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TEACHJOURNAL
OF CHRISTIAN EDUCATION

CAFFEINE IN SCHOOLS
behaviour and performance

CHARACTER OH! CHARACTER
where art thou?

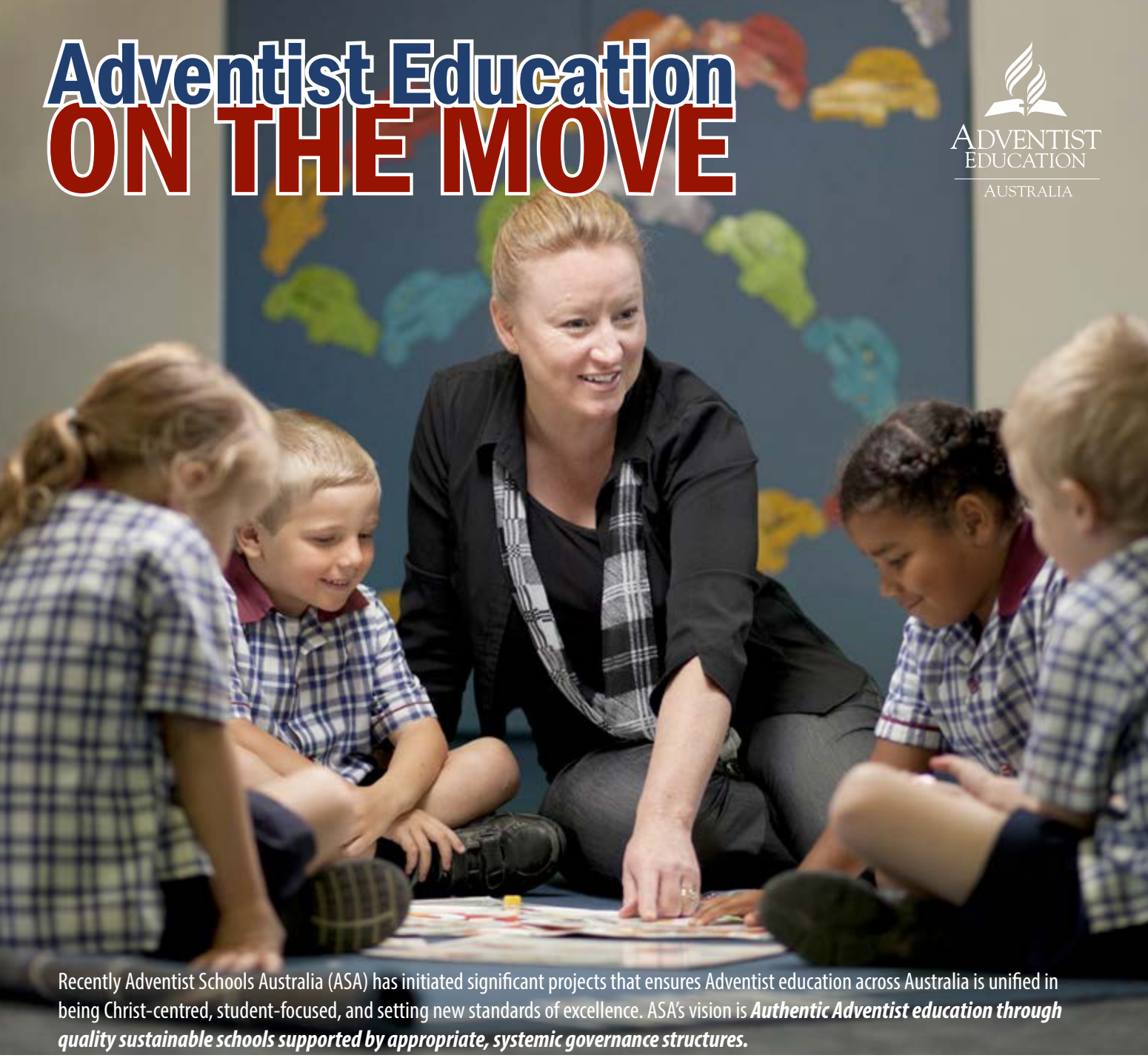
MAKING JESUS REAL
personally effective

THE STEM REVOLUTION
fad, fantasy or fantastic

Ministry Of Teaching

Adventist Education ON THE MOVE

ADVENTIST EDUCATION AUSTRALIA



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The Avondale Schools - Toronto Campus News crew including teacher Mrs Andrea Thomson, with (left to right) Jessica Pearce, Caitlyn Menzies, Tamara Short, Riley Thomson, Nicholas Holt, Kanayah Saifaleupolu

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Ministry Of Teaching

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Ministry Of Teaching

Caption: Hills Adventist College Principal, Ralph Luchow, with students Daniel Stojanovic and Charlize Bellido (front row); and Xanthe Craig, Danielle Manthey and Roman Mogoko (back row). Photography: Heath Bennett.

EDITORIAL

Graeme Perry

Pasi Sahlberg (cited in Munro, 2016) predicts a big tobacco or sugar-style marketing war over whether more technology in the classroom is beneficial or harmful to children. Linking screen technology to the progressive decline in the Programme for International Student Assessment (PISA) scores of Australian 15-year-olds, as compared to other countries in the OECD, the Finnish educational consultant foresees an argument that reacts to shared perceptions of a decline in educational effectiveness across all western countries.

Sahlberg claims support from Harvard associated research in Alberta (McRae, 2016, paras. 6-10), with teacher responses asserting computers, phones and other devices were helping students research their own questions (76%) and educators communicate better with parents (79%). However, 56% of Alberta teachers said more students are telling them they've been bullied or harassed online, 67% said technology is a growing distraction in class for students, more than 50% of teachers feel distracted, too. As well 76% say children are having more difficulty focusing in school and 66% observe more kids are coming to school sleepy. Most teachers also said they've seen a dramatic change in emotional, social, behavioural and cognitive challenges in students during the last three to five years (McRae, 2016, para.8).

Researchers hope this and future extended studies will provide evidence to help schools, parents, health-care workers and other stakeholders make good decisions about how technology should or shouldn't be used at home, but also in schools. A useful media planning tool for families (AAP, n.d.), is a potential resource for assisting school/parent interaction about 'tired' or distracted students.

Kilgour, Fitzsimmons, Baywood and Merriman, in this TEACH issue, unpackage the context and impact of the 'STEM revolution' on two schools. Ambivalence, confusion and enthusiastic adoption are noted as staff responses. Thompson models the application of a transformative whole of school use of 21st century technology in producing Toronto Campus News (TCN).

MacRae (2016) further noted "increased: anxiety disorders (85%), Attention Deficit Disorder and Attention Deficit Hyperactive Disorder (75%), and mood disorders such as depression (73%)" (paras.9-10).

Reacting to potential challenges for Australian student wellbeing, Brown proactively proposes "cultural architects" within a school response—the Invictus Wellbeing Program— to assure student 'flourishing'. Fyson challenges indulgent western individualism and self-sufficiency by asserting important character development through a service orientation.

While Pasi Sahlberg (cited in Munro, 2016) debunked suggestions that Finland had 'the answer' to effective education, he affirmed right approaches as: "its child-focused approach, with an emphasis on play, a later school starting age (7), and letting each child develop at their own pace" (para. 13).

Current issue authors advocating child-focused approaches include: Lewis in "coaching learning" through goal setting, Sutton and Shields supporting dyslexia by empathetic strategies, Efstratiou and Cruz using child friendly posters to ensure understanding of whole school culture change; while play as learning in pre-school is part of Oliva's reflection on pre-schools.

Own pace development is the intended reaction to knowing the impact of caffeine on school performance (Beamish et al.) and integral to Making Jesus Real for students—Ogle's advocated passion for you and me to adopt,

Errata:
The editor apologises for the misspelling of Delvin's surname as an author of 'making thinking visible' in the last issue. TEACH online includes the correction.

> *"67% said technology is a growing distraction in class for students, … 75% say children are having more difficulty focusing in school and 67% observe more kids are … sleepy."*

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[Photography: Nikolai Agafonov]

The Invictus wellbeing program: Cultural architecture and human flourishing

Joshua Brown
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Key words: wellbeing, cultural architecture, human flourishing, resilience

Introduction

The Invictus Wellbeing Program (IWP) is a mental fitness and resiliency course that uses Dr Martin Seligman's PERMA model to help achieve the wellbeing mandate set out in the 2008 Melbourne Declaration. This landmark document requires all Australian schools to foster the "social, emotional, moral, spiritual and aesthetic development and wellbeing of young Australians" (Barr, et al., 2008, p. 4). Schools can easily rely on the hidden curriculum or an assortment of miscellaneous approaches to take care of the "socialisation process" (Kentli, 2009, p. 83) without having a targeted approach with which to achieve the directive set out in the Melbourne Declaration. Through the implementation of Invictus, school leaders are able to tangibly demonstrate both their awareness of and engagement with the wellbeing responsibilities implicit within a school community.

> *"2008 Melbourne Declaration … requires all … schools to foster the 'social, emotional, moral, spiritual and aesthetic development and wellbeing of young Australians'"*

Formation and structure

The Invictus Wellbeing Program was first implemented at Macquarie College in Newcastle, NSW in 2014. It is currently being run at St Philip's College Cessnock, Charlton Christian School and Macquarie College. Invictus is a year long experience that engages students in a fourstage progression towards a Bronze, Silver or Gold Award. Participants take part in outdoor education, positive relationships, skill mastery and community service within the framework of four key elements. During each school year Invictus Coordinators function as "cultural architects" (Logan, et al., 2008) who seek to positively shape group dynamics within a cohort of students through the implementation of activities that put wellbeing theory into practice. The majority of learning and growth within the program takes place during the weekly Invictus meetings and term end memory events. It should be noted that the delivery of the Invictus Curriculum has been most effective when timetabled into the school program. The Invictus Wellbeing Program is currently supported by Lake Macquarie City Council and Deakin University Alumni Community.

Unpacking the elements

Each term students complete a new element of the Invictus Program which culminates in a key memory event that leads to "spiritual impact, genuine friendships and a sense of belonging" (French, 2005, p.30). These events are the focal point of each term and participation correlates to eligibility for an Invictus Award.

Journey

During the Journey Element students are introduced to Dr Martin Seligman's PERMA model of wellbeing and shown how the components can contribute to human flourishing. Participants are given an

Figure 1. Enjoying the boat journey

Invictus Journal that is used for activity completion and personal reflection. The use of a paper journal in conjunction with an outdoor camping trip is a conscious decision in light of Dr Mardie Townsend's research on tactile experiences and natural environments which "ameliorate stress and benefit humans" (Townsend & Weerasuriya, 2010, para.

2). Furthermore, the Journey Element gives young people the opportunity to experience the benefits of planning and preparation in order to manage change and enjoy growth. The Journey fosters selfreliance in a supportive context and allows participants to develop their personal decision making skills.

- Major Memory Event: A multiday journey in the outdoors.

Network

The Network Element uses Dr Shelly Gable's research regarding "active constructive responding" and "capitalisation" (Gable et al., 2004, p. 1) to enhance relationships. During the Network Element students are given specific skills for friendship building and community enhancement. Participants learn how to better identify and describe their emotions. Furthermore, Invictus Coordinators outline that it is 'OK' not to feel 100% happy all of the time in light of Dr Melissa Weinberg's discovery that "the setpoint for our happiness, according to the latest research, is about 80%." (Weinberg, 2015, para. 2). Much like homeostasis, the body regulates its mood based on efficiency and therefore it is not sustainable to feel euphoric all of the time. However, Weinberg notes that good mental health allows an individual to " recover their normal setpoint for mood" (Weinberg, 2015, para. 7). The Network Element also gives students the opportunity to enhance a specific relationship of their choice and practice learned optimism and gratitude.

- Major Memory Event: The revolving fire night

Figure 2. Building relationships about the fire

Master

Skill acquisition and "experiencing a sense of accomplishment" (Seligman, 2011 p. 237) both contribute to a person's sense of wellbeing and resilience. This element of the Invictus Wellbeing Program seeks to cultivate practical skills through the help of a qualified mentor. The transmission of knowledge from one generation to another is an enduring legacy of the human experience and Invictus participants are invited to take part in this teaching and learning cycle. During the Master Element participants are encouraged to cultivate individual talents and passions, therefore experiencing a sense of mastery and selfconfidence. Central to the Master Element is the New Economics Foundation's Five Ways to Wellbeing (New Economics Foundation, 2016) and the 10,000 hours of mastery principle (Ericsson, Krampe & Clemens 1993). In addition, students are made aware of Ungar's notion that increased skill mastery results in a heightened capacity to contribute to the broader community (Ungar, 2012).

- Major Memory Event: The mastery film festival

Figure 3. Sharing skills

Serve

The Serve Element is the final stage of the Invictus Wellbeing Program and provides a focal point for the cumulative momentum built throughout the year. Invictus participants are encouraged to understand that serving others lays the foundation for a vibrant and harmonious community (Thoits, 2001). Service deactivates selfcentered behavior (Rubinstein, 2007) and brings satisfaction to both the provider and the recipient. Students recognise that true service is an act of partnership and does not demean the beneficiary. Intentionally structuring the Invictus Program with service as the final element allows participants to practically apply their prior learned skills. By engaging in service participants gain an outward focused and holistic worldview that acknowledges how every act of service ushers in a better world. Participants are connected with local and global causes that they can partner with. At Macquarie College these causes have included Asian Aid's H.E.L.P program in Indonesia and RAW Impact Cambodia.

- Major Memory Event: Longtable lunch in which Year 9 welcome Year 8 into the IWP.

"engaging in service participants gain an outward focused and holistic worldview that acknowledges how every act of service ushers in a better world"

Figure 4. Hiking

Spiritual significance

Interestingly the 2008 Melbourne Declaration specifically requires all Australian schools to foster the spiritual wellbeing of students. Furthermore, The NSW Department of Education and Communities (2015) also requires that schools have a "comprehensive and integrated strategy [for] spiritual wellbeing" (p. 9). It should therefore be noted that authentic spiritual growth takes place in a safe environment where individuals feel comfortable to share their fears and doubts in order to progress towards a robust and personalised belief system. In a modern society of "materialism and individualism" (Eckerskley, 2006, p. 252), it is more important than ever that students are presented with a "holistic approach" (French, 2007) to spiritual growth that "involves them intricately interweaving domains of social, emotional, personal, physical, cognitive, linguistic, creative, aesthetic, moral and spiritual development" (French, 2007, p. 41). Invictus provides opportunities for these complex interactions to take place and therefore facilitates a multilayered approach to faith development that is experienced in the context of a safe ekklesia. Furthermore the etymology of 'Invictus' acknowledges the New Testament notion of being "more than conquerors" (Rom 8:37) in the face of hardship, reiterating the intentional design of the program and the strong Christian underpinning that supports wellbeing in general.

