class from which they came rather than their IQs. It's no surprise to learn that very few children in the study were from anything other than white families. In addition, some children rejected by Terman went on to achieve extremely high attainments, including winning a Nobel Prize, which none of the termites did.

In the 20<sup>th</sup> century the idea of providing separate educational facilities for children with additional needs became extremely popular and specialist facilities were established for children with sensory deficits and cognitive difficulties,

among others. Enthusiasm for keeping children with additional needs out of regular classes waned however, as integrating all children in mainstream education was shown to be of advantage to all children.

Children with disabilities benefit from mixing with typically developing children, and those with cognitive delays experience improved language and social learning in integrated classrooms. Research has shown that dealing with diversity is also beneficial for typically developing children, who experience a variety of social emotional and cognitive benefits. There remains one group of 'atypical' children for whom separate education is advocated, and that's children with high levels of cognitive competence: the gifted.

There is a considerable industry in advocating for gifted education and much is made of the special vulnerability of the highly intelligent. As an aside, it could be argued that the best way to overcome vulnerability is to learn to deal with difficulties rather than avoid them. Indeed there is a successful psychological therapy that is built on just this type of confronting of challenges, rather than avoiding them. In any case, as children with additional needs are increasingly educated in mainstream settings, the pressure to provide gifted children with a separate education continues.

Despite strong evidence that intelligence is profoundly influenced by people's experiences, particularly in education, belief in the innate, unchangeable nature of intelligence persists in English-speaking countries. Why English-speaking? Other cultures have different models of human attributes, including intelligence that both better fit what Psychology has taught us and are ultimately more useful as a guide for policy and decision making.

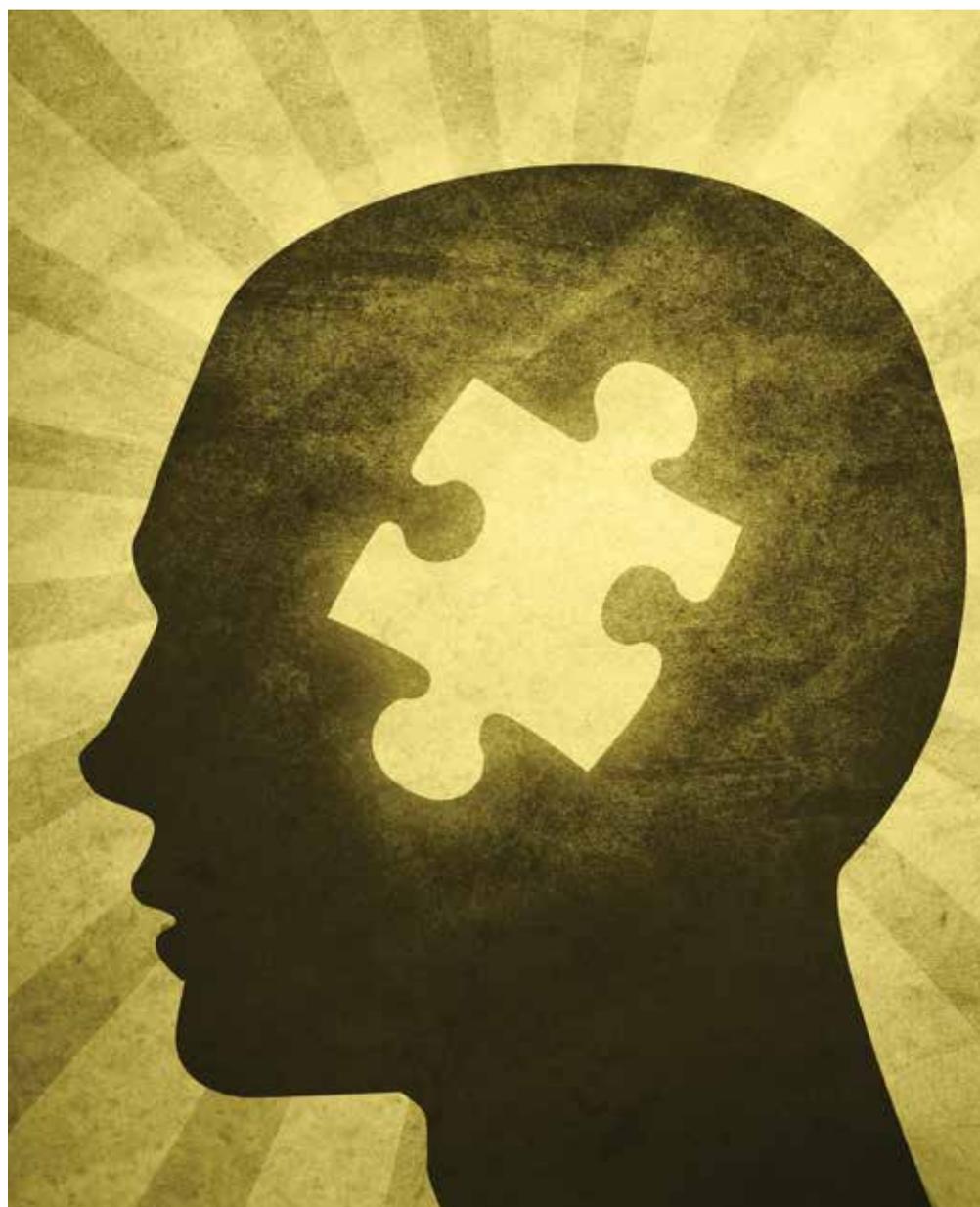
The model of the person dominant in English-speaking cultures is heavily skewed by a belief in the role of fixed internal attributes in causing behaviour and achievement. When trying to explain and understand why a person has done or achieved something, English-speaking people go straight to trying to figure out what kind of human being that person

is: smart; cranky; kind; sporty and so forth. Once the person's traits have been identified the expectation is that the original behaviour will be seen always and everywhere, in any circumstance. Traits are, in other words, universal and fixed. If a person is 'smart' then he or she will always do well in school, and on tests and assignments.

Other cultures have different models of the person and thus use different explanatory concepts. Asian cultures, for example, are much more likely to call on a mixture of innate and situational factors

to explain behaviour and achievement. Doing well in school is more than a matter of being smart, effort is also required. Asian parents are highly likely to subscribe to this idea and to emphasise to their children that effort is key to doing well.

The theorist most associated with exploring models of ability is Carol Dweck. She calls the belief that human attributes, intelligence included, are innate and unchanging 'fixed mindset'. The belief that intelligence can be developed she calls 'growth mindset'. ▶



► Dweck and her co-researchers have explored the consequences of having different mindsets for achievement. Her work suggests why an emphasis on giftedness may do more harm than good.

For a person with a fixed mindset about ability being diagnosed as 'gifted' has particular outcomes. The main motivation becomes to curate their giftedness, that is, to avoid anything that calls it into question. Even one instance of failure—defined perhaps as a lower grade than hoped for—can suggest that the original diagnosis was incorrect and that they are actually 'stupid'. Note the binary nature of the judgement: people are either 'smart' or 'stupid'. There is little sense of a continuum in the way ability is discussed and understood.

Along with a fixed mindset goes the belief that learning and achievement should come effortlessly. Having to try is the attribute of the 'dumb', and 'effort' therefore is the enemy. The

consequences of this are many, including avoiding challenges and more difficult subjects and assignments. Not trying can lead to under-achievement and the problem of the 'gifted underachiever' is much discussed in education circles.

In the context of a culture inclined to a fixed mindset labelling a child as 'gifted', risks setting up the sequence of events that can lead to, if not failure, then at least educational achievement that falls short of expectations. There are of course cultures and subcultures and to a fair degree men and women still inhabit different subcultures. Men are still regarded as more naturally able than women, a belief that sets boys up to believe that effort is their enemy. Girls on the other hand, are regarded as less able, and this inclines those who wish to do well in school to try harder to compensate. Rather than boys' 'low self-esteem' explaining their, on average, somewhat lower educational achievement it may be their self-assurance that is the problem.

In English-speaking countries, Mathematics and some Science subjects, particularly Physics and Chemistry, are seen as requiring a particularly high level of 'fixed' ability. Certainly at the higher levels of these subjects effort is required for mastery. This necessary expenditure of effort may explain why it has become harder to persuade even competent students to enrol in the study of these subjects. Those who have decided that they are 'stupid' won't attempt them; those who are 'smart' won't study them least the effort required and the possibility of failure reveal that they are actually 'dumb'.

In a context in which schools are encouraged to compete with each other there is an impetus to establish select entry classes for the gifted. Such programs attract middle parents, who are more likely to believe that their child is gifted and in need of special provision. The placement of students in special streams or classes for the gifted, however, potentially harms them because of the effects of a fixed mindset, as we've discovered.

The existence of classes in schools also potentially harms the rest of the student body. Given the tendency to turn a continuum into either/or the danger is that all those students not in the gifted stream will be seen and see themselves as 'stupid', with all the damaging effects that follow. Undoubtedly, being deprived of the example of successful students as classmates can also harm learning.

There seems to be little to recommend the establishment of gifted classes and a number of possible downsides. It could be time to stop and reflect on whether such segregation by stealth is beneficial, and segregation it is, as students in gifted classes are much less likely to be from less privileged groups, for example, Indigenous, recent migrant and poorer families. Maybe it's time to return to a more truly inclusive model of schooling.

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# How to help improve the learning of children with ADHD

JENNA BRIMNER



Educators, teachers, principals, and other school related professionals come across a diverse collection of children in the classroom each year. About 80 per cent of children have little difficulty with the demands of the classroom but the remaining 20 per cent require extra assistance to master learning.

Attention-Deficit Hyperactivity Disorder (ADHD) is a developmental disorder of self-control, which includes problems with attention, working memory capacity, impulse control and activity level. If teachers strive to understand the problems that children with ADHD face, it will assist them in developing appropriate strategies to help improve their academic achievements.

Current research identifies that significant problems that children with ADHD face are the lack of teacher knowledge, difficulty with focusing attention, and problems with working memory. This article will explore the problems that these children face as well as effective strategies that teachers can use to help these children succeed in their learning and in the classroom.

## Problems

### Lack of teacher knowledge

Educational research has confirmed the importance of teachers' knowledge and understanding of the characteristics of ADHD. Approximately one to two students per general classroom can be expected to have this disorder and it is imperative that teachers become knowledgeable in recognising the signs of ADHD in order to refer children for a formal diagnosis. Once teachers understand what problems these students face appropriate modifications can be made. ►



### Difficulty focusing attention

One of the most substantial problems that students with ADHD face is their lack of directed attention, which is one of the most critical skills for success in the classroom. There are three different types of attention: sustained attention; selective attention, and attentional control/switching. Sustained attention is when a student is able to maintain their attention over an extended period of time. Selective attention is when a student pays attention to relevant materials and is able to block out the irrelevant materials or distractions. Attentional control/switching is when a student utilises executive functioning skills to change their attentional focus. Additionally, attentional control is the ability to inhibit automatic, irrelevant responses and initiate more relevant responses (Preston et al., 2009). Students with ADHD are most often confronted with difficulties in attentional control/switching. Attentional

control is imperative for them to succeed as it directs other higher-order cognitive processes. Consequently, if a student has difficulty with this skill then their academic achievements will be negatively affected.

### Problems with working memory

Working memory is where information is stored for a brief period of time, so that it can be utilised. This skill is demonstrated in the classroom mainly when students can follow a set of instructions from the teacher. Research has suggested that students with ADHD also typically have a working memory deficit and also often have a difficult time remaining seated. Additionally, students with ADHD often interrupt the class rather than raise their hand, and disrupt the class due to their hyperactivity. Poor working memory exacerbates these daily problems, causing students with ADHD to have an even more difficult time following tasks from the teacher. When

a student does not know what they are expected to do, they will most likely sit doing nothing rather than asking a teacher for help. It is crucial for the teacher to develop a strategy to provide students with ADHD with aids to support their working memory, for example visual aids, such as lists of instructions and task steps.

## Strategies

### Mentoring programs

A mentoring program for students with ADHD is beneficial to both the mentor and the mentee. When the role models apply for a mentoring program they are matched with a student who has experienced similar academic and social challenges. The role models meet with their mentee once a week for a mentoring session of one hour. Each session will vary but should follow a similar routine: A warm-up activity (five minutes); assisting the child with an academic



related activity (15 to 30 minutes), engaging the child in a non-academic activity (15 to 20 minutes), and completing a learning log (five minutes). Many role models and students create a special bond together because a role model acts as someone that the student can rely on and trust, which will assist the students with ADHD throughout their schooling years. Through the relationships created with the mentoring program there are documented improvements in academic performance, school attendance, and a positive self-image for the student with ADHD.