> *"authentic spiritual growth takes place in a safe environment where individuals feel comfortable to share their fears and doubts in order to progress towards a … personalised belief system"*

Figure 5. Interactive growing

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What I ‘C’ is a crucial tool in our schools

Marty Ogle
Tasmanian State Project Officer: Make Jesus Real (MJR), Tasmanian Education Office, Hobart, TAS

Key words: choices, critical thinking, reflection, religious education

Recently a colleague, Dr Drasco Dizdar stated that an authentic way of being **Christian** was to be a **critical thinker**, be **compassionate**, be **contemplative** and **celebrate**. A successful Christian teacher (and/or a Making Jesus Real (MJR) practioner) definitely needs to include these critical components in their kit bag to ensure that Jesus Christ’s message is discovered, contemplated and continually used to inspire positive actions.

Having worked for many years in primary education within government, independent and Catholic schools, I have come to the conclusion that the school communities that focus on Jesus’ teachings and/or focus on the positive values we need now in our lives, are the most successful. Yep, not necessarily those with the best NAPLAN scores!

> *An authentic way of being Christian was to be a critical thinker, be compass-ionate, be contem-plative and celebrate.*

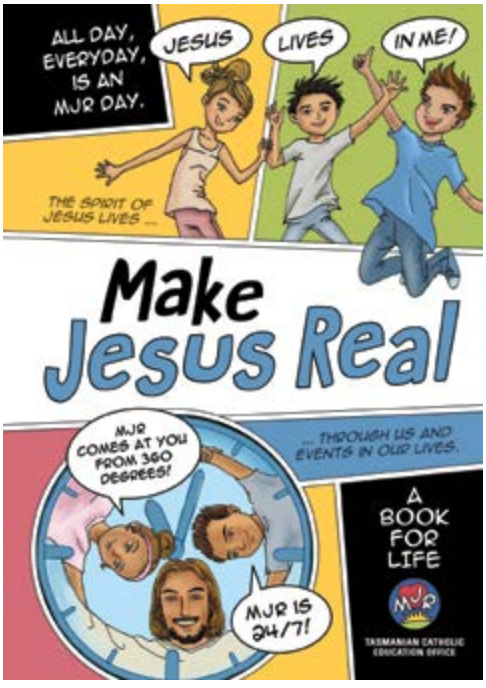

Figure 1. The MJR book resource

Make Jesus Real (MJR) is a values education resource written by Peter ‘Mitch’ Mitchell and published by Garratt Publishing. It is so much more than just 150 pages of excellent resources, it is ‘a way of life’ (nearly 6,000 booklets were sold in 2016!). ‘Mitch’ helps us to focus on ‘Jesus in the now’ and many pages help ignite conversations and dialogue that inquisitive young people are crying out for in this crazy, busy world.

Before we can *critically think*, we need to develop the *crucial* habit of *contemplation* and throughout the MJR book, and in MJR classes, students are taught to discover the power of reflection. This can be achieved by going to their ‘heart room’ at various times during the day or discovering the power of reflection after they have completed an activity. At the back of the book is a green tear-out sheet that states ‘Where was Jesus in my life today?’ A glow in the dark sticker is also available for this card and most students place this card on their bedside tables, so the last thing they see at the end of the day will be this reflective question.

Making good *choices* can be a bi-product of self-reflection and I often tell the positive story of a Grade3/4 student I taught who was extremely angry due to his parents splitting up. He was constantly in trouble, usually to do with anger management issues, and his mother was at school nearly every day. Eventually, after many meetings and some counselling sessions (including the Rainbows grief program), this student came to me and stated that “it is time I made better choices.” He consequently made such great choices that by Grade 6 his peers voted him School Captain and he showed amazing compassion by shaving his hair off in his final primary year to raise money for cancer research. Yes, this is evidence of ‘The Spirit of Jesus’ in action.

‘Mitch’ also very cleverly uses a large number of acronyms that ensure students and staff remember the crucial catch phrases that remind us of Jesus and his compassionate actions. For example, many schools across Australia have adopted the **WEST** acronym that stands for being **Welcoming**, **Encouraging**, able to say **Sorry** and

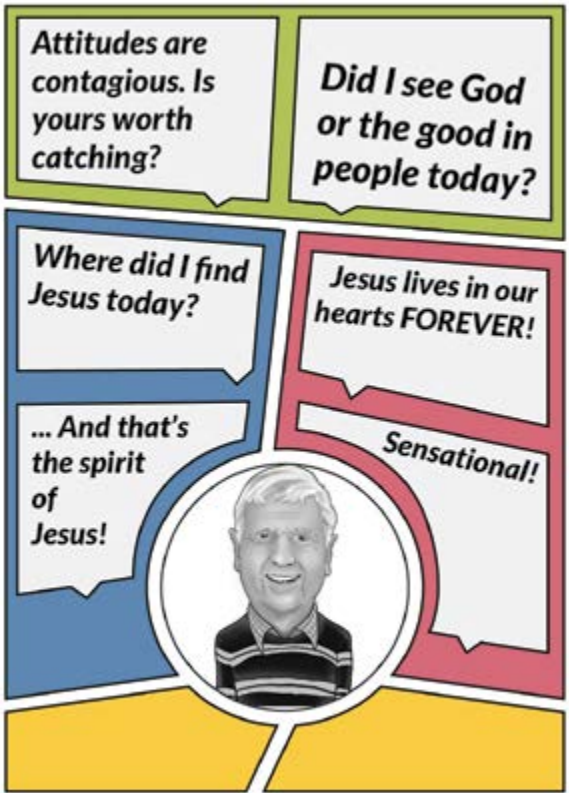

Figure 2. 'Mitch' (pictured) states a crucial component of MJR is to constantly remind the students and staff that they can see or create 'WGMs' - Walking God Moments. By constantly naming these special moments and highlighting them—our school has a special 'Dob in a Good Deed' Award—therefore everyone sees 'The Spirit of Jesus' (SOJ) at work.

Thank you. Plus it is important to remind those in our communities that attitudes are contagious, to look out for the goodness in others and to be a 'grinner and a winner not a moaner and a groaner'. The booklet also stresses that by forming positive habits of smiling, hi-fiving, thumbs up, winking and encouraging, students and staff can achieve amazing things for themselves and those around them?

So what are some of the effects an MJR approach can have on a person, a class, a school and/or a community? At the end of a recent two day, MJR Interstate conference, some participants stated:

- MJR is a deliberate way of being—actions, opening our hearts to Jesus.
- MJR—it's not just in school, taking it home to parents and the community is just as important.
- It allows kids to take Jesus and their faith into the playground and their lives.
- MJR is a perfect opportunity to be God's hands on earth.
- Faith is a really important part of catholic (all embracing) schools. MJR has opened my eyes to see it. It's very real and it's about living it yourselves.
- MJR allows us to infuse Religion and the faith message in all subject areas.
- There is a deep connection with Jesus that can be developed through MJR.
- We are not just the face of Jesus, we are the vessels for the Spirit of Jesus (SOJ) and we can show that in our everyday lives.
- Through MJR we can engage all children, regardless of their faith, with their spirituality.
- It is easy to see the spirit of Jesus in others but we need to encourage the children to see the spirit of Jesus in ourselves as well.

Yes very powerful and deeply meaningful statements! So why are the 'MJRers' and their messages gathering momentum throughout Australia? Simple—its because the students, staff and parents relate to the MJR core themes in their everyday lives. A group of teachers and students gathered in 2015 to review the booklet and they identified the following core themes of Making Jesus Real:

- Identifying the Spirit of Jesus and positive attitudes—God's Holy Spirit is expressed in Jesus, in our spirit, in class spirit, in school spirit—so lunch and recess can be crucial times to identify and highlight SOJ moments.
- MJR highlights attitudes similar to The Beatitudes (Mt 5:1-12) e.g. be humble, be a peacemaker, be just
- WEST behaviours linked to Sacraments: Welcome (Baptism), Encourage (Confirmation), Sorry (Reconciliation) Thanks (Eucharist).
- Greet, Treat, Speak—GTS message in love, the Commandments, even at the Last Supper
- Givers and Takers, Moaners and Groaners - (sometimes we need a wake up call).
- God Moments—e.g. prayer and the wonder of creation.
- MJR is 24/7 and a 360 degrees viewing (coming from all angles).
- Close connection to the Pope's teachings.
- Reflection, prayer and self evaluation—e. g. attitudes, choices,

Also this meeting reiterated the need try to teach like Jesus did—for example he used parables and sometimes *challenging* stories from daily lives. Many MJR teachers use stories, images and whatever is near and current, including Internet and YouTube,

> *"Through MJR we can engage all children, regardless of their faith, with their spirituality."*

to emphasise a point. A perfect example of this is the "Catching Kayla" YouTube that clearly teaches about not giving up (NGU) and don't take for granted (DTFG). Other inspirational people that the students relate to are Nick Vujicic and (https://www.facebook.com/NickVujicic/) and Turia Pitt (http://turiapitt.com). Teachers also strive to catch the God moments in the classroom, in the playground and outside our school communities often by noting or exclaiming "there's the Spirit of Jesus" (SOJ). At St. Brigid's Catholic School at New Norfolk, Tasmania they have a 'Dob in a Good Deed' award based on identifying the 'SOJ' moments in their community. Some examples may be as simple as informing a teacher about a special moment in the school ground, but there have been many touching moments from outside our school, in the community. A person, not connected to our school helped a student who was being hassled by another person. He stepped in and solved a potentially awkward situation so he was sent a 'Dob in a Good Deed' award, and he was stoked!

Many other schools in Australia have found ways to positively present the MJR message. St Andrew's Primary Catholic School in N.S.W. has extended the WEST message to WESTIE which stands for Welcoming, Encouraging, able to say Sorry and Thank You plus being Interested and Enthusiastic. In 2016 St Andrew's created a school theme of 'See the Extraordinary' in ourselves, others, and in the environment around us. This theme was designed and created in *collaboration* with the students, staff and community, and is steeped in MJR philosophy—that Jesus was (is) extraordinary.

> *"It is amazing to hear how many past students still have their MJR book and/or the 'Where was Jesus in my life today?' green card, who revisit their journaling"*

So in summary

What is MJR? It is a school-based values education project, a philosophy for a whole school, instilling a positive culture based on the Gospel values. Rather than just being a Grade 5/6 teaching focus, it is fast becoming a strategy for the whole school. Peter Mitchell, in 2017, will have another resource for Grade 3 or 4 students called 'The Spirit of Jesus'. These are a number of simple lessons trying to *connect* the students to Jesus and His beautiful stories and actions. The Kinder—Grade 2 teachers in Tasmania, are also developing resources called 'My Friend Jesus'.

It is now my privilege to teach and promote the MJR message all over Tasmania and to many 'mainlanders'. I am inspired by the students and staff, who continually find unique ways to connect the MJR philosophy to their Religious Education (RE) curriculum. One example is that a large number of teachers are integrating MJR philosophies within their RE planning as units such as *Jesus, Prayer and Christian Living*— concepts that blend beautifully together. Also we are finding crucial connections with many other subject areas and especially to occurrences in students' daily lives. It is amazing to hear how many past students still have their MJR book and/or the 'Where was Jesus in my life today?' green card, who revisit their journaling with fond memories.

Remember your positive attitude is contagious, so why not **Cs the moment** and further investigate how this marvellous resource can help you, your students and your communities connect to Jesus.

LIVE Jesus in your heart ---- FOREVER!

Biographical Note:
Marty Ogle has taught in Tasmania, The Northern Territory – Bathurst Island & Darwin, Western Australia – Perth & Kalgoorlie, New South Wales and The Philippines. He has been Principal, Assistant Principal (RE & Teaching) and is currently the Tasmanian State Project Officer: Make Jesus Real (MJR). He can be contacted at marty.ogle@catholic.tas.edu.au or by contacting the Tasmanian Catholic Office on 03 62108831.

Editor's Notes:

1. *Marty would like to thank Peter 'Mitch' Mitchell, Tony Brennan, Dr Drasco Dizdar and Garratt Publishing for their valued input into this article.*
2. *The 'Make Jesus Real' booklet can be purchased from garrattpublishing.com.au*
3. *Marty advises there will be a National 2017 MJR Conference on the Gold Coast (4th - 5th May 2017) and that a new website shares resources and updated information about MJR (www.makejesusreal.com.au).*

Figure 3: Marty Ogle with students from Sacred Heart Primary School Launceston

Establishing goals for a personal learning strategy: Coaching learning

John Lewis
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Key words: coaching learning, goals, goal setting, learning strategies

Establishing a goal, and setting out to achieve it, is common enough. However, when the process of achieving a goal becomes an exploration for developing a personal learning strategy, then the possibilities start to open up for a specific approach to better learning.

A disposition to learn: Opening the door

Students are often defined by their outcomes. Yet it is the process of learning that should receive the greatest attention, since it is always the richness of the process engaged in by the individual, that leads to the best and most enduring outcomes. A mere hunger for results usually leads to a variety of learning shortcuts. Indeed, it is true that a concentration on content often inhibits the student's engagement with the ways of learning that may lead to a deeper, and more perceptive, engagement with the subject's content. Ultimately, the dynamics of the classroom begin to change for the better, and results improve, when the defining mark of success becomes students possessing a disposition to learn in contrast to achieving a hierarchy of outcomes.

Student learning: Each their own teacher

There are a variety of factors that can lead to students underachieving in the classroom. It is true that some suffer from low self-esteem. Yet this is potentially easily addressed and does not define the struggle of most. Indeed, there is a growing body of literature pointing to an overuse of self-esteem in education and parenting (Barry, Grafeman, Adler & Pickard, 2013; Fuller, 2012; Squires, 2013; Twenge & Campbell, 2009). An avalanche of prizes, ribbons and accolades for achieving the mundane, with little concerted or planned effort, does not lead to self -reflection on the part of the student as to how he or she could do better by approaching their learning from the best possible perspective. When added to this the belief of being special and perfect "just as you are", that all that is needed is to "follow your dreams" and "believe in yourself" to achieve positive life outcomes, then attending school may become a wasted effort, and the teacher an imposition, to a life propelled forward by a tsunami of affirmations. An effort to bolster confidence, as the stimulus for learning, is often superficial to the student's real needs, and totally external. By contrast, students are more likely to succeed by taking charge of their own learning and establishing internal stimuli, so that a disposition to learn becomes their personal narrative. Teachers are in a unique position to foster this process intentionally, constructively and thoughtfully.