### Sticky notes and highlighters

Strategies are available to assist with selective attention problems, sustained attention problems, impulsivity, and high levels of verbal and motor activity. In one strategy, sticky notes and highlighters are the main tool used to help support students. There are a variety of ways that sticky notes and highlighters can be used.

### Selective attention problems

- Using highlighters to follow along with the teacher or with independent work.
- Using sticky notes to mark where to stop or when a break is needed.
- Using sticky notes for the teacher to write down task priorities. Students can then use a highlighter to mark off when they have done each task.
- Using sticky notes when learning spelling words or multiplications.
- Using sticky notes to give the student a reminder.

### Sustained attention problems

- Getting students to write down the task instructions and cross them off with a highlighter once they have finished.
- Using sticky notes to remind students what they need to do during a specific time period.
- Using sticky notes to remind students what to take home and what to bring back to school with them in their journals.
- Encouraging students to write down questions or thoughts on their sticky notes while reading or during class time.

### Impulsivity

- Teachers can write a list of projects that students can complete when they have finished a task in class. The students can then highlight their choice.
- Teachers can create a 'parking lot' to use during classroom discussions. When a student wants to comment on something but it is not the appropriate time, they can write it on a sticky note and place it in the parking lot. Teachers will allocate an appropriate time to discuss all the notes that have been placed in the parking lot.
- Teachers will give the students a certain number of sticky notes and every time that student talks out loud or provides an off-topic comment they will have to return one of the sticky notes to the teacher.

### High levels of verbal and motor activity

- Getting students to use a highlighter to follow along.
- Teachers will give the student three sticky notes. Each sticky note will have the following written on it: move to another desk; go to a standing desk; or take a bathroom break. The student will be able to use one of these sticky notes to change their environment.
- Teachers will provide the students with an allocated amount of sticky notes and each sticky note represents a 'free movement pass'. The student will be able to use this pass when they need to move around the classroom.

### Self-monitoring of attention and performance

The ability to be able to self-regulate is a crucial skill, as it helps students to manage their emotions and behaviours. Research has demonstrated that students with ADHD have a difficult time with this skill, however, the strategy of self-monitoring of attention and performance appears to be helpful. Self-monitoring is a critical process of self-regulating. It consists of the student assessing and recording their own behaviours, in this instance their attention and performance. When a student is told to self-monitor their attention or performance it is important for the teacher to provide them with a guideline as to what they should be recording. For example:

- |                    |   |
|--------------------|---|
| <b>Attention</b>   | → Did I pay attention?                        |
|                    | → Did I stay on task?                         |
|                    | → Did I get up to avoid my work?              |
| <b>Performance</b> | → How many problems did I attempt?            |
|                    | → How many problems did I answer correctly?   |
|                    | → How long did it take me to finish the task? |

These examples are just guideline questions that encourage students to thoughtfully consider and think about ways to monitor their own behaviours. The teacher could use a special card each day for the student and focus on either self-monitoring of attention or self-monitoring of performance.



It is important that the student does not self-monitor for both attention and performance, as that will be overwhelming for the student and will not help them in attaining success in their learning. The teacher should also use the same monitoring tool to assess the student on either their attention or performance at the same time as the student. At the end of the lesson the teacher and student should discuss what they recorded and why. This will give the teacher a chance to give the student feedback but also give the student a chance to explain their recording. Evidence suggests that the use of self-monitoring will increase a student's academic performance as long as it is efficient, appropriate, acceptable, and relevant to the student's needs and targets.

### Classroom design

Designing and setting up a classroom can be a challenging task, as it is important to include and think about all the students and their different needs. A classroom that has a student with ADHD should be carefully structured and organised. The student should be aware of the routines and rules as well as what is expected from them. An open classroom layout is not appropriate, as it gives them an opportunity to be easily distracted. When a student is distracted their learning is negatively affected.

Most of the time one of the most beneficial spots for a student with ADHD, to help minimise distractions, is at the front of the classroom. However, this is difficult to achieve because if this strategy is being implemented, the student should not feel centred out. Some teachers may prefer to put the student at the back of the classroom with space behind them so if they need to get up and move they can do so freely and without disrupting the rest of the class. If this strategy is being used, it is important to have a student without ADHD seated next to the student with ADHD to act as a role model for them.

### Gaining and maintaining attention

Having a student with ADHD who has a difficult time staying engaged can be a challenging task. The following list includes some strategies that could be used in the (chiefly primary) classroom to help with student's attentiveness:

- Using props and drama to spark interest.
- Adding a touch of mystery by bringing in a box that has items inside.
- Using students names when giving examples.
- Making connections with students and draw on their past experiences.
- Using graphic organisers to help students comprehend information.
- Using musical instruments.
- Using a clap pattern.
- Using a fun and clear verbal signal (Teacher: Scooby dooby doo, Students: Where are you?).
- Using visual signals.
- Being creative and using drawings to help students understand concepts.
- Moving around the classroom.
- Giving the student with ADHD a fidget toy (koosh ball, blu-tack, squishy toys).

Some trial and error may be involved, as not every strategy will be successful when attempting to keep students engaged and focused.

### Differentiated teaching

When teaching a student with ADHD, differentiated instruction may be necessary. There are a number of different approaches to differentiation and which approach to take depends on the student. It's important to understand both ADHD and the unique qualities of the student. The teacher will need an exceptional understanding of what the student is capable of and the student's prior knowledge of concepts and material.

Regrettably, the most common strategy used for students diagnosed with ADHD is to medicate them. However, all of the previously discussed strategies focus on techniques that do not require medication. The strategies described guide the students and help encourage them to handle their own type of behaviours that they experience on a day-to-day basis, rather than simply trying to eliminate the behaviour entirely. Pelham and Gnagy (1999) stated: 'Simply medicating children, without teaching them the skills they need to improve their behaviour and performance is not likely to improve the children's long-term prognosis' (p. 226).

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# From backboards to blackboards

HELEN McCARTHY



**Ask anyone who has worked in Indigenous education for any period of time, what the ultimate perennial problem is and they will undoubtedly respond with: 'Getting the students to school regularly'.**

A plethora of reports and inquiries have been written about Indigenous education and what should be done, but the disproportionate gap between the attendance rates of Indigenous and non-Indigenous students remains. In May 2014, the Council of Australian Governments (COAG) agreed to a new target to close this gap between Indigenous and non-Indigenous school attendance by the end of 2018. At this point there has been little change in the Indigenous school attendance rate from 2014 (83.5 per cent) to 2015 (83.7 per cent). In fact the data shows in Semester 1, 2015, 79.3 per cent of non-Indigenous students attended school 90 per cent or more of the time compared to only 49.2 per cent of Indigenous students ([closingthegap.dpmc.gov.au](http://closingthegap.dpmc.gov.au)). William Jonas in his role as Aboriginal and Torres Strait Islander Social Justice Commissioner wrote: 'The failure of Aboriginal students to complete basic levels of education amounts to a crisis for future generations. There must be a change to the way Indigenous children and young people are schooled so that the education system can function as a vehicle for cultural and economic renewal' (Partington and Beresford, 2012, p. 36).



Advocates of Indigenous education believe that it is in fact the system's lack of relevance that is the problem, since it has the propensity to neglect to understand the cultural needs and aspirations of Indigenous peoples (Harris, 1990; Malin, 1989; Durnam & Boughton, 1999; Sharifian, Rochecouste, Malcolm, Konigsberg, & Collard, 2004; Beresford, Partington & Gower, 2012, McCarthy & Amagula 2015). Through my work I have come to know Australian Indigenous epistemologies as complex as well as accomplished. Yet the contemporary mode of teaching Indigenous learners continues to assimilate emic knowledge into a curriculum constructed predominately on non-Indigenous ideologies. Referring to mainstream education, Nakata (2002) states the '... very meritocratic nature of the system and the very knowledge it imparts is seen to undermine cultural forms and ways and is sometimes deemed irrelevant' (2002, 285). Referring to this intersection of Western and Indigenous domains as the 'Cultural interface', he asserts that it is not a case of opposing or replacing one for the other: 'It is about maintaining the continuity of one when having to harness another and working the interaction in ways that serve Indigenous interests, in ways that can uphold instinctiveness and special status of First Peoples' (2002, 286).

### Despair voiced around the campfire

As a teacher—and a learner—for more than 30 years, I have worked with the Warnumamalya and Yolngu peoples across Arnhem Land in the Northern Territory and the Nyungar and Wongi peoples of Western Australia. I have stood at that cultural interface with one foot in each camp, uncomfortably aware of the dissonance that existed between the two cultures. By living my days at school with the kids and then sitting around the fire yarning at night with the adults, the relational connections have grown deep and rich. I listened to the adults' stories of aspiration and hopefulness, but more often told through burdened words of apprehension for their children's futures.

The strong message that I heard as I listened to the community's concerns was that the mainstream ways of Indigenous schooling prejudiced ways of knowing, unfairly eroding their cultural uniqueness by undermining their language and hence their identity. I observed how many students disengaged, and their compulsory education ended at 14 or 15 years of age. Students were leaving school with underdeveloped Literacy, Numeracy and life skills, greatly limiting their options for the world of work or participating as a valuable member within their own community. I witnessed young people reject what school offered, and how their systemic truancy inevitably '... leads into boredom, despair, substance abuse and criminal activity. The retention of Aboriginal students at this stage in their education seems one of the milestones in breaking the cycle of disadvantage' (Steering Committee for the Review of Government Service Provision, 2005, p. 7). All research points to one finding: retention of students at this stage of their education is critical in breaking the chain of a future life of deprivation, incarceration, domestic violence and suicide. I have witnessed this cycle of hopelessness and it is a reprehensible travesty, akin to enmity.

### Beacons of hope

I can also say schools were not always places where students encountered irrelevance or disengagement. I have worked in schools that were the heartbeat of the community. They were the one place everyone wanted to be part of, involved in. Adults were keen to work in the literacy centre, the canteen, on the sports programs, or as liaison officers. Schools staffed with qualified local Indigenous teachers worked side by side non-Indigenous teachers, who lived in the communities they taught in, sharing teaching and sharing language. Students with hair still wet from the shower and the soft scent of campfire smoke would arrive just after I opened the doors at seven am, keen to start the day. Once the daytime classes were finished the afternoon and night classes would commence. Working with community and school leadership, with Indigenous

teachers in team-teaching partnerships, we were able to construct all-embracing emergent curricula that evolved over the time and actually interested and engaged learners. We knew this because of the way the students owned the burgeoning curriculum frameworks and how they propelled it by their contagious vigour by seldom missing a day of school. Living and learning were interchangeable terms, equally proper in outside spaces, in the jungle, on the sea, near the ground. These environments which are 'considered the third educator' (Gandini, 2012, p. 339) were valued places that created appropriate heuristic engagement. In true Indigenous teaching and learning ways, nature was nurtured.

### Building on the positives

Frustrated that these positive remote community school experiences were not replicated on a national scale I wanted to investigate what needed to transpire for an urban school to become a site for both ways learning that was built on a parity of esteem for both Indigenous and non-Indigenous ways of knowing. It was serendipitous that I happened upon a metropolitan Aboriginal College, where not long before another opportune meeting had taken place between the school and an elite level basketballer, now retired and aspiring to give back.

When I first arrived at the College I met with staff members and asked them about the students' general attitude and attendance at school. One spoke about the urgency for meshing the students' world with the world of the teachers, 'we are still very disconnected from these kids worlds, their whole world view, everything they bring with them is very, very different to what we think'. Another talked about the frustration she and many other teachers experienced from spending hours setting up activities only to have a quarter of the students never arrive. She talked about the repercussion of absenteeism in terms of diminishing the amount of time the teachers had with the students to get them through the program. Another spoke of the secondary timetable how it was constructed within a rigid, unerring time configuration.