A means to achieving this outcome is by the teacher coaching the student to establish worthwhile goals and strategies for achieving them. Goals focus a student's attention on their learning needs including establishing successful strategies and learning approaches. Goals, to be useful, need to be within the student's reach, be relevant to their learning, and worth obtaining. Important to the process of student's benefiting from goal setting is that goals must come from the student and they must personally learn and experience their value. This is because setting goals has to do with what the student is able to learn for himself or herself. Learning is unique for each student, since a variety of circumstances, specific to each journey, identifies the needs that the individual must discover for herself or himself.

> *"Attending school may become a wasted effort, and the teacher an imposition, to a life propelled forward by a tsunami of affirmations."*

An individualised strategy: The path less trod

As the student is encouraged to establish a personal learning goal, they usually become more committed and responsible for implementing strategies to ensure that the goal has a good chance of being reached. Therefore, a goal needs be established along with an accompanying strategy. Students can then become accountable for how successfully they are attending to their strategies. As goals, strategies and outcomes are related to the class, it often becomes apparent that goals are unachieved because strategies were not maintained. Alternatively, different strategies may need to be attempted before a successful approach is reached. In this way, the student, and others, learn from their testimonies, and discover successful learning strategies that lead to goals being met. In this way a process of self-discovery unfolds

and a learning culture emerges. A good learning culture in the classroom encompasses the goals, the successful strategies devised to achieve them, and the underlying disposition to learn that the students come to embrace.

Coaching for learning: Teaching beyond content

Throughout the process, the teacher acts as the primary coach. Students should be encouraged, guided and challenged in establishing goals and developing strategies to achieve them. The best outcomes are produced when the emphasis is placed on establishing positive approaches to learning that leave the student feeling satisfied with the process. Goals come and go; are achieved or not achieved. What is important, is to establish a successful learning strategy that leaves the student with a good learning characteristic. In this way students learn that good outcomes are not automatic, but come about through deliberate approaches to learning that develop into learning strategies applied in the classroom and at home.

> *Students learn that good outcomes are not automatic, but come about through deliberate approaches to learning that develop into learning strategies*

As it happened

At Prescott College, South Australia, a Year 8 English class was encouraged to establish goals and the accompanying strategies to achieve them. Discussion addressed what goals were and the benefits that students might be able to experience if they established them. At first the process moved slowly. Only three students readily thought of a goal. The students were never rewarded for establishing a goal and there was never a due date. The student created their own goals and asserted them as theirs totally. Goals were never assigned. After a week, testimonials of goals set and achieved, started to encourage others to join the process. After a few weeks all students had established a goal. Students generally 'bought in' because of the confidence and enthusiasm that had been generated by others. The rewards were viewed as internal, as they experienced the benefits for themselves, intrinsically. Many students came to establish goals enthusiastically, most because they believed that it was worthwhile, and a few because they felt they had to fit in.

Initially weekly goals were established, and then fortnightly. Many students rolled their goal over into the next week until they believed it had been reached. Others took on new goals. Daily 'check-ins' established how they believed they were progressing with their strategy, and then weekly 'wrap ups' assessed progress. During these times strategies were discussed. A final session engaged students giving testimonials on how the process had worked for them. Some of these testimonials can be accessed as videos (jlewis@prescottcollege.sa.edu.au).

What happened: Personal observations

Generally, students were able to provide a before and after scenario. Qualitatively it was noted that confidence had increased, grades improved and important lessons about learning, and self, were shared. Most goals were task orientated. Improving in spelling tests was popular. However, some were personal; a choice that was encouraged. For example: Being a more organised person; speaking in front of others; growing in confidence. A few joined in grudgingly. One shared, "What if you are perfect the way you are?" This was a fascinating response, paralleling a growing sense of entitlement amongst American college students (Twenge and Campbell, 2009), and a clear inhibitor to successful learning. A couple of others established goals, but lacked the confidence to act on them consistently. One student dramatically improved, then pulled back and returned to underachieving. Such students present a more demanding puzzle that needs solving.

Reflections: Informing futures

Why some embrace goal setting and others are indifferent is an important consideration. While it is true that when the student is ready the teacher begins, it is even more so, that when the student is ready, the student begins. The desire to learn and improve gives rise to the need to set goals and establish strategies. There are numerous reasons why students refuse to "buy in". A narcissistic disposition will not see the need to make changes. Such students must first come to see the benefits of further personal development. By contrast, some are so weighed down by experiencing disappointment that little will budge them out of their cul-de-sac of resistance. They live in a cycle of disappointment and apathy that has become well rehearsed. These students should be encouraged to devise small challenges to 'test the waters' slowly, experiencing at first small measures of success. For this reason, achieving goals must never be used for assessment, determining success or failure, or as a trigger for discipline. The students are being encouraged to buy into a disposition to learn well. Some move quickly, while for others it is a long and arduous process, however over time a receptive, effective and successful culture for learning emerges in the classroom.

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Dyslexia: 10 strategies

TEACH[R]

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Abstract

Dyslexia once thought of as a hidden learning difficulty is now exposed, due to MRI technology, as a specific learning disability. Dyslexia has a neurological basis that transverses all languages and cultures. Early identification of possible at risk students ought to occur so that immediate intervention strategies can be implemented. Schools also need to ensure that reading instruction includes all elements of 'The Big 6 of Reading' and these elements are taught using an explicit direct multisensory methodology. As dyslexia has an impact on all areas of the student's education; early intervention including adjustment to student tasks and assessments needs to occur to ensure that the student develops an understanding of dyslexia; their personal strengths and weaknesses; and strategies for successful achievement, thus enabling the student to build a positive self-esteem.

Defining Dyslexia

Numerous definitions for dyslexia abound with the majority of the definitions centring on the comparison of students' differences between their reading ability and their overall linguistic and cognitive abilities (Zaretsky & Velleman, 2011). Further definitions broaden the criteria of dyslexia to include the persistent difficulty to attain correct and fluent word recognition skills regardless of average intelligence, functioning receptive senses and access to adequate academic instruction (Lyon, Shaywitz & Shaywitz, 2003). The International Dyslexia Association (IDA, 2002, para. 1) adds further clarity with its widely accepted and often adopted definition of dyslexia that states:

> Dyslexia is a specific learning disability that is neurological in origin. It is characterised by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge.

In the modern era, the use of Magnetic Resonance Imaging (MRI) has clearly demonstrated that, dyslexia, once thought of as "a hidden disability" (Swanson, Harris & Graham, 2013, p. 654) is now visible; and when comparing dyslexic and non-dyslexic students, there exists a difference in the neural functioning in the brain; and this neural variance transverses all languages and cultures (Lyon et al., 2003; Mather & Wendling, 2012). Students with dyslexia display specific learning difficulties with the phonological elements of language and this is evidenced in any activity that involves the pairing of the orthography symbol sequences to the corresponding phonemes, such as decoding real and nonsense words, reading fluently and spelling (Lyon et al., 2003). These language difficulties lead to a student's reduced reading experience and consequential adversities in reading comprehension, vocabulary and the development of deeper background knowledge.

Dyslexia occurs on a continuum with students differing in the severity of difficulties. Often students with dyslexia will present with comorbid deficits in other academic and cognitive areas. Various research findings identify the prevalence of dyslexia ranging from three to as high as twenty per cent of the population (Castles, Wheldall & Nayton, 2014, para. 8). In Australia, it is projected that ten per cent of the population has dyslexia (Australian Dyslexia Association [ADA], 2014, para. 1).

"Various research findings identify the prevalence of dyslexia ranging from three to as high as twenty per cent of the population."

"The prospect is positive for students "who receive, intensive, systematic interventions" … therefore schools need to be proactive and implement early screening for all students."

History of Australian Government Legislation involving Dyslexia

In Australia, Dyslexia is recognised under an act (the Disabilty Discrimination Act [DDA],1992, item f.) which describes, in part, "a disorder or malfunction that results in the person learning differently from a person without the disorder or malfunction." Further, The Disability Standards for Education 2005 (Commonwealth of Australia, 2015a) claim to "seek to ensure that students with disability can access and participate in education on the same basis as other students" (Commonwealth of Australia, 2015b, para. 1). In 2007, in NSW, the Educational Support for Dyslexia Children Bill (Parliament of New South Wales, 2007, para. 2) required that "dyslexia be included within the Government's disability criteria when providing special or additional assistance" to students. A Review to The Disability Standards for Education in 2012 (Australian Government, 2012) recommended that dyslexia be specifically listed as a learning disability. In 2014, as part of the Students First Education reforms, The Policy Roundtable on Students with Dyslexia (Department of Education and Training [DET], 2014) reiterated the importance that students with dyslexia be supported with in-class and whole school strategies to enable them to fulfil their potential, and that dyslexia be included in the 2015 Nationally Consistent Collection of Data on School Students with Disability (DET, 2015). Currently, NSW is the only state that formally recognises dyslexia as a learning disability under the state's Education Act.

Learning behaviours related to Dyslexia

Students with dyslexia all exhibit a shared commonality of core indicators that include difficulty with phonological processing in decoding (reading) and encoding (spelling) activities (IDA, 2015) simultaneously exhibiting strengths in areas such as creative thinking, reasoning, problem solving, conceptual abilities, comprehending, 3-D construction, seeing the big picture (Shaywitz, 2005) and can also display giftedness in areas that don't require strong literacy skills (Karten, 2015).

A vast variation of difficulties can be demonstrated amid students and it must be remembered that not all students who display difficulties with reading or spelling will have dyslexia. Additional core characteristics or behaviours that can indicate the possibility of dyslexia are:

- inconsistent performance on a day-to-day basis
- poor recall of prior learning in reading and spelling
- unexpected inverse correlation between effort and output
- difficulty with word storage, sequencing, handwriting and co-ordination
- taking longer to process information
- poor performance in timed tasks
- having strong mathematical skills, but has difficulty memorising number facts

(Adapted from Ministry of Education New Zealand [MENZ], 2008a,b)

Age-Related Indicators of Dyslexia

Additional characteristics that correlate with the presence of dyslexia can be associated with a student's academic progression from Prep to Senior School. As a student progresses from one stage to the next, educators are reminded that characteristics need not be confined to any one stage. Furthermore, it is imperative that educators be mindful that students with dyslexia are working considerably harder than non-dyslexic students and are susceptible to frustration and fatigue. Table 1 outlines age-related characteristics that can indicate the prevalence of dyslexia.

Assessment Instruments for Early Primary

Early identification for dyslexia are vital so that immediate intervention can occur. All too often in the school environment, there is a 'wait to fail' philosophy for reading and spelling skills. Due to limited resources and the unpreparedness of teachers, students are left to fail before intervention measures are instigated. Regardless that dyslexia is a lifetime difficulty and that specific adjustments may continually be required, the prospect is positive for students "who receive, intensive, systematic interventions" (Mather & Wendling, 2012, p. 14), therefore schools need to be proactive and implement early screening for all students.

From the beginning of a student's academic career, family history of reading and spelling achievement and the child's early speech acquisition development details need to be collated. If a parent or sibling has a history of dyslexia or reading difficulties, there is a 25-50% possibility that the student will also manifest these difficulties. Furthermore, Shaywitz (2005) points out that the early acquisition of speech in young children is 'the most important clue to a potential reading problem" (p. 94). Other early screening considerations include hearing and vision concerns to eliminate any physical causes (Mather & Wendling (2012).

Rapid Automatized Naming (RAN) skills have a strong correlation to positive reading acquisition and have been successfully utilised as early identification instruments for students with dyslexia and other reading difficulties (Brookes, Ng, Hong

Table 1: Age-Related indicators of dyslexia (adapted from Dyslexia Foundation of New Zealand [DFNZ], 2015; MENZ, 2008)

Prep Developing Oral Language	**Junior School** **Learning to Read**	**Middle School** **Reading for Learning**	**Senior School** **Analysing and Synthesising**

Difficulty with:
• speech
• learning rhyming words
• naming people and objects
• remembering-
  • letters in name
  • nursery rhymes
  • following instructions
• getting dressed
• jumbled phrases
• substitution of words
• listening and paying attention
 	
Dislikes:
• jigsaws
• drawing
 	
Enjoys reading but shows no interest in letters
	Years 1 & 2
	
	Difficulty with:
	• separating words into phonemes
	• letter-sound correspondences
	• remembering sight words
	• sounding syllables
	• spelling simple words
	• pencil grip
	• concentration on reading tasks
	• reading left to right
	• short term memory
	
	Relies on picture cues
	
	Doesn't like reading
	
	Avoids reading
	
	Complains reading is hard
	
	Years 3 & 4
	Difficulty with:
	• pronouncing long words
	• grammar
	• spelling rules
	• fluent oral language
	• using proper names, uses "stuff" or "'things"
	• story sequencing
	• remembering dates, phone number, names
	• word attack skills
	• leaves out words
	• completing written work
	• compound words
	• self-esteem
	• concentration
	• handwriting
		Difficulty with:
		• reading and spelling multisyllabic words
		• word structures
		• sight words
		• reading comprehension
		• vocabulary
		• spelling
		• reading fluently
		• oral reading lacks inflection
		• punctuation in reading
		• following instructions
		• written timed tests
		• finding words in dictionary
		
		Avoids reading
		
		Does better on oral exams
		
		Lacks confidence
			Difficulty with:
			• automatic word identification
			• reading speed
			• spelling and written tasks
			• note taking
			• organising and completing assignments
			• timed tasks
			• processing information
			• written instructions
			
			Prefers:
			• conversation to email
			• practical tasks
			
			Poor confidence and self-esteem
			
			Has areas of particular strength

(adapted from Dyslexia Foundation of New Zealand [DFNZ], 2015; MENZ, 2008)

"RAN screening is beneficial due to its speed, ease-of-use and its ability to be utilised with Prep and Kindy students, thus allowing for early identification and … intervention"

Lim, Tan, & Lukitoet, 2011; Wolf & Denckia, 2005). RAN involves the student's ability to quickly identify recognisable visuals, such as numerals, letters, colours and objects. These identification activities involve a combination of phonological, orthographic and processing tasks which represent a similar microcosm of cognitive tasks "that are involved in reading development" (Swanson, Harris & Graham 2013, p. 180). RAN screening is beneficial due to its speed, ease-of-use and its ability to be utilised with Prep and Kindy students, thus allowing for early identification and early intervention (See Appendix 1. RAN sample assessment).