*We don't question it and that's what I think we have to encourage teachers to do, to go 'Well hang on a minute; we have to remember why we put it in place, why the grid is structured like it is. Does it have to be?' We can change anything; it's just a matter of thinking about it more creatively. The students need a structure, shaped by the influences of their home life, by the beliefs and values they bring with them to school and ways of learning that are more in keeping with how they live. I don't think we have to invent anything new to get it right.*

These teachers went on to speak about how they recognised the unique 'organic-ness' and specialness of the Indigenous student population. They talked of how the bureaucratic schooling structure and administration of practices and procedures seemed to sit like oil on top

of the fluidity of indigeneity, 'interminably separate'. It seemed the longer teachers had worked at the College and built relationships with the students, the more they felt it was incumbent upon them to seek more appropriate ways of engagement.

### The Yorgas Program

One way the teachers suggested for reforming the pedagogy was by valuing and endorsing a fledgling young women's program and fully integrating it into the wider school program. This recently launched program known then as the Girls' Basketball Academy was established under the leadership of the ex-Australian Olympic basketball player. The pilot program was given a finite life and had the support of one full time Aboriginal Student Liaison Officer.

In its infancy the Basketball Academy was about setting up a healthy and positive environment, where the girls could come to school and play basketball on the proviso that they attended at least 80 per cent of their classes. The objective was to use their love of basketball in an attempt to improve attendance, based on the premise that regular daily attendance could lead to a measurable improvement of academic achievement and retention in the classroom. The program became known as The Yorgas program. 'Yorgas', which is the Noongar word for 'women', also stood for Young, Outspoken, Responsible, Girls at School. This was seen as appropriate since the College was situated on Noongar country and it was important to acknowledge the traditional owners and Indigenous women.



While all members of staff were involved in the academic development of the Yorgas Program, the role of the Program Manager was to ensure the inclusion of Indigenous Knowledge systems:

*This is an Indigenous school and certainly we have Indigenous ways of doing things and cultural beliefs that we have to do. We will be looking at the curriculum, looking at styles of teaching. Maybe making the classes longer, I look at the structure here and I can see an hour is not enough. Mathematics for instance could be run from nine o'clock through till noon so that the kids really get it. Whereas if a task is given a considerable amount of time, other than an hour, where three periods becomes one, there is a chance for lots of wonderful learning in lots of different ways, you could really get the knowledge across to students.*

### A set of academy outcomes were established including opportunities to:

1. Enhance greater engagement of Indigenous young female students in education and sporting programs.
2. Increase retention rates for female Indigenous students in Years 10, 11 and 12.
3. Raise the Indigenous school leaving age.
4. Gain employment and work experience for the cohort.
5. Enhance achievement of high school graduation and employment.
6. Improve education outcomes for Indigenous female students.
7. Improve attendance for the cohort.
8. Increase enrolment of the cohort in education.

Key learning outcomes were identified that met the objective requirements of the associated sectors including the Curriculum Council of Western Australia, the Catholic Education Office, Swan Technical and Further Education and the Girls' Academy. The spirit of designing learning was to venerate Indigenous

epistemologies in a timeframe that harmonised with the daily and seasonal lives of the young women.

As a result of a successful Sporting Chance Grant the program's life was secured. The expansion added newly appointed staff and resources and also led to increased experiential opportunities for the girls including interstate and international expeditions. The girls had to devise travel routes, consult airline companies, apply for passports, fundraise and reconcile finances, write letters to attract sponsorship, research cultural and linguistic differences of the places they were travelling to, conduct meetings, keep accurate and detailed meeting minutes, negotiate and compromise certain attitudes and behaviours in an effort to achieve group harmony with their fellow students. They attended grooming and deportment classes, practised public speaking, learnt table etiquette and social interaction procedures. They designed and developed a variety of promotional material for the expedition increasing their multimodal multiliteracies skills. As the girls' profile expanded and the program became better known so too did their access to networks such as service clubs and professional organisations to supplement and achieve their learning outcomes in a variety of settings both on and off campus.

The students were also supported in other areas. A breakfast program was established to ensure the girls received a nutritious diet to sustain them through their physical activities and a safe, comfortable space that was more like a home than a classroom. There was a distinct pride amongst the girls of belonging to something quite extraordinary.

As a consequence of the Yorgas Program there were observable improvements in the young women's behaviour leading to regular attendance, improved personal hygiene, greater commitment to study, self-regulation and willingness to defer risk-taking social behaviours resulting in a significantly larger number of Year 12 graduates completing their studies with the majority of students going on to traineeships, employment or further studies.

I trailed the girls for three years observing them develop into confident young women well equipped to face their uncertain futures. On the day before their graduation, I watched them rehearsing in their garb as I balanced on a ladder to hang stars from the hall ceiling, one for each young woman. They had been the reason for the success of the program just as they had motivated the younger girls coming up to consciously commit to staying on at school. From blackboards to blackboards the Yorgas had truly rebounded from the margins.

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# Homework in primary schools

SUSAN RICHARDSON & MIKE HORSLEY



Parents have come to expect that, the digital age withstanding; there will be a scrunched-up homework sheet or book lurking beneath the day-old sandwich hidden at the bottom of the primary schooler's bag. Homework, in some form or another, is set in every primary classroom and in every student's home. We know well the teacher

reminder that 'you can go out to play when your homework is done' and the parental inquiry 'have you finished your homework?' But homework is a tricky issue for all stakeholders in the current educational landscape. It is tricky partly because of the ways in which different stakeholders (educational authorities, educators, teachers, parents and

students) have varying expectations for, and attitudes towards homework. The expectations relate to what homework looks like, the intended purpose of homework, the artefacts used as part of homework and the roles of teachers and students in homework (Horsley & Walker 2013). And it seems that homework does not live up to these expectations. ►





▶ Horsley and Walker (2013) identify that while homework has been controversial at different times in the past, and still is now, it is difficult to assess what proportion of educators, parents and students are opposed to homework and what proportion are supportive of it. There are parents, as well as teachers, who believe that the links between home and school that are generated through homework assist students through enhanced student learning and achievement. Some parents identify that school homework policies and classroom homework tasks are key accountability criteria by which the quality of the teacher and the school might be measured and compared. However, given current social trends, time pressures and the difficulty in supporting students with homework tasks, teachers and parents have also come to see homework as intrusive and out of tune with modern schooling and contemporary home-life.

The Victorian Government Inquiry into Homework (2014) determined that the lack of consensus around homework is exacerbated by the limited and often contradictory data on which to base homework policies and subsequent teacher homework practice. In Australian States and Territories, the responsibility for developing homework policies has been passed down by government bodies through policy guidelines to schools themselves, and of course onto classroom teachers. Expectations for, and beliefs about homework, are often shaped by the 'experiences of homework' and 'experiences of schooling' that one has encountered, rather than by research-based evidence. As one classroom teacher described: 'I think that homework is pretty important, but I am not sure why I think that. Maybe it's because I did my homework at school'.

The majority of homework research to date has focussed on the relationship between the time spent on homework and whether this time spent improves teaching and learning outcomes. This research has shown that homework in the primary schooling sector has negligible benefit for student learning (Hattie 2009). Another significant component of homework research has been the examination of the practices

parents might use to promote student learning from homework. The findings of this research showed that less parental teacher and parent control and more student autonomy and choice in homework tasks lead to greater gains in learning from homework. Another major area of homework research has been to show that homework tasks that promote student self-direction and self-managed learning can actually assist student learning.

Complicating homework as a tricky issue is the general lack of research into teacher homework practices. There is limited research as to what actually happens in the classroom with respect to the practical aspects of homework such as sourcing, setting of, scaffolding for, teaching into the content of, monitoring of and management of homework tasks and activities. Have a look at that scrunched-up homework sheet at the bottom of the school bag and compare it with the homework task set by a different teacher in the same year level at the same school. It is clear that there are inconsistent classroom-based approaches to homework despite there being government and school-based homework policies informing homework practices.

It is only recently that the practical aspects of homework, focussing on teacher homework practices, have been examined in a study that collected data about teacher homework practice from teachers themselves and from their classrooms. As part of the process of researching teachers' practices interviews were conducted with practitioners from a range of school year levels and schools that served a variety of demographics. Researchers asked teacher participants about homework and about the specifics of their individual homework practices. Teachers talked about four key threads of practice:

- the purpose of homework
- the types of homework used in their classrooms
- student learning through homework
- teacher planning for homework. ▶

Following the interviews the classroom homework practices of individual teachers were recorded daily for one week using iPads. The teachers were asked to describe the practices they were using and to explain why those practices in particular were being used as they watched the recordings.

The research was the first time that the complexities of the actual homework practices used by primary classroom teachers have been investigated in this way. The findings confirm that homework will remain a tricky educational issue because, put simply, homework is an individualised, idiosyncratic matter for primary classroom teachers. The reality of homework is that it is classroom teachers who individually interpret homework policy mandates and implement them through the use of varied and different homework practices. Teacher responses to the demands of homework are as varied as the teachers

themselves. Primary classroom teachers set homework in different ways, using a range of different practices with limited consistency across the same grades within a particular school, and with limited consistency across similar year levels from different schools. As one teacher in the study said: 'Teachers do what they want for homework, what they think should be done for homework'.

Another teacher, in a different school said: '...whilst there is a school policy in place here, it is not enforced, so there are a variety of homework practices across the school'.

How then can stakeholder expectations for homework be met in consistent ways?

There is no curriculum as such for homework; no accountability for the ways in which homework is embedded into classroom content. The responsibility for rigorous, purposeful homework rests with the individual classroom teacher. The

research findings suggest that the nature of the homework tasks set, and the ways in which the homework is managed, are directly related to the teacher's personal and professional views about the purpose of homework, the extent of the influence of the parent group and teacher compliance for policy. Consequently, this raises questions about the effectiveness of homework and the teacher homework practices used in primary classrooms.

One positive finding was that the ways in which teachers talk about their specific homework tasks is represented through actual teacher-in-action practices. What teachers say about homework is actualised through their practices. Teachers commented frequently throughout the research that this was first time that at a school level, teachers had come together to talk about homework, to talk about the actual homework practices used. Homework it seems is not a topic for professional discussion and it is



certainly not discussed by classroom teachers in the same way as curriculum issues. This is an interesting finding given the demonstrated willingness on the part of teacher participants to talk freely and honestly about homework in their classrooms. It is also interesting given the fact that a frequently identified purpose of homework is to consolidate and review specific curriculum content. One might expect that homework and curriculum go hand in hand. Perhaps homework is a tricky issue because teachers themselves are finding their way through the homework maze. Without formalised, research-based instruction about homework pedagogy at pre-service level, classroom teachers must wonder about the ways in which they are to come to 'know homework'.

What does all of this mean for stakeholders engaged in the homework space? What is the way forward for the tricky issue of homework and stakeholder expectation?



For governments, a review of homework policy mandates is required. For example, homework policy in Queensland State Schools in 2016 is informed by a 2006 homework policy, *Homework in State Schools* (Department of Education and Training, Queensland). The expectations for, and of homework, need to be reflected more accurately within contemporary policy guidelines.

Some schools have initiated preliminary conversations about homework; some schools are rethinking homework completely. Others are beginning to interpret homework policies in ways that articulate homework practices that make homework less tricky, less complex but more purposeful.

For parents, the way forward is to develop a new dialogue with schools to find out what type of homework is being set, why it is being set and how the homework task can help their children to learn. In addition parents need to know what role that they can, and should, play in the homework space. This will require new conversations amongst parents, teachers and students.

Another way forward is to give more time for teachers to consider the complex layers of homework, to prompt questions such as initially: 'why am I setting homework for my students?' and 'what is the purpose of this homework?' Once past the point of compliance, teachers might then be able to consider questions that relate to: 'why is this important?' and 'what is the best way to do homework?' Teachers might consider questions that relate to the sorts of homework practices that can be helpful to and purposeful for, student learning with respect to the direct links to classroom content and for the development of self-regulatory learning skills. This might mean a review of homework and homework tasks through professional development opportunities for classroom teachers.

This in turn could be the catalyst for action-research projects which position classroom teachers at the heart of the research in an effort to examine their own practices and to make those practices visible. Teachers need to engage in conversations with other teachers and with school administrators about

homework; collaboration and sharing might empower teachers to purposeful change.

One teacher participant in the current research project noted: 'Homework is a tradition and it seems that we are scared to move away from that tradition'.