Before the completion of grade one, students should be screened in skills that are foundations to reading development, including general phonological and specific phonemic awareness assessments that test sound comparisons, segmentations and blending (Shaywitz, 2005). The 'Ants in the Apple' program (Meeks & Easson, 2014) has an initial assessment that screens for phonemic awareness, reading and spelling skills. From grade two, assessments of word reading, decoding and spelling should be completed (IDA, 2015). Assessment instruments, including ACER Progressive Achievement Tests (PAT) Reading (Australian Council for Educational Research, 2015) that measures reading comprehension, word knowledge

Students who have an early identification of dyslexia are able to integrate this concept into their identity and have a reduced likelihood of developing a low self-esteem and the belief that they are lazy or stupid.

and spelling; and Making Up for Lost Time in Literacy (MultiLit) (Wheldall, Wheldall & Rothwell, 2015) that screens for sight words and phonological awareness, including the decoding of nonsense words. A student's ability to decode "nonsense words is the best measure of phonological decoding skill in children" (Shaywitz, 2005, p. 133). Teachers also need to attend to the skills of word decoding, intonation and fluency demonstrated during oral reading tasks. For a student who is of average ability, a "laboured oral reading can be a sign of dyslexia" (Shaywitz, 2005, p. 134). Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (https://dibels.uoregon.edu/), can be utilised to screen oral reading skills in students.

Relevant teaching strategies for students with dyslexia

As dyslexia is not associated with deficiency in cognitive capability, it can be reasoned that students with dyslexia would be highly receptive to suitable intervention such as intensive training to improve reading skills (Waldie, Austin, Hattie & Fairbrass, 2014). The benefits of early identification and intervention are numerous. Students who have an early identification of dyslexia are able to integrate this concept into their identity and have a reduced likelihood of developing a low self-esteem and the belief that they are lazy or stupid. Identification also allows for informed and immediate interventions and accommodations that minimise the impact on the student's learning and decrease the gap between the student's age and their reading ability (Armstrong & Squires, 2012).

Teaching practice accommodations

It is essential that teachers be skilled in the process of identifying students that are experiencing reading difficulties and the strategies that need to be implemented to counteract these difficulties. Teachers need to have an in-depth knowledge in the basic concepts of language and be able to impart this knowledge in a multisensory explicit and structured program that is "positively associated with student reading achievement" (Washburn & Mulcahy, 2014, p. 329). Currently many teachers are unprepared to identify language problems and are not equipped with the necessary strategies and/or resources to adequately address these learning needs (Moats & Lyon, 1996). This is further evidenced by reports from students with dyslexia that teachers often lacked understanding of their learning needs (Long, MacBlain & MacBlain, 2007). It is vital that schools ensure that teachers are adequately prepared and appropriate resources are available to cater for students with dyslexia. As part of this process a whole school approach needs to be adopted that implements evidence based strategies.

STRATEGY ONE – Explicit direct instruction in phonological and phonemic skills

The (second) major recommendation of the National Inquiry into the Teaching of Literacy (Rowe & National Inquiry into the Teaching of Literacy, 2005, p. 14) was that "teachers provide systematic, direct and explicit phonics instruction so that children master the essential alphabetic code-breaking skills." To increase the effectiveness of the instruction, a multisensory instructional methodology needs to be adopted that includes visual, auditory and kinaesthetic strategies (Wadlington, 2000). The intervention also needs to include the elements of 'The Big 6 of Reading': oral language, phonological awareness, phonics, vocabulary, fluency and comprehension (Konza, 2010; Moore & Hammond, 2010).

These strategies are appropriate in the early years of school when students are learning the skill of reading. Schools need to ensure that their reading programs incorporate explicit phonemic and phonological skills. Schools can utilise programs such as *Letter and Sounds* (Department for Children, Schools and Families, 2008), the *Reading Doctor* (2016), *Cracking the ABC Code* (Fawcett, n.d.), *Spelfabet* (Clarke, n.d.) and *Jolly Phonics* (Jolly Learning, n.d.) that provide the necessary explicit phonics instruction to enable students to develop segmenting, phoneme blending and letter-sound correspondence. For older students, intervention in phonological awareness can be implemented using MultiLit (Wheldall et al., 2015), where students require additional instruction with sight words, vocabulary development, reading comprehension and numerous practice opportunities to develop reading fluency. Students with dyslexia require extensive practice sessions to develop the overlearning of skills required to develop automaticity that leads to reading fluency. Shaywitz (2005) recommends, that to develop fluency, once students can decode a passage of text, that practice should include the student rereading the same passage out loud at least four times.

STRATEGY TWO – Worksheets for students with dyslexia

Recent studies have been investigating the impact that font style has on the ease of reading for students. Use of a three-dimensional font has shown improvement in the reading scores for students with dyslexia of 10 to 25 percent (Zascavage, McKenzie, Buot, Woods & Orton-Gillingham, 2012). The use of a disfluent (hard to read) font leads to better recall

due to the deeper processing needed. Students with dyslexia also benefited greatly "in retention and recall when presented with information in a disfluent font" (French, Blood, Bright, Futak & Grohmann, 2013, p. 301). Alternatively, students can identify their preference amongst the dyslexia friendly fonts of Comic Sans, Century Gothic, Times Roman and Dyslexie (Reid & Green, 2014). Dyslexie, a 'purposely created' font for students with dyslexia, has altered shapes of letters (Troeva, 2015) and aids with reading speed and accuracy (van de Vrugt & Ossen, 2012). Other worksheet considerations that facilitate effortless navigation include larger font size; use of visual aids; uncrowded well-spaced-out format (MacCullagh, 2014); using left justification; avoiding using italics, capitals and underlining, and the use of bold type to emphasise (Davies, 2014). These strategies are appropriate for inclusion due to the low cost and ease of implementation (See Appendix 2. Worksheet Checklist for Teachers).

Classroom expectations, materials and other accommodations

The classroom is a microcosm of inter-related forces that impact learning including factors of homework expectations, resources used, student recording, physical environment, time constraints and stressors. Small accommodations in these forces can have a positive impact on learning for students with dyslexia (DFNZ, 2015). The following strategies address these

STRATEGY THREE – Homework
Homework needs to be personalised and differentiated and consist of simple and clear instructions. Homework tasks ought to be time-driven not task-driven, provide alternatives to writing tasks, relate to prior knowledge (DFNZ, 2015), and be provided in the appropriate printed form (Reid & Green, 2014). Structured, clear and easy-to-complete homework tasks encourage the student to engage with the content and lessen homework stress.

STRATEGY FOUR – Classroom resources
Resources used by both the teacher and student should utilize colour coding, clear labels and use familiar and consistent layout. Students with dyslexia report that their greatest difficulty is taking notes by dictation and copying off the board (Long, MacBlain, & MacBlain, 2007). Therefore, student recording should involve minimal copying from the board and printed copies of teacher notes and PowerPoint presentations should be provided (DFNZ, 2015). This ensures that students are free from the mechanical task of copying, allowing more time for the student to engage with the content and can aid completion of alternative tasks of highlighting key words and identifying main ideas (Reid & Green, 2014). Additionally, the creation of both personal dictionaries to store subject-specific vocabulary and visual summaries for each subject have also proven beneficial (Long et al., 2007; Reid & Green, 2014).

STRATEGY FIVE – Classroom learning environment
Teachers need to be mindful of the classroom environment and its impact on students. Students with dyslexia may experience difficulties with looking, listening, concentrating, sitting still, locating equipment and writing (Reid & Green, 2014). Time spent in ensuring the classroom environment is 'dyslexia friendly' will assist students in their learning. Considerations include: lighting, seating proximity to the board and teacher (DFNZ, 2015), control of background noise, visual labels, neat and clearly labelled equipment, and large well-spaced wall displays (Reid & Green, 2014).

"Lowering the stress in the classroom can be accomplished by having a culture of mistake-making-leads-to-learning."

STRATEGY SIX – Time constraints
Due to the neurobiological evidence that demonstrates that students with dyslexia require additional time to process reading tasks, students should be provided with personally appropriate additional time in test situations (Mather & Wendling, 2012; Reid & Green, 2014; Karten, 2015). Other time concerns include providing shorter achievable tasks and being flexible with assignment deadlines (DFNZ, 2015). Further, students with dyslexia report that their second greatest difficulty is to concentrate for long periods (Long et al., 2007), therefore, students need to utilise 'brain breaks' where opportunities to move about and stretch are provided to assist in maintaining concentration and focus levels (Reid & Green, 2014).

STRATEGY SEVEN – Reducing the stressors
Lowering the stress in the classroom can be accomplished by having a culture of mistake-making-leads-to-learning, providing adequate time for thinking, not asking the student to read aloud (Long et al., 2007), and a marking focus on content not spelling errors (DFNZ, 2015). These simple strategies are easy to implement but have a considerable impact on reducing student stress levels.

STRATEGY EIGHT – Provision of teacher mentors
Students with dyslexia should be aligned with an empathic teacher mentor, preferably a teacher that has a sound knowledge of dyslexia and/or a teacher that has dyslexia themselves. The student and the mentor meet briefly twice a week to discuss topics

including: immediate concerns, forward planning and self-evaluation. The mentor also acts as an advocate for the student with other teachers and encourages the student to take responsibility for their learning (Long et al., 2007). This strategy is appropriate as the teacher mentors would assist students to keep pace with school tasks and be able to immediately intercept any difficulties.

STRATEGY NINE – Assistive Technology
Assistive Technology (AT) enables students with dyslexia to have fair and equitable access to print. This can help overcome difficulties with the reading of, and the production of, text and allows students to bypass these difficulties and demonstrate their strengths in higher-order concept development and analysis. Technologies, like Dragon Voice Recognition (http://www.nuance.com), aid the student to transcribe their thoughts via speech-to-text capabilities, bypassing difficulties in spelling and handwriting, thus enabling the student to produce higher quality text (Swanson, Harris & Graham, 2013). Other technologies, such as Natural Reader (http://www.naturalreaders.com), facilitate access to text by converting written text to spoken words, bypassing difficulties in reading, and allowing students to access content that leads to the development of deeper understanding. Additional technologies, such as BookShare (http://www.bookshare.org), offer an expanding number of accessible books and periodicals for students with print disabilities, such as dyslexia. Currently in Australia, there are 166 000 books available for an affordable yearly subscription. The E-ssential Guide to Assistive Technology (Schwab Learning, 2008) and the 'Wheel of Apps' (McNeill, 2015; Wilson, 2015) provide support for parents in the identification of suitable AT for their child (See Appendix 3 and Appendix 4).

"As dyslexia is a life-long difficulty and "is often resistant to improvement despite dedicated literacy and numeracy teaching interventions" … teaching needs to also focus on developing students' adaptive coping skills."

STRATEGY TEN – Building reliance and self-esteem
Dyslexia impacts on more than just the education of a student; it also has ramifications on the social and emotional well-being of the student. The extent of the impact is affected by the environment, early diagnosis and intervention implementation (Mather & Wendling, 2012). Early diagnosis correlates to an increase in the positive understanding and tolerance for both the student and their peers (Armstrong & Squires, 2012). Often intervention models for dyslexia incorporate mechanical strategies of multisensory phonemic awareness programs but fail to address the needs of the whole child (Long et al., 2007). Students with dyslexia carry emotional scars of frustration and defeat from constant failure with activities that involve reading and writing tasks. Teachers need to assist students to build positive self-esteem by reflecting on their strengths (Karten, 2015), developing peer support systems, and acting as advocates when the need arises (Armstrong & Squires, 2012).

As dyslexia is a life-long difficulty and "is often resistant to improvement despite dedicated literacy and numeracy teaching interventions" (Firth, Frydenberg, Steeg & Bond, 2013, p.117), teaching needs to also focus on developing students' adaptive coping skills. Instruction in three main areas: defying self-defeating thoughts, knowledge and consolidation of coping strategies, and identifying needs and seeking appropriate support, should begin as early as possible. Websites such as Beating Dyslexia (http://www.beatingdyslexia.com/) have these and additional strategies on developing self-help skills.

Conclusion

Dyslexia is a specific learning disability that has a neurological origin that negatively affects the student's ability in reading and writing activities (IDA, 2002). This leads to additional difficulties with comprehension, access to content and a reduced reading experience. These difficulties precede student failure and lead to feelings of inadequacy and low self-esteem. Schools need to develop policies and procedures that enable early identification and intervention to occur. Teachers need to have an in-depth knowledge of dyslexia and be skilled in the processes for early identification and have access to strategies and resources for successful evidence based intervention.

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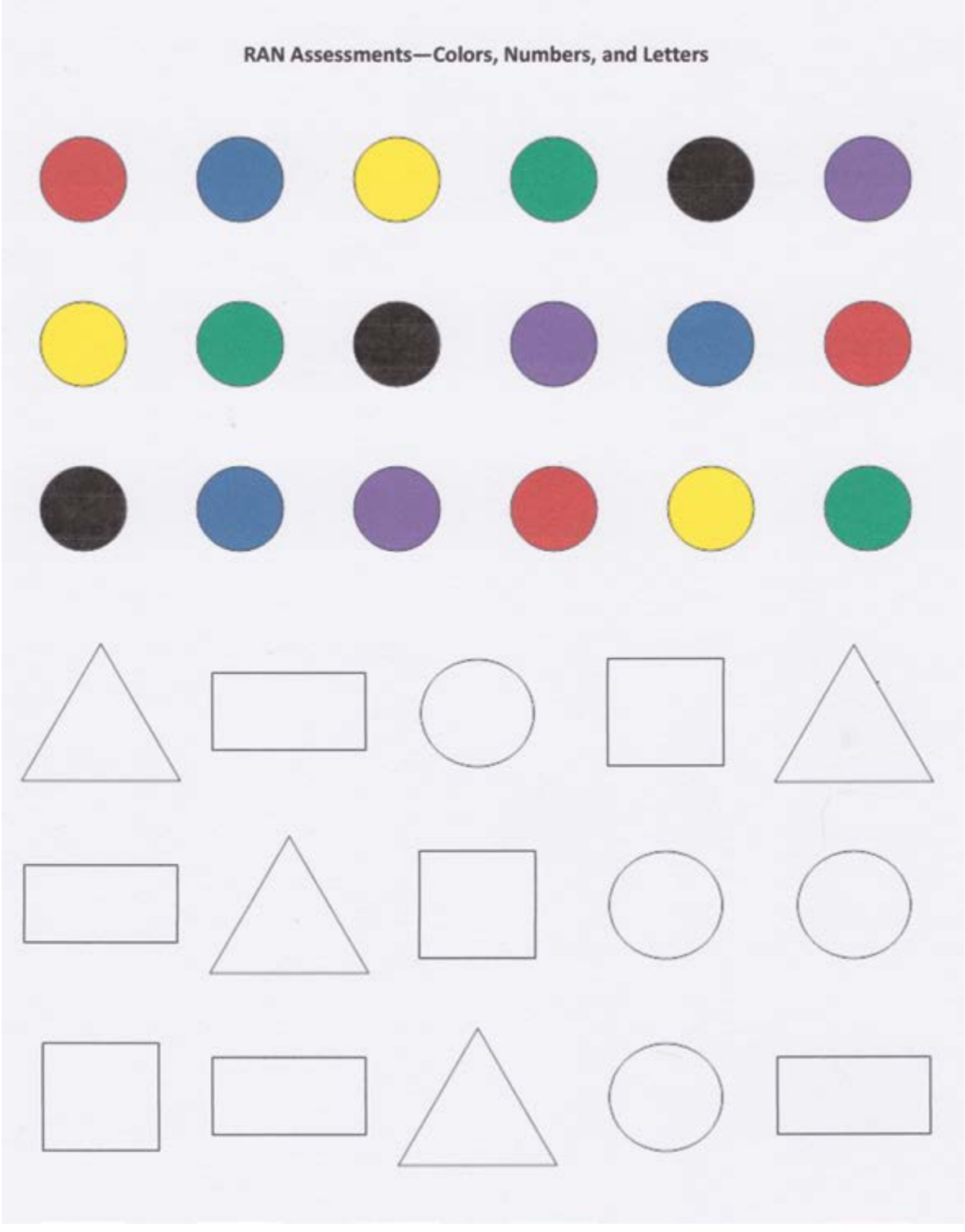
Appendix 1
Sample Assessments for RAN
Retrieved from: http://d3tt741pwxqwm0.cloudfront.net/Nashville-TN-PBS/fluency-k-1/files/fluency-sample-assessments-ran-andras.pdf



Appendix 2
Taken from: Reid & Green, 2014, p. 19.
Worksheet Checklist for Teachers

- ☐ Have small steps been used?
- ☐ Are the sentences short?
- ☐ Is the vocabulary easy to understand?
- ☐ Have visuals been used?
- ☐ Has large print been used?
- ☐ Is the font style appropriate?