Stakeholders unite. Fish out that homework sheet from the bottom of the school bag and use it as the basis for the conversations that might challenge past practices. It is time to rethink this tricky issue and to reshape homework policy and primary classroom teacher homework practices in ways that maximise children's learning.

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# Reimagining Resistance

DONNA EVANS, MACE



Historically, the preferred way of dealing with resistant behaviours has been not to deal with them unless absolutely necessary, and usually only when aspects of the school's vision and mission are actively eroded. It might be thought that resistance, or behaviours that prevent contributive and positive engagement, are a first course of action by frustrated and disenchanted teachers. Paradoxically, these feelings are more often evident as a consequence of considerable and intensive professional engagement rather than a refusal to do so. Resistance is more likely felt by teachers who believe they are already undertaking meaningful and appropriate professional practice and are confident about their capacity to manage the multitude of tasks associated with their job. Resistance examined through this lens tests the prevailing view and encourages the acknowledgement of a counter-narrative around managing

change. The challenge for school leaders, tasked with implementing change whilst maintaining stability, is to acknowledge resistant voices and accept that diverse opinions contribute, rather than detract, from the broader discourses around school improvement. Creating or fabricating reasons to encourage reluctant teachers to come on board by using 'big sticks' such as EB arrangements or legislative imperatives, is neither best practice nor sustainable. Yet, achieving this outcome without igniting professional disharmony has always been problematic.

## Why are some teachers resistant to change?

Resistance has been widely researched in relation to teachers' responses to change (Edwards, 2000; Crump, 2005; Fink & Stoll, 2005; Ozga, 2000; Vidovich, 2002; Wallace & Flett, 2005).

It can emerge as teachers perceive an incompatibility between the reform and the organisation's structure (Huberman & Miles, 1984; Lipson, 1981), or because the policy does not take into account their professional perspectives (Butt, 1982). Some teachers assume that the reform will intensify their work and increase the pressure on their time (Hall, 1991), in an already time poor environment. Similarly, when teachers believe that the proposed reform is of little use based on their previous reform experiences (Bandura, 1997; Levine, 1980; Rogers, 1983), they are resistant to new policy initiatives. More experienced teachers develop a 'pedagogical repertoire' over time and can be reticent to incorporate the new pedagogical routines which accompany curriculum reform (Edwards, 2000; Eisner, 2005). Increased stress and teacher burnout are consequences as teachers' personal interests, commitment and resources are not aligned with, or

pull against, key aspects of their social, economic and working environments (De Nobile, McCormick & Hoekman, 2013; McCormick & Barnett, 2011; Nias, 2003; Sass, Seal and Martin, 2011; Woods, 1999). Or perhaps they suffer from, what Farber (1991) describes as, a growing sense of inconsequentiality, undermining their sense of professionalism (Sikes, 1990).

### Engaging with resistance: What is reform efficacy?

In researching a group of teachers, as they responded to and implemented phase one of the Australian Curriculum, I observed them applying to it, almost subconsciously, a set of 'criteria' to determine its efficacy, which enabled them to establish, at least initially, their response to it. *Reform efficacy*, then, is a term intended to encapsulate the processes and procedures teachers undertake to locate themselves within the context of new reforms and enables them to establish their agency in it as its practitioners. As a consequence of adopting this approach, a range of teachers' responses to reform is possible, of which, resistance is just one.

The process of assessing a reform's efficacy begins with teachers examining the new policy looking for alignment between it and their current practice. They are particularly observant of any aspects of the reform that share similar qualities with previous reforms they felt were successful. Linking their past successes, with the requirements of the current reform, builds teachers' confidence and sense of professional capacity. Lack of alignment creates stress and anxiety and they look to school leaders to address such situations. This is the first process of reform efficacy undertaken by teachers. When faced with changes, School leaders can establish a change narrative that addresses what might appear to be unresolvable absences or omissions before resistance and negativity dominate. Central to developing a workable narrative from the perspectives of teachers is the school leaders' knowledge and understanding of them as education professionals,

the nuanced site-specific cultural and operational practices, and the broader educational landscape.

Secondly, teachers look to their work environment to observe the broader level of engagement undertaken by significant 'others'. Whilst the importance of the roles of the principal and the school's leadership team in leading change, by establishing and embedding the overall change narrative cannot be underplayed, it is the middle managers at the school, (the heads of departments and subject and curriculum coordinators), who teachers direct their attention to as implementation timelines shorten. It is the middle managers with whom teachers often have the closest leadership relationship. Recent research shows (Browning, 2013; Evans, 2016; Fink, 2013; Tschannen-Moran, 2014; and, Tschannen-Moran & Gareis, 2015) that professional trust is key in enabling teachers to undertake professional risks in relation to their practice. This is particularly important as the heads of department and coordinators, tasked with operationalising policy by taking it from text to practice, usually draw on established 'banks' of professional trust in order to effect change. Their language choices and policy mediation and negotiation practices, (undertaken acknowledging site-specific contexts) strongly influences teachers' responses to the reform and can effectively challenge negative and entrenched resistance.

The final 'criteria' applied by teachers to change is evaluating its sustainability. Too often comes the cry 'we've done this before!' A major reason for the despair behind such comments is the firework factor associated with previous reform—launched with explosive fanfare only to fizzle out! Teachers have high expectations of policy developers and know what good policy design looks like. They also know that poor policy cannot be saved by excellent practice. The extent to which teachers observe a commitment of time, funds and personnel attached to each of these factors strongly influences their responses to it. Therefore, they look to the depth and breadth of the reform

to gauge its sustainability considering: the level of funding (both short and long term); the adequacy of reform implementation timelines; evidence of explicit evaluation procedures and success indicators; the cultural and political context from which the reform has emerged; the scope of the reform; and, the extent of structural, leadership and management changes required to effectively implement the reform, including the provision for professional learning. The outcome of this examination, combined with perceptions of their professional capacities to undertake the reform requirements, strongly influences their responses to it.