Dyslexic friendly fonts: Comic Sans, Century Gothic, Times New Roman, Dsylexie

- Do you prefer to read in this font? (Times New Roman)
- Do you prefer to read in this font? (Comic Sans)
- Do you prefer to read in this font? (Century Gothic)

- ☐ Has enough attention been given to presentation?
  - Space out the information, do not crowd the page.
  - Use of indents for headings, subheadings
  - Use of bold font or highlighting and/or keypoints
- ☐ Are there opportunities for self-monitoring and self-correction?
  - Task broken down into smaller steps
  - Self-assessment student checklist given? (see below)
- ☐ Are the tasks within the pupil's comfort zone?

Student Self-Assessment Checklist
Taken from: Reid & Green, 2014, p. 6.

Start of Task

- ☐ What is my goal?
- ☐ What do I want to accomplish?
- ☐ What do I need to know before starting?
- ☐ What resources do I need?
- ☐ What is my deadline?

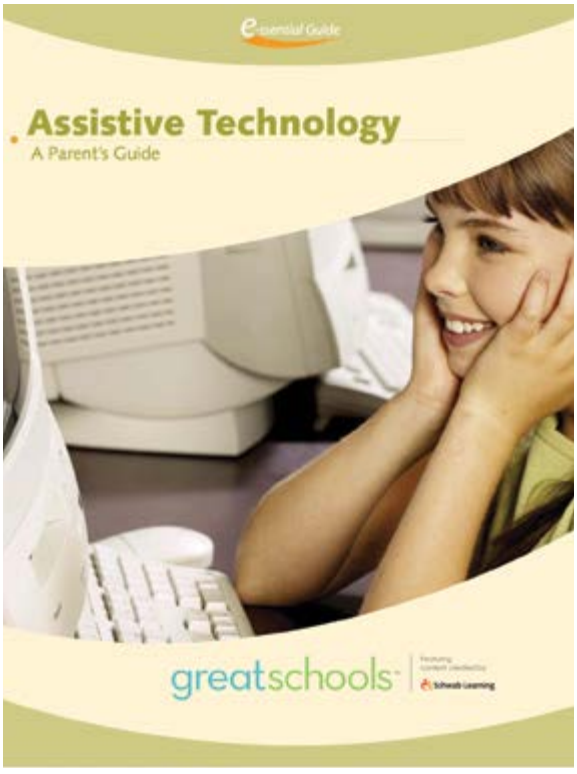
Midway through Task

- ☐ How am I going?
- ☐ Do I need other resources to complete task?
- ☐ What else can I do to finish the task?

End of Task

- ☐ Did I accomplish my goal?
- ☐ Was I efficient?
- ☐ What worked?
- ☐ What did not work?
- ☐ Why did it not work?
- ☐ What strategies can I use next time?

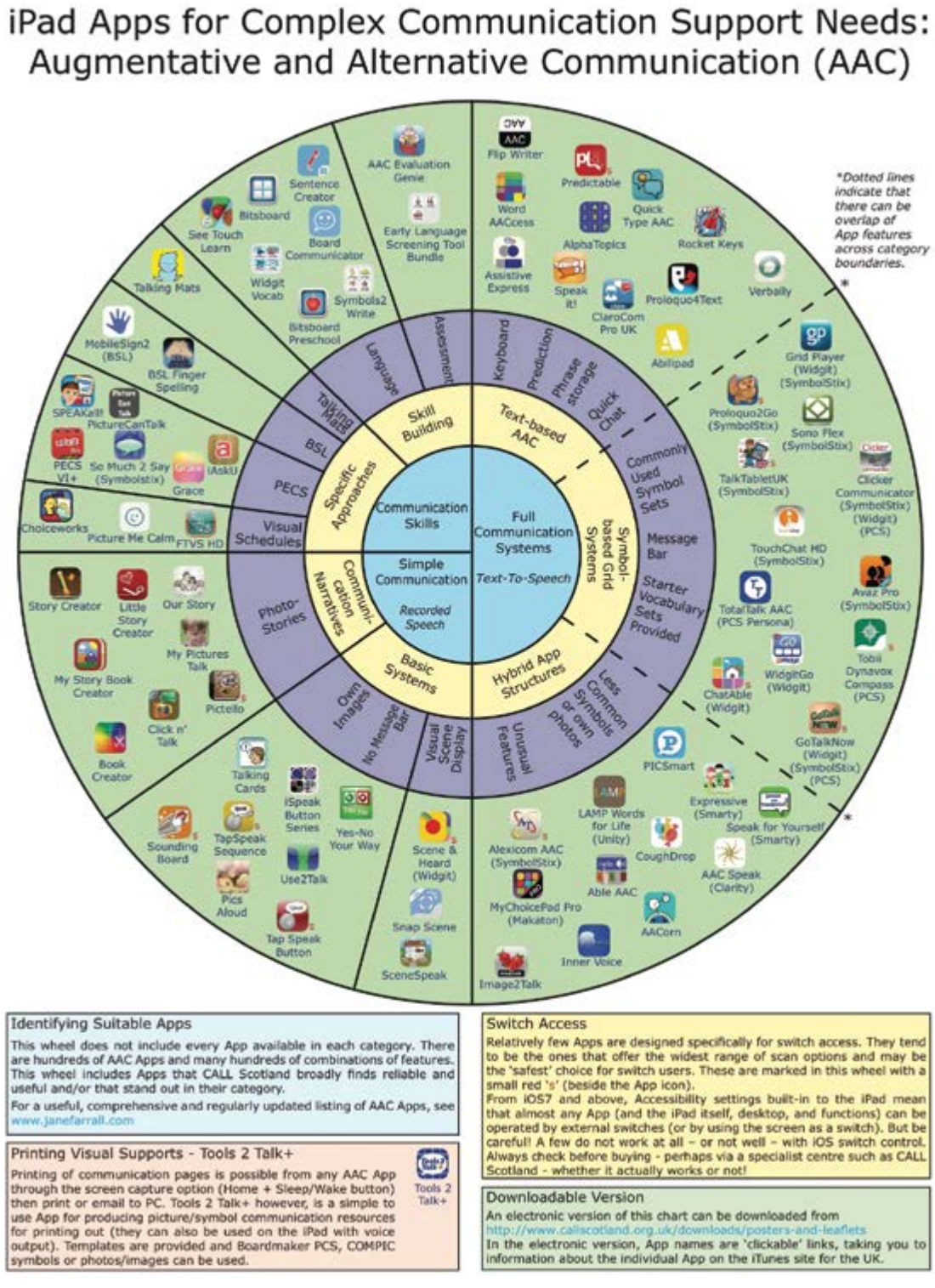
Appendix 3
The E-ssential Guide to Assistive Technology is an e-book available from http://www.disabilityrightsca.org/pubs/Assistive_Technology_Parents_Guide.pdf



Appendix 4
The Wheel of Apps.
'The wheel of apps' is a graphical representation of some of the applications suitable for assisting students with dyslexia and available from –

- for iPads http://www.callscotland.org.uk/downloads/posters-and-leaflets/ipad-apps-for-complex-communication-support-needs/
- and Androids http://www.callscotland.org.uk/common-assets/cm-files/posters/android-apps-for-learners-with-dyslexia.pdf

Appendix 4
Wheel of Apps. (continued)
Source: http://www.callscotland.org.uk/common-assets/cm-files/posters/ipad-apps-for-complex-communication-support-needs.pdf



AVONDALE SHORT COURSES

OUTDOOR RECREATION

Outdoor education involves contact with nature, small groups, and adventure, to provide a unique approach in the development of health and wellbeing for school students.

Effective outdoor education programs are best run by teachers who are trained to guide and facilitate outdoor education activities. Avondale is proud to announce the commencement of Outdoor Education short courses for teachers.

These courses will train teachers to be guides in the three activity areas of Bushwalking, Abseiling, and Canoeing/kayaking. The competencies are from the Sport, Fitness and Recreation Training Package (SIS10) and the qualification is a Statement of Attainment from the Certificate III in Outdoor Recreation, which is the recommended qualification for teachers, and others, who wish to guide outdoor education activities. Short courses are available online with a practical assessment in your local area.

BUSHWALKING

Bushwalking Guide Controlled Environments — Controlled bushwalking involves walking in the natural environment for a day or overnight bushwalk. This a skill set of units for those wishing to guide bushwalks in locations such as tracked and easily untracked areas that are reliably marked on maps, and are obvious on the ground.

ABSEILING

Abseiling Guiding Single Pitch (Natural Surfaces) — Abseiling single pitch involves descending vertical or near vertical surfaces using ropes and descending friction devices where there is access to the top and bottom of the cliff. This is a skill set of units for those wishing to guide abseiling activities on natural surfaces which are single pitch.

PADDLING

Canoeing/kayaking Guide Flat Water — Canoeing and kayaking has a broad scope. It involves paddling activities done in a variety of different locations from rivers and lakes to estuaries and protected waters. This is a skill set of units for those wishing to guide canoeing/kayaking trips on flat and undemanding water.

Avondale COLLEGE OF HIGHER EDUCATION | *Designed for Life*

For further information, visit **www.avondale.edu.au/outdoorrec** and select the '**Short Courses**' section

TRANSFORMING CLASSROOM PRACTICE

Andrea Thompson
Teacher, Avondale School - Toronto Campus, Toronto, NSW
shared with
Beverley Christian
Senior Lecturer, Discipline of Education, Avondale College of Higher Education, Cooranbong, NSW

"at the forefront of 21st Century learning using information and communication technology in a creative and innovative way"

Is it possible to encourage Years 3-6 children to express their faith using a cross curriculum learning initiative?

Andrea Thompson, teacher at Avondale School's Toronto Campus, wanted to use an authentic cross-curriculum project to contribute to the holistic development of her students. She also wanted to find a way to help her students gain confidence in sharing their Bible knowledge and faith with their peers and families. She developed the Toronto Campus News (TCN), a project that is part of the weekly timetable.

Students at the Toronto Campus of Avondale School are at the forefront of 21st Century learning using information and communication technology in a creative and innovative way to meet the outcomes of the curriculum. Every student in Years 3-6 is involved in producing the school news, entitled Toronto Campus News (TCN) that features on the Avondale School website, at the local Campus Church, and at school for special events like Open Day.

Each student has several responsibilities, which contribute to the production of the news. These roles include script-writer, reporter, news anchor, communications director, stage manager, camera operator, wardrobe assistant, teleprompter, sound technician, and post movie editor. Students must first apply for their choice of job in writing, and are interviewed for the position before being assigned a role.

Collaboration is a key element in the TCN news program. The students are an integral part of a team. They nominate news stories for the

Figure 1. Mrs Andrea Thompson with (left to right) back row: Jessica Pearce, Grace Lord, Uriah Leo, Kanayah Saifaleupolu, Nicholas Holt, Caitlyn Menzies, Riley Thomson, Sophie Holt, with front row (seated): Tamar Short and Jonathan Robins-Lilikakis. Photography: Advanced Life

next edition of the news and give reasons why the story they suggest should be included. As a group, they select which stories to include, and in which order they will appear in the program. Once news stories are assigned, students draft and write their scripts. Then they type their script into the TCN running sheet online, in a Google drive document. This gives the whole class the ability to add their segment to the running sheet at the same time. Students use iPads, both for typing news scripts, and in front of the camera as part of the teleprompter. The students use a green screen to create a virtual newsroom. Student lighting specialists and sound engineers make the news production smooth and efficient. Students also participate in a behind the scenes blog which includes photographs and videos.

Each edition of TCN is evaluated by the students, who are then paid for their work in TCN dollars. After paying 20% in tax, a further 10% in tithe, and paying rent on their office space, students have the option of spending their TCN dollars at the TCN shop for items that help them with their employment, for example pens, highlighters, pencils, and post-it notes. Alternatively, they can save TCN dollars to buy their office space, or save for bigger items at the end of the year. This encourages financial literacy and good stewardship.

TCN has strong links to the Australian Curriculum General Capabilities, being Literacy, Numeracy, Information and Communication Technology, Critical and Creative Thinking, Personal and Social Capability, Ethical Understanding, and Intercultural Understanding. But Andrea Thompson wants TCN to be even more than a top quality learning experience that connects learners with real life. She also wants it to connect children with their faith. This sometimes occurs through interviews, and a recent addition to the TCN news has been a devotional segment. This segment encourages the students to speak openly about their faith as they explain a Bible verse to their viewers.

One of the advantages of a small school is that all students are actively involved. Everyone is a vital part of the team. Even Year 3 students are expected to step up to the line—and they do. It is also rewarding to see the older students mentoring their younger classmates. And while all this creative activity and learning is taking place, TCN serves another valuable purpose – sharing the faith and values of the school with the campus church, school families and friends, and the wider community.

Note: Recent editions of TCN may be viewed on (http://www.torontocampusnews.com/).

Figure 2: News writers (left to right) Grace Lord, Cassie Bennett and Tamar Short. Photography: Andrea Thompson

Figure 3: TCN production personnel. Desk (left to right) Cassie Bennett, Tamar Short and Jonathon Robins-Lilikakis with Riley Thompson observing. Photography: Andrea Thompson

"Each edition of TCN is evaluated by the students, who are then paid … After paying 20% in tax, a further 10% in tithe, and paying rent on their office space, students have the option of spending their TCN dollars"

A whole school approach to changing school culture: The SASA way

Danyel Efstratiou
Principal, Sydney Adventist School Auburn, Auburn, NSW

Anjuli Cruz
Marketing Manager, Sydney Adventist Schools, Epping, NSW

Key words: collaborative, data driven, holistic, internal, school improvement

Anyone who has worked in a school or classroom knows changing a culture can be difficult and daunting. The staff at Sydney Adventist School Auburn decided to take up this challenge. These are reflections we can share about the journey so far.

"I was faced with the task of finding a way to bring all cultures together by changing our school culture"

Sydney Adventist School Auburn (SASA) is a Prep-Year 6 primary school with approximately 135 students. It is a small school set in a very diverse community not far from the Sydney CBD. The school has had many challenges in recent years as it has changed from a junior campus (Prep – Grade 4) to a full primary campus (Prep – Grade 6). The school has also had to adapt to meet the needs of the changing multicultural society that surrounds it.

As a school community we really wanted to focus on what values we wanted to see in our school, values we would expect to be shared by everyone who joined our school community. We did not want values on a piece of paper, but values that were demonstrated in every aspect of our school, and reflected in how we treated each other. "I was faced with the task of finding a way to bring all cultures together by changing our school culture," says Mrs Efstratiou.

To start our journey, it was important to find out what our school community thought of our current culture and values, and identify areas where we could do better. We held a half-day workshop where staff, parents, students and interested community members shared their vision for the future of SASA. This workshop created a space for creativity and discussion regarding the vision for the school's values and to identify what was important to our school community.

The workshop was one of the most valuable interactions between stakeholders for really connecting and understanding what our school community wanted. The areas of focus in the workshop were "Things we value", "What we feel our point of difference is", "To visualise the 'ideal' school" and "Identify the purpose of education at SASA". Some of the main findings were that our school community values the love of God, community, joy and peace, humility and resilience, and shows care and nurture towards the students.

During this workshop the parents gave positive feedback on the experiences their children were having at the school, and how they looked forward to coming to school every day. They also shared what they valued most about the school, and their concerns that some of these things could change in the future with different staff and leadership. Some of the information that came out of this workshop was totally unexpected. What started as our school "values" became a set of 10 "ideals", which we now refer to as *The SASA Way*.

The ten ideals were developed to uphold the school's values and encompass the way we do things at SASA. The first ideal is "We Love and Respect God". This is really important to our school because we want every child to be involved in worship and prayer and ultimately come to know God as their friend and Saviour.

To make these 10 ideals become alive to the students we developed Sam and Sally - two characters that demonstrated these ideals. "I wanted the students to connect with these characters so that the ideals became alive and real to them," says Mrs Estratiou. One poster for each of the 10 ideals was developed with Sam and Sally characterising each ideal. There are also plans to create a story book about Sam and Sally's adventures. These stories would serve as a

THE SASA WAY

WE LOVE AND RESPECT GOD

We will be involved in worship and share our love for Him with others.

1 Peter 2:17

WE LOVE LEARNING AND STRIVE TO ACHIEVE OUR BEST

We are purposeful, engaged and enthusiastic learners, always striving to develop our skills and talents.
We do our best in class and we do not interfere with the learning of others.
We will be curious about the world God created.

Hebrews 11:6

WE ALWAYS 'HAVE A GO'

We make good choices and are confident to try new things. We show perseverance when things get tough.

Colossians 3:23

WE HAVE A JOYFUL AND POSITIVE MINDSET

We are humble in victory, graceful in defeat, and always thankful for the abilities and opportunities we have. We are happy and enjoy ourselves at school.

Philippians 4:4

WE RESPECT EACH OTHER AND OUR SCHOOL

We accept and value diversity. We are trustworthy, show tolerance and are understanding towards others.
We greet each other, and all visitors to our school.
We are proud to wear our uniform, and always look neat and tidy.

1 Peter 2:17

WE RESPECT OUR TEACHERS

We speak nicely to our teachers and follow their instructions.

1 Peter 2:17

WE ARE RESPONSIBLE

We keep our school tidy; we do not walk past rubbish. We arrive at school and to class on time.
We take care of our property and respect things that belong to others.

Galatians 6:4-5

WE HELP, SUPPORT AND INCLUDE EACH OTHER

We always look for ways to build and lift others up. We treat others the way we want to be treated.

Luke 6:31

WE VALUE SAFETY

We act safely and do not risk our health and well-being, or the welfare of others.

Psalms 121:7

WE ARE PART OF OUR COMMUNITY

We have many cultures but stand together as one community. We are willing to help those in need.

Philippians 2:1-3

Figure 1. The SASA Way – 10 Ideals

> *What started as our school "values" became a set of 10 "ideals", which we now refer to as The SASA Way.*

benchmark for Christian actions and behaviour in our school, would outline each ideal, and how Sam and Sally tackle these in every day life.

The SASA Way has been in place since the beginning of 2016. Initial implementation began by introducing one ideal a week during first term. Staff were fortunate enough to have a colleague create a story of two children embarking on a journey that found them questioning the value of the Fruits of the Spirit. The students really enjoyed these stories. The Chaplain, supporting this strategy, also told stories in Chapel based on the ideal we were focusing on for the week.

The SASA Way is also a benchmark for discipline in the school. It is a more proactive approach to behaviour management. Teachers refer to the 10 ideals to remind the students of the concepts involved and how each is made 'real' through the way we act and treat each other at school.

> *"I wanted the students to connect with these characters so that the ideals became alive and real to them"*

Though we are still implementing *The SASA Way* we feel that we can see a shift in attitudes with students, staff and families. There are reports of students referring to 'The SASA Way' at home. Parents are giving very positive feedback.

We had one parent tell us she heard her son/daughter tell the other sibling when they were playing, "We don't do that because that's not *The SASA Way*." When you hear stories like this, you can't help but be proud of your whole community and excited about what the future holds.

Mrs Efstratiou's advice to other schools would be, to " hold a workshop and get the people who are key stakeholders in your school together and have them share with each other, and with you, about your school." She believes that this process helps to bring together the ideals and image each person has for their school, and creates a wholesome school community. Her final word, "Just try it."

Editor's Note: Figures (2-4) are a sample chosen from the SASA 10 Ideals posters created by Sabrina Cruz. For further information contact defstratiou@auburn.adventist.edu.au

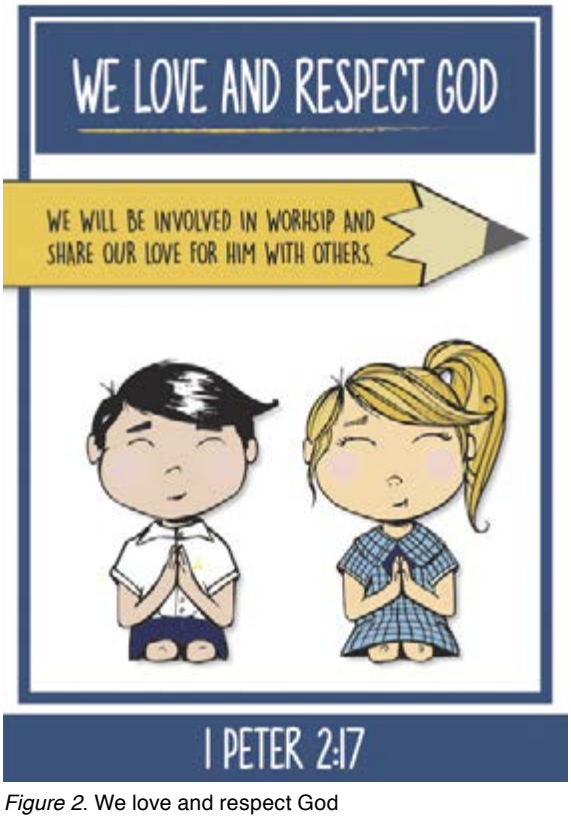


Figure 2. We love and respect God

Figure 3. We love learning

Character, oh! Character, where art thou?

TEACH[R]

Stephen J. Fyson
Principal, D.A.L.E School, St. Philips Christian College, Waratah, NSW

Key words: civic character, Christian education, social trends

Abstract

What has happened to the concept of character in our current times, and is it important? This essay asks this question with reference to the increased use of 'personality' in our language and thinking, and contends that this change has resulted in a greater tendency for self-referencing decision-making in the lives of our young people. The suggested educational response to the trend is that we review our teaching too, so that it is more strongly built around the biblical concept of 'service', one to the other.

Great opportunities, but loss of character

Australian life is inherently more diverse in its ways of life than it used to be when I was a child (some 50 plus years ago). Some of the diversity is easy to celebrate. Food choice has never been greater! Likewise, the opportunity to learn about more distant places from around the globe is as easy as getting to know more of your neighbours or the people at work or school.

If one looks at these and other opportunities for our young people, they are amongst the most privileged in the history of the planet in terms of the amount of choice in how to obtain an education and then earn a living. More and more, youth are gaining higher levels of education and expect to be able to use this education for increasingly greater remuneration.

Yet daily we see the signs of our young people still casting around to be what they would call 'happy'. More young women are getting as drunk as the young men. Just when we think we are making progress with one recreational drug (e. g. smoking cigarettes), another bursts onto the scene (e. g. 'Ice'). Attempted and actual suicide seems resistant to efforts to quell the tragic early loss of life.

A researcher in Australia who investigated whether young people's well-being was improving or not, within very broad contexts, is Richard Eckersley. In the conclusion to one of his papers he noted that:

> I have argued that, notwithstanding all the complexity and uncertainties, the totality of the evidence suggests that fundamental social, cultural, economic and environmental changes in Australia and other Western societies are impacting adversely on young people's health and wellbeing. These changes have made it harder for young people to feel accepted, loved and secure; to know who they are, where they belong, what they want from life, and what is expected of them: in short, to feel life is deeply meaningful and worthwhile.
>
> (Eckersley, 2008, p. 24)

"changes have made it harder for young people to feel accepted, loved and secure; to know who they are, where they belong, what they want from life, and what is expected of them"

These findings about our young also reflect in their confusion or anxiety about the type of social issues that are flying around them – issues of sanctity of life (e.g. abortion, euthanasia); issues of sexuality (e.g. sexual experimentation, homosexual unions, sexual transformation through surgery); issues of sensual experimentation (e.g. recreational drug use, so called); issues of social justice and compassion (e.g. what is our stance in forgiving debt to developing countries, and should we give aid through the tax system); and issues of attitudes to authority (e.g. can we respect our politicians).

Another area of investigation into the lives of our young people is an apparent rise in the public self-centeredness of Western young people. There is a good case to be made that this predisposition has always been there since the Garden of Eden, when Adam and Eve decided to make up their own minds about what was right and what was wrong. However, Twenge and Campbell (2009) described an increase in narcissism because of the apparent over-feeding of the young's self-image. They noted what they saw as a growing aggressive behaviour that can be seen in many aspects of youth society:

> Even apart from the search for fame, narcissism is a significant risk factor for aggression and violent behaviour ... However, narcissists are aggressive exactly because they love themselves so much and believe that their needs take precedence.
>
> (Twenge & Campbell, 2009, p. 196)

One way that some commentators have been trying to understand this 'best and worst of times'

for our young people, is by studying the concept and application of character. James Davison Hunter (2000) undertook a historical overview of the conceptualising of character from a sociological perspective, and attempted to summarise how different approaches to teaching character has had different impacts on young people. He noted that in the 1800s and earlier 1900s:

> … character was always related to an explicitly moral standard of conduct. While the word "character" did not disappear, an alternative vision of the self-emerged. This vision was captured by the word "personality"… The concept of personality reflected a self no longer defined by austerity but by emancipation for the purposes of expression, fulfilment, and gratification. (p. 7)

This shift in orientation of the basis of virtue in Western society, from the mid-1900s on, resulted in an important cultural shift in how we determine what is good for us to do (which is the out-working of character). What is interesting for those who work in schools and with young people, is that Hunter (2000) also traced what happened to how young people were taught about virtue and vices within the invitation made to 'grow in their character'.

The table below summarises his historical overview (Hunter, 2000, pp. 146-147), which is extensive, and based in the American experience.

Hunter's conclusion about our current situation in terms of how we think and teach about character, is that all the major paradigms now are "at root, self-referencing and oriented toward the end of personal well-being" (p. 147).

What does this look like in the everyday language of our times? Hunter describes it as the 'triumph of the therapeutic', where-by ethics have been taken over by psychological subjectivism. Indeed, he notes that the language of 'character' has given way to the language of 'personality'. As someone who was a registered psychologist for 30 years, I noted that one outcome of this dominance of personality theory over a teaching about character, was that our teaching about personhood was reduced to two domains:

a. *Nature* – we are described as being partly

"all the major paradigms now are "at root, self-referencing and oriented toward the end of personal well-being"

Table 1: From moral realism to the death of character – as per Hunter (2000)

Aspect of Character Development	From	To
Content of moral instruction	From the "objective" moral truths of divine scriptures and the laws of Nature	To the conventions of a democratic society, to the subjective values of the individual person
Sources of moral authority	From a transcendent God	To the institutions of the natural order and the scientific paradigms that sustain them, to the choices of subjects
Sanctions	From the institutions and codes of the community	To the sovereign choices of the autonomous individual
Primary institutional location	From the family and local religious congregation and the youth organisations	To the public school and popular culture
Arbiters of moral judgement	From the clergyman	To the psychologist and counsellor
Character of moral pedagogy	From the cultivation of a sense of good and evil through memorization of sacred texts	To a largely emotive deliberation over competing values
Premise of moral education	From the sense that people are, for all their other endearments, sinful and rebellious	To a sense that they are good by nature and only need encouragement
Purpose of moral education	From mastery over the soul in service of God and neighbour	To the training of character to serve the needs of civic life, to the cultivation of personality toward the end of well-being

determined by our genetic predispositions; and

b. *Nurture* – we are described as being partly determined by our social upbringing within our familial and cultural contexts.

There have been countless articles and books written about which one of these two is more dominant in our personality formation in relation to certain aspects of our lives, or social patterns and trends. For example, the 'popular psychology' of our times wants to believe that (a) above is the most dominant in terms of whether we are heterosexual or homosexual. Personal review of this research has assessed it as unable to support this conclusion, for both methodological and philosophical reasons considered later in this discussion.