Reimagining resistance accepts that there is often a professional legitimacy around teachers' resistance to change since this can be their response to poor policy or poor practice, or both. Shifting, or at the very least, redirecting, entrenched beliefs is not an easy task in any circumstance. Yet, schools where leaders attend to the three elements of *reform efficacy*, benchmarks teachers use to inform their responses to change, benefit in two ways. Firstly, in demonstrating a want to engage with diversity and where feelings of inclusivity are promoted building more robust and professionally engaging communities. And secondly, using this alternative lens, to view resistance, school leaders and middle managers are able to establish and embed new cultural practices and rituals around managing change, seemingly a constant in today's education sector. Whilst the relatively simplistic process outlined here is much more complex in practice, ignoring or failing to engage with resistance is, significantly, much more problematic.

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## *Ungifted: Intelligence Redefined* by Scott Barry Kaufman

Book review by Catherine Scott, MACE

My grandmother was born in the 19<sup>th</sup> century. She was blessed with 27 grandchildren and I was in the middle of this impressive pack of cousins. There was never any sense that my grandmother had a favourite or that we were ranked in any way. No human characteristic was more valued than any other and we certainly were never made to feel that we were being judged as worthy or worthless on the basis of our various attributes.

Nanna's lack of interest in ranking us, including by 'IQ', stood out so much for me because it was in contrast to my school teacher father's deep concern over the intellectual capacity of his children. My mother once remarked, tongue in cheek, that my father was anxious that each of his children in turn might be 'developmentally delayed'. I grew up in no doubt that the worse thing in the world to be was 'stupid' and I lived in dread that I would somehow manifest or acquire stupidity.

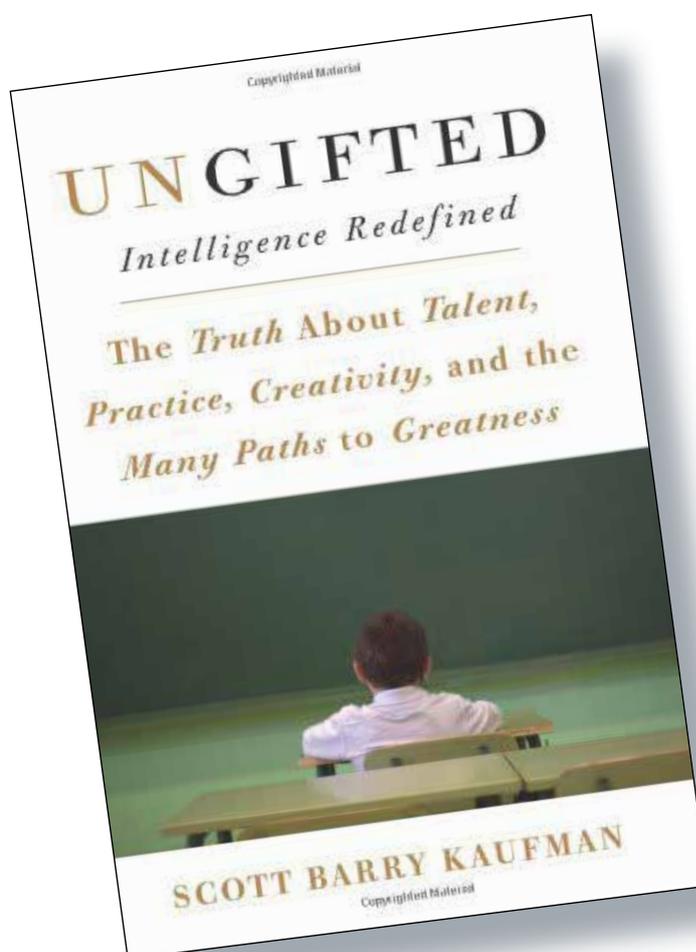
Like Scott Barry Kaufman, author of *Ungifted: Intelligence Redefined* I was a victim of the mania over intelligence and its measurement that followed the invention, by Binet and Simon, of the first intelligence test. Kaufman, however, was not terrified of somehow losing his wits; he had been declared 'special' as a young child. At the start of each of the chapters of his splendid book he gives the next instalment of the story of how he overcame the pejorative label slapped on

him as a small child to win a PhD in psychology from Yale and become a successful author and academic.

The responses of those who I have told about the book and its author are instructive. When I said I was reading a book on intelligence written by a person who had been identified as a child as having special needs the responses could be summed up as 'Aw, that's cute', as if the author was academia's version of Forrest Gump. Instead, Kaufman's

extraordinary story is the proof of his thesis that intelligence is much more than what is measured by IQ tests.

'Well, thank you, Captain Obvious' I hear you say but here is a good deal more to the book than can be summed up in those few words. Kaufman traces the history of theories about intelligence and how to measure it and the debates about its nature. He also provides an exhaustive and very useful summary and discussion of the research into the



structure of intelligence and creativity, their neurological underpinnings and the environmental features and personal characteristics that allow people to turn intellectual tendencies into real world achievements.

That better predictors of lifetime achievement are personal qualities such as grit, persistence, passion, diligence and a 'hungry mind' directly contradicting the widely held and enthusiastically promoted idea that intelligence is fixed and all a matter of genes. This belief enables those 'blessed' by their genotype to enjoy their own superiority and the others, the poor and incorrectly pigmented, to be held as deserving all they get—or more correctly don't get, on the grounds of their innate inferiority.

Carol Dweck and her colleagues have proved beyond doubt that our culture's infatuation with the belief that ability is inborn, fixed and resistant to improvement does immense harm, not only to those like Kaufman who are labelled 'ungifted' but also those, like me, who found themselves frozen in their tracks by the judgement that they are 'gifted'. Society, channelled by my father, made it plain that only the smart ones mattered and the threat was always that the initial judgement as 'brainy' might turn out to be an error. From the lofty heights there was nowhere to go but down, in other words. As a child and young person I was the classic example of Dweck's 'fixed' mindset; Kaufman was the incarnation of the 'growth' mindset.

Kaufman marshals the evidence that supports the contention that human intelligence is a multifaceted and varied collection of skills, traits, tendencies and attributes, all of which can contribute to 'greatness' if cultivated and strengthened by deliberate practice and the cultivation of effective strategies. His book is a welcome resource for educators with a strong interest in the area of human cognitive abilities. It is a gold mine of research and theory and will be of considerable value in the courses I teach to pre-service and practising teachers. Teachers' beliefs, as demonstrated by my father's attitudes, matter immensely, as it is teachers who send messages to students every day about their ability and whether it can be grown.

A version of this review was previously published in *PsycCritiques*.



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