Here is the core mistake in this debate. These two aspects of our reality about human beings do have a kernel of truth associated with them. But there is a third dimension which used to be recognised. This 'nature vs. nurture' debate, framed with only these two points, completely ignores this third reality.

Yes, we are physical and therefore we are born with certain possibilities and in some areas, probably predispositions, in certain aspects of our lives. As a man of only five feet two inches in height, I was never going to be 'a natural' at the long jump, high jump or hurdles. I was fairly handy at long distance running at one stage, because my big mates tired much more quickly than I.

Likewise, our early years of socialisation do induct us into certain patterns of civil conduct, and styles or patterns of normally relating to others. In my country, we shake hands to greet others. In other countries, they bow, or give a kiss on the cheek.

However, the missing aspect of who we are as human beings is that we are embodied souls. We have the capacity to decide what to attempt to do with our physical attributes and our social upbringing. Human beings have a decision making capacity that can rise above the level of physical instinct and social patterning (I note that it 'can' rise above these—when it does not, and people act like animals, it is a perversion compared to how we are made to live—See 2 Peter 2:12 and Jude 8-10).

Interestingly, this mistaken understanding of who we are as people (our anthropological beliefs) is even being discussed by some atheists. One of the leaders of atheistic philosophy, Thomas Nagel (2012), has explained the limitations of naturalism, defined as the belief that all of life is simply physical matter. Within this framework, explanations of life are therefore nothing but the application of the scientific method to physics and other disciplines within natural science. One of Nagel's conclusions from his exploration is that:

> It would be an advance if the secular theoretical establishment and the contemporary enlightened culture which it dominates, could wean itself of the materialism and Darwinism of the gaps – to adapt one of its own pejorative tags. I have tried to show that this approach is incapable of providing an adequate account, either constitutive or historical, of our universe. (p. 127)

One aspect of the universe that Nagle focuses on is the capacities of human beings that cannot be explained by Neo-Darwinism. He noted that, "Consciousness is the most conspicuous obstacle to a comprehensive naturalism that relies only on the resources of physical science" (p. 35). And that because of this lack:

> [The next problem for naturalism is] thought, reasoning, and evaluation… These are the functions that have enabled us to transcend the perspective of the immediate life-world given to us by our sense and instincts. (p. 71)
>
> … [i.e.] the development of consciousness into an instrument of transcendence that can grasp objective reality and objective value. (p. 85)

"Consciousness is the most conspicuous obstacle to a comprehensive naturalism that relies only on the resources of physical science"

However, at this point of time in the Western world, our educational syllabi are full of Neo-Darwinian ideas of how persons develop, and what determines who we are and how we make decisions, as summarised in points (a) and (b) above. These syllabi also contain the ideas of how to help people who are focussed on self-referencing therapeutic idealism. Check any Australian Government syllabus on Personal Development, or History, and these days, English and the Creative Arts, to see this in action. This is easily accessible educational evidence illustrative of the kind of trends that Hunter (2000) identified.

That is, humankind has moved from understanding ourselves more fully as physical and spiritual beings, to being highly developed animals that look to preserve ourselves and those around us. This shift has been represented in psychology by a movement away from character, to a focus on *personality.* Consequently, we have seen a shift within education away from training in *moral responsibility* towards facilitating *fulfilling of self-oriented goals*.

Another way of viewing this shift in focus is to suggest that our society is struggling with the loss of the concept of sin in the understanding of our social life together. As Professor Emeritus from Yale, Seymour Sarason (1986), noted some time ago, the result of the loss of the divine centre is a loss for

society generally:

> Therefore, one must ask what price has been paid in the substitution of the concepts of morals and values for that of sin as a transgression of divine law?.... I would suggest as have many others, that the price we paid was in the weakening of the sense of interconnectedness among the individual, the collectivity and ultimate purpose and meaning of human existence. (p. 405)

A more recent review of this shift of the basis of moral character – individually and socially – is by Theodore Dalrymple (2015), actually a pen name used by Anthony Daniels. Dalrymple's basic thesis is that each manifestation of psychology from Freud on has (a) overstated their efficacy and (b) has also, critically, helped develop a reduced awareness of and enactment of personal responsibility for our moral decisions and actions. Thus he concludes:

> But the overall effect of psychological thought on human culture and society, I contend, has been overwhelmingly negative because it gives the false impression of greatly increased human self-understanding where it has not been achieved, it encourages the evasion of responsibility by turning subjects into objects where it supposedly takes account of or interests itself in subjective experiences, and it makes shallow the human character because it discourages genuine self-examination and self-knowledge. It is ultimately sentimental and promotes the grossest self-pity, for it makes everyone (apart from scapegoats) victims of their own behaviour. (Dalrymple, 2015, p. 112)

"We must use the power of our imagination to discover signs of the sacred in the ordinary"

Such critical evaluations about psychology generally, and Neo-Darwinism specifically, are not new (See Kline, 1988; O'Hear, 2002; Vitz, 1977; White, 1987). However, these recent ones are focussing on the individual and collective impact of our character, and are suggesting that we as a society need to do something about it, and quickly. Almost inevitably, these analysts and commentators address the role of families, governments and education to improve this situation of the loss of character in the face of increasingly diverse self-focussed options for our young people.

An example of this, from an overtly Christian position, is found in the first of a proposed series of books on academic disciplines from Inter Varsity Press—*Psychology in the Spirit: Contours of a transformation psychology* (Coe & Hall, 2010). In the preface to the series, Moreland and Beckwith described seven reasons that establish the need for bringing our faith back into our academic endeavours. They first noted that:

> In the early centuries of Christianity, the church presented Jesus to unbelievers precisely because he was wiser, more virtuous, more intelligent and more attractive than Aristotle, Plato, Moses or anyone else. (Coe & Hall, 2010, p. 14)

They then proposed reasons why it is critical for the Church, through education in particular, to get back to such a position of Christ being introduced to intellectual endeavour, wherever it can. They ultimately concluded that:

> Christians should do everything they can to gain and teach important and relevant knowledge in their areas of endeavour. At the level appropriate to our station in life, Christians are called to be Christian intellectuals, at home in the world of ideas…. As Christians, our goal is to make Christian ideas relevant to our subject matter appear to be true, beautiful, good and reasonable to increase the ranking of Christian ideas in the culture's plausibility structure. (Coe & Hall, 2010, p.17, 21)

These reflections are similar in scope to other commentators such as P. W. Eaton (2011). He outlined the social history of thought as it relates to the tasks of Christian universities. His description followed the pattern seen in Hunter (whom he quotes a number of times). His challenge is similar to that of Moreland and Beckwith, in calling Christians back into the centre of the Academy in a way that makes truth, in Christ, attractive and engaging again (Titus 2:10).

His particular call, in the tradition of the notable Christian authors Chesterton, McDonald and Sayers, is for Christians to regain a transformed imagination:

> We must use the power of our imagination to discover signs of the sacred in the ordinary – the first step as we go about the challenge of learning to announce the good news of the gospel… In a culture of denial and absence, we need, not so much the tools of apologetics, but to open ourselves to the power of transformed imagination. (Eaton, 2011, p. 107)

Eaton has strong conviction about the impact of transformed imaginations. Quoting Milosz, he makes the claim that:

> *Evil grows and bears fruit… which is understandable, because it has logic and probability on its side and also, of course, strength. … The resistance of tiny kernels of good, to which no-one grants the power of causing far-reaching consequences, is entirely mysterious… Such seeming nothingness not only lasts but contains within itself enormous energy.* (p. 113)

Similar conceptual perceptions are related by Hitchen's in *The rage against God—How atheism led me to faith* (2010, pp. 141-152).

This 'power of little bits of good' is also taken up

by Hunter in a later book, where he describes this as Christian communities (in the *gemeinschaft*, or strongly relational sense) being committed to being a 'faithful presence':

> Against the present realities of our historical moment, it is impossible to say what can actually be accomplished. There are intractable uncertainties that cannot be avoided. Certainly Christians, at their best, will neither create a perfect world nor one that is altogether new; but by enacting shalom and seeking it on behalf of all others through the practice of faithful presence, it is possible, just possible, that they will help to make the world a little bit better.
>
> (Hunter, 2010, p. 286)

David Brooks (2015), in a book that is not explicitly Christian, has similar sentiments. He outlined the shift from the moral realism of the pre-18th century that then found a competitor in moral romanticism. However, Brooks noted that realism fell away completely as the basis for character in the late 1940s and 1950s (pp. 243-245). From this time through to the 1960s, "The self-esteem movement was born. Our modern conversation lives in this romantic vision" (p. 247).

In the face of such a 'Big Me' culture, Brooks says there needs to be a counter-cultural movement to restore balance back into the training of character (he does note, in the spirit of fairness, that the more romantic notions have helped bring compassion to some groups who were missing out previously). But, his concern for now is that the time for "narcissism and self-aggrandisement" (p. 261) cannot go unchecked. Brooks, after doing case studies of a number of significant historical figures who lived prior to this modern conversation (including Augustine), claims society needs to get back to some moral realism. Does that simply mean teaching more Bible in our Christian schools? This discussion concludes with a brief alternative (or complementary) suggestion.

So whither character in our Christian Schools?

So what is a starting point for us in Christian schools when "*we end up epistemologically and linguistically with a moral cosmology that is beyond good and evil?*" (Hunter, 2000, p. 213 – his emphasis). We know that any deep educational change takes time—often, lots of time. Where can we start to check that we do not neglect a full understanding of the richness of character formation that is in God's Word? For example, many schools turn to their Bible or Doctrine or Christian Life Studies classes (See Turnbull, Fyson & Eynard, 2008). Yet such understanding can sometimes, or often, be taught with little imaginative attraction to the young person who is confronted by so much media input that encourages sensuality, transitory partner commitments, travel adventure and the promise of lucrative careers of influence and opulence, as the optimum rewards for their efforts.

Put more simply, we need to consider how we can bring a different conceptual framework to our teaching and learning if we wish to include in our educational vision the 'training in the discipline and instruction of the Lord' (Ephesians 6:4).

A starting point for many schools may be to reflect on what we claim our core goals are in the educating of our students. For example, many Christian schools have something like 'fulfil the student's potential' in their vision or mission statements. This is consistent with the therapeutic strategy that Dalrymple (2015) and others identified. However, as educational communities we need to ask ourselves whether this focus also tends to support the 'admirable evasion of moral responsibility' identified by Dalrymple.

When parents and educators look at this need to bring a stronger basis to the invitation to mature character (or better balance in our character, as some see it—including Brooks, 2015), one different approach can be summarised in the phrase '*learn to serve*'.

Contemporary analysts see that the loss of the divine centre in understanding morality has led to a self-focussed therapeutic approach to personal development. The biblical principle that is evident in passages like 1 Peter 4:10-11 is that we are made to live a different way to this.

In short, the way that we are meant to live is that each person, made in His image, is to be God's representative. The purpose of this role is to extend His 'sanctuary'. Eden was the sanctuary that was supposed to be extended to the whole of God's temple (His Earth), which was His good creation, brought from chaos to order (Gen 1:2; Walton, 2009). However, our self-focus back then, as it is still evidenced today, was to ignore the Creator's intention (His will), and thus dis-order was brought into how we relate to each other, the Earth, and the Creator.

Our task, if we want to respond to the loss of character that results in more chaos and disorder, is to pray as Jesus did—'on Earth as it is in Heaven'. The outworking of such a prayer is to learn to be His representatives to do good (See Titus and Ephesians 2:10), as God has always intended.

We can describe 'doing good' more succinctly as 'service'. We are made to live as 'service agents'. Service is using any capacity for good that we have to look after God's place (His temple). God's place includes His world, right here and now, in every day in every way. All good things come from God (James

> *"look[ing] at this need to bring a stronger basis to the invitation to mature character, … one different approach can be summarised in the phrase 'learn to serve'."*

1:10), and so as we use our good gifts to serve others, we are therefore spreading God's gifting to us—His grace (1 Peter 4:10-11).

It does not matter if we are involved in teaching and learning with five year olds or college students. If we want to teach Biblically, and in doing so attempt to answer one of the critical problems of the loss of individual and communal character of our age, then we will 'teach for students to learn to serve' (See Fyson, 2014). In short, the ways we teach for students to learn to serve will only be limited by our imagination, as suggested by Eaton above.

But even our imaginations need redemption and sanctification. Perhaps learning to serve will help us greatly even with the task of renewing our imaginations, while we "renew our minds" (Romans 12:1-2).

> *"the ways we teach for students to learn to serve will only be limited by our imagination … But even our imaginations need redemption and sanctification."*

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Biographical Note:

Stephen J. Fyson has worked in the helping and teaching professions for over 35 years. He has had the privilege of combining his research into how people relate interpersonally, and what that looks like within community, with his work throughout this time. For the last 30 years, Stephen's focus has been in Christian schooling. He has pursued the themes of belonging, engagement, respect, and the balance of justice and mercy as worship in this context. This has been done with an eye to consider the impact that these relational dynamics have on teaching and learning from a Biblical understanding.

Getting on Board with the STEM Revolution: Two Christian schools' experiences

TEACH[R]

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Abstract

This paper reports on an initial investigation into teachers' perceptions of the process of introducing the integrated teaching of science, technology, engineering and mathematics (STEM) using a cooperative and problem solving approach. The study was conducted at two independent schools in New South Wales and will be ongoing. The initial results indicate that while there has been a positive attitude to the introduction of STEM into the two schools, there is perceived to be a need for additional professional development that will lead to greater teacher confidence, improved attitudes, wider knowledge of the importance of STEM, and more extensive teamwork. There was also found to be a discrepancy in the perceptions of primary and secondary teachers largely due to the structure of the timetable and the disjointed nature of the key learning areas.

Introduction

STEM is an acronym for Science, Technology, Engineering and Mathematics. The push for the teaching of these subjects in schools in an integrated fashion in Australia is following an international trend in education. The future of employment in the western world is predicted to be 'technology heavy', with many of the current employment opportunities for school leavers disappearing, it is therefore becoming vital that from the earliest of ages, students are learning to apply their newly acquired mathematics, science and technology skills in an integrated and cooperative approach.

In this study, the implementation of STEM in two independent K-12 schools is being tracked in order to report on the perceptions teachers have of STEM, and the implementation processes in their teaching milieu.

Background

In synthesising and then organising the research literature dealing with STEM education, this review has been constructed around the American National Research Council's (Shavelson & Towne, 2002, p. 99) recommendations that in regard to the nexus between science education and the overall research process in the STEM area, three key questions need to be addressed: What is happening? Is there a systematic effect? And why or how is it happening? These questions continue to frame American National Research Council's publications, both in the United States and its Australian counterpart, the Australian Research Council. However, in our review of the literature we came to realize, and perhaps

> *"it is … vital that from the earliest of ages, students are learning to apply … mathematics, science and technology skills in an integrated and cooperative approach."*

not unsurprisingly, that the three previous questions and the entire current STEM movement arose out of, and is still embedded in a "consequence of history" (Charlton 2009, p. 70) which has "come to shape the modern world" (Chesky and Wolfmeyer 2015, p. 5). Hence, this review begins with the historical context of the STEM movement followed by the three critical questions cited previously. It should be noted that our first two references, although dealing with STEM components are actually embedded in discreet discussions on individual aspects. As will be discussed later, the pedagogic connectivity between the STEM components is still an ideal and not a reality, which surfaces in the current debates underpinning the implementation of STEM in schools.

A potted history

Coined in 1990 as a marketing tool in the United States (Sanders, 2015), STEM education wherever adopted as terminology by politicians and their educational agencies, represents the supposed melding of science, technology, engineering and mathematics subjects under the one acronym. STEM, and the axiological metaphor of importance and progress it has come to represent (Bowers, 1990), has seemingly not only become a hot topic of debate and research, but a top educational priority in all levels of educational curricula internationally. Indeed, for many governments across the globe STEM "has become a national priority" (Chen 2014, p. 1). The Australian government has made this very clear in a recent consultation paper.

> The Australian Government is developing a comprehensive science policy that will be underpinned by a strategy for a science nation in which scientific thinking and applied science can be found in all sectors of our economy.
>
> This policy will be made up of several components. One important element of this broad policy will be the development of our capacity in science, technology, engineering and mathematics – STEM.
>
> (Commonwealth Government, 2015, p. 8)

In reality this is not a new agenda in Australia or the rest of the world, as numerous early twentieth century publications, technological innovations throughout the industrial revolution, and two world wars most certainly provided kick-starts to the supposed integration of STEM disciplines and ensuing educational reforms. However, while perhaps Americo-centric in outlook, it would appear that the general remarks amongst some researchers and commentators is that the current view of STEM education became a concentrated central integrative focus, far more than previously, subsequent to the Russian-American competitive shift into rocket science and space exploration in the middle of the last century. As Woodruff (2013) states, STEM is actually a "60-year-long runway of educational reform." The foundations of this still incomplete 'runway' arguably began with the Russian launching of Sputnik in 1957, and the ensuing realisation by the American government that the United States was behind in technological understanding and application.

While Meadows (2012) argues that the argument for STEM education actually commenced with Benjamin Franklin's proposed "Education of Youth Reforms" in the colonial era of the United States, certainly it would appear that the space race, that began in the late 1950s and gained increased momentum in the 1960s, catapulted the need for STEM education into both public and government consciousness "across the globe" (Edge in Jasanoff, Markle, Petersen and Pinch 2001, p. 7). Ensuing Apollo missions and space shuttle launches have been termed the Golden Age of science, or rather the amalgamation of technology, engineering and computer science. The instigator of this STEM emphasis, in reality an economic and political shift, was John Fitzgerald Kennedy who has been attributed with the catch cry of "a rising tide raises all boats" (Kelly, Baek, Lesh & Bannan-Ritland 2008, p. 3). While at the highest echelons of this integration the 'STEM boats' have risen to the highest imaginative challenges of humankind, at the grass roots level of schools and classrooms, the boats are taking water as there are issues still to be overcome. As Clem and Junco (2015, p. 514) bluntly state, "we have barely begun to scratch the surface of understanding how we can use new technologies to best support student learning, engagement, and motivation."

"While … the 'STEM boats' have risen to highest imaginative challenges of humankind, at the grass roots level of schools and classrooms, the boats are taking water"

What is happening?

The mid twentieth century United States push to reach the moon appears to have simultaneously dovetailed with an overall negative public perception regarding education in America. Summarising the beliefs of the early 'back to basics' movement in this era, Lowyck (2014, p. 4) writes that at this time "Western societies aimed at improving education quality especially in mathematics and science to compensate for the supposed failure of the progressive education movement and teachers' deficient classroom behaviors." The coils of history never entirely disappear in education, and the belief that all of the school board microcosms across the country had failed their students in the 1960s, is still alive and well in the United States, and resurfacing periodically in Australia as a critique of earlier

national education. However, the successful NASA launches ending with moon landings, promoted the possibility that STEM subjects at all levels of education were the answer to this supposed educational malaise and an answer to the supposed failure of the progressive education movement. It was also mooted that STEM could begin new ways and means of managing classrooms. Unfortunately, this has still not been broadly manifested in classrooms both here and in the United States (Matthews, 2007).

In the Australian context, the American technological advances in the 1960s further reinforced the overall social hope and positive economic outlook that followed the cessation of World War Two. The progressive education viewpoints were just beginning to gain traction in the Australian milieu as state and federal education policies began to move the separate state systems as a 'whole' out of outmoded ideologies that had dominated the country for decades (Seddon and Angus, 2000). Notwithstanding the global social upheavals of the 1960s, generally within the ensuing decades, a 'social imaginary' of optimism appeared to develop globally, engendering an even more positive economic outlook. The post war 'Baby Boomer' generations, in at least those deemed to be First World countries, were born into, and came to expect economic growth and stability. This outlook was also coupled with unprecedented access to education, and possibilities previously unimagined.

It would appear that for the most part, the general belief that economic growth was coupled with industrial STEM development, was the worldwide mantra in governments and their educational systems. The main issues with this perspective was that the elements of STEM were still, by and large, stand alone research and industrial disciplines. Gradually the climate of STEM awareness and debate shifted to one of economics and the need for research in science to begin to bear fruit in order to gain returns on the money invested—making it a profitable enterprise. However, as Bijker, Hughes, and Pinch (2012) note, in the late 1980s, technology, and in particular computer technology, began to claim dominance in the sciences and science research. It should be noted however, that even at this time, these seminal researchers in this field were warning that in regard to the components of STEM, "integration of this multiple expertise in turn implies complex organisation" (Bijker, Hughes, & Pinch, 2012, p. 225). Into this milieu of educational potentiality, one that Seixas (1993) viewed as possibly becoming 'community inquiry', the STEM focus in Australia began to become somewhat realised in that computer education was introduced into many public schools, and the research into its application and impact was born. However, in this shift and apparent conjoining of disciplines the concept of multidisciplinary or interdisciplinary involvement was far from the usual case in most school levels and, in particular, in tertiary institutions.

In the intervening decades since the late 1980s warning by Bijker et al. (2012), and Bork's (1987) comment that technology would produce an educational and cultural revolution, this conjoining of the STEM elements appears to have not reached an educational fruition. Despite all of the pervasive intrusion of STEM into all aspects of current daily lives, the means and modes of implementing and teaching STEM in education systems appears to have stalled across the globe. While there appears to be pockets of sound teaching, generally it seems this is not the norm in most educational systems. It would appear that generally teachers have the desire to embark on integrating STEM as a holistic package into their teaching, and in many cases have the actual technology hardware and software to do so. The root cause of this dilemma appears to be the lack of professional development. Indeed, Benson and Lunt's (2011) entire book is devoted to the global issues in teaching and implementing STEM, and their comments in this text appear to be typical of an international dilemma.

> The teachers indicated that they were unsure as to how they could incorporate investigating and evaluating products into an Early Years curriculum – important activities to help children to look critically at the designed and made world around them.
>
> (Benson and Treleven 2011, p. 137)

"Despite all of the pervasive intrusion of STEM into … daily lives, the means and modes of implementing and teaching STEM in education systems appears to have stalled across the globe."

Urban and Falvo (2016) are even more forthright in their evaluation of how STEM is being taught in schools believing the critical issue is that "too many teachers at all levels are technology phobic, poorly adept, or simply out-of-touch with the pervasiveness and essentiality of technology to the classroom environment" (2016, p. xxii). Although it is touted we all live in the era of technology, the overall consensus arising out of the research emanating from the country that gave birth to the acronym and technology focus is that STEM is viewed by educators at all levels as being difficult to understand and manage. More importantly it has been deemed inaccessible for many students, and as Langen and Dekker (2005) have come to believe, mainly viewed as being for males only.

Furthermore, in discussions arising out educational research it has been suggested that most of the children in both primary and high school do not have a strong enough science and mathematics background for further study. The NRC

(2011) have stated outright "there are many reasons to be concerned about the state of STEM learning in the United States, in the face of research that suggests that many students are not prepared for the demands of today's economy and the economy of the future."

Is there a systematic effect?

It should be clear that we agree with a belief that indeed there is some form of systemic STEM related effect, that just over three decades ago, Bowden (1995) termed 'confusion'. While the schooling systems themselves appear not to be the key inhibitor, it would seem one of the key fault lines lie within governmental educational systems, by not planning and providing sufficient professional development resources at all levels. While there is no definitive research into the critical points, most certainly the 'knock on effect' into the tertiary and workplace scenarios is that in the American experience, there are critical "issues of attrition post secondary, where more than half of freshmen who declared STEM majors at the start of college, left these fields before graduation" (Chen and Soldner, 2013, p. 2). There also appears to be an ongoing issue of university preparation since "more than half of STEM bachelor's degree recipients switched to non-STEM fields when they entered graduate school or the labor market" (Chen and Soldner, 2013, p. 2). Chen (2014) is very forthright in her criticism, as her research into college attrition clearly indicates that "many STEM leavers were actually high-performing students who might have made valuable additions to the STEM workforce had they stayed in STEM fields" (p. 6). In the Australian context, it is clear that this lack of school leavers and tertiary graduates in the STEM disciplines is also a concern. Backed by all Australian Ministers of Education, the Education Council of Australia (2015) released a national strategy for the period 2016-2026. The concern with STEM at the systemic level is blatantly clear within a statement such as:

> Reversing the trends in STEM performance will take time and effort across the community. Building young people's engagement in STEM is biggerthan schools and what happens in the classroom. Education systems alone cannot overcome the pervading cultural norm that it is acceptable to be 'bad at maths' or 'not a numbers person'.
>
> The purpose of the strategy is to build on a range of reforms and activities already underway. It aims to better coordinate and target this effort and sharpen the focus on the key areas where collaborative action will deliver improvements to STEM education.
>
> (Education Council of Australia 2015, p. 2)

As unpacked by Cavanagh (2009), the concern that STEM has not matured in the school system in the United States has reached the highest political levels, with President Obama making it very clear that technologically speaking, the country as a whole and its underpinning educational systems have fallen dramatically from the lofty levels of innovation in previous decades. In what appears to be a parallel to the national agenda announced by President Kennedy, Obama has announced the goal of once again reaching the top international status in STEM education in the next decade. This would appear to be an extremely lofty ideal for Bowden (2001, p. 64) has likened the state of play in the entire STEM research-practice nexus to a "methodological confusion, symptomatic of adolescent identity crisis."

It is also becoming increasingly clear that industry is very concerned about the attrition of possible STEM graduates. Machi (2009) notes that Fortune 500 leaders believe that the U.S., unlike other countries, has lost its direction in STEM education and in STEM fields as a whole. Industrial cohorts and leaders in Australia are also concerned about the deficits found in this particular educational arena. Similar to calls of dismay in the United States, the Australian Industry Group (2015) released a white paper in which Ennis Wilcox in his executive summary made it clear that:

> The pipeline of STEM skills to the workforce remains perilous. In the school system participation in science and advanced mathematics is in decline and our students underperform in all the major international studies.
>
> In the tertiary education sector, participation in STEM-related disciplines is in decline in absolute terms and in comparison with other comparable nations. Participation is also low in the VET sector in all STEM areas except engineering.
>
> (Wilcox, 2015, p. 5)

And why or how is it happening?

It is perhaps stating the obvious to claim that there is no 'silver bullet' that will answer the apparent STEM issues in education and the industrial linkages. However, what is becoming increasingly clear in the literature is that there is a perception that there are significant problems in the entire educational platforms in Australia and elsewhere. As Urban and Falvo (2016, p. xxii) state, "too many teachers at all levels are technology phobic, poorly adept, or simply out-of-touch with the pervasiveness and essentiality of technology to the classroom environment." Previously, Matthews, (2007) had reached a similar conclusion believing that teachers were simply not qualified.

"too many teachers at all levels are technology phobic, poorly adept, or simply out-of-touch with the pervasiveness and essentiality of technology to the classroom environment"

It is unfortunate that the last comment is typical

of the comments and ensuing perceptions that frame most of the literature dealing with STEM issues and its implementation in schools and universities. Whatever the case, it is increasingly clear that there "is a need to reconstruct the theoretical framework for educational technology, and there is an associated need to conceptualize its academic scope and purpose" (Spector, Merrill and Bishop 2014, p. x)

Research Purpose

The purpose of this research is to track the introduction and development of STEM based learning at two Christian schools in NSW over an extending period. This paper contains a report on the first stage of this longitudinal study into the developing attitudes of teachers towards the introduction of STEM into their schools.

Method

This multiple case study (Yin, 2015) has involved and will continue to involve collecting a variety of data. As a qualitative study (Creswell, 2014) the investigation draws on several data sources to create a mosaic of the challenges and high points in the process of introducing STEM into the school program.

The project also aims to embark on a longitudinal approach employing action research in order to provide feed back of updated awareness to the schools involved. Thus, it is also "aiming at an increased understanding of a given social situation, primarily applicable for the understanding of change processes in social systems and undertaken within a mutually acceptable ethical framework." (Hult & Lennung, 2007, p. 241.)

The types of data collected in this study include STEM related information derived from:

- Staff meeting and other meeting minutes.
- Anecdotal journaling, including notes and jottings of those responsible for implementation within the schools.
- Internal surveys of staff at the schools.
- Schedules of inservice courses provided over the time period.
- Summaries of in-service courses provided for staff by outsourced agencies.
- Open narrative interviews with administration, implementation team leaders and a sample of teachers.

Not all of these data sources will be reported on in this preliminary paper. Interviews will be the main source of data in this paper, but as the project continues into the future and more data types are collected, they will be reported in future articles.

All data except for the interviews will be part of the internal quality control processes of the school and so will serve a dual purpose.

For this first stage of the study, the teachers at each school charged with the responsibility of developing this program in their school were interviewed. A further three teachers were then selected from each of the primary and secondary departments in each school. The interview data was then coded (Cresswell, 2014) and themes were extracted.

Each year feedback will be given to the school in the form of a report that contains an analysis of all data with recommendations for the next 'action research' phase.

Findings and discussion

School 1 started their journey with STEM through the enthusiasm generated by senior administration who took it upon themselves to participate in high level professional development. It was intended that the information and skills they acquired would consequently be dissipated down through the administrative levels to the teachers. School 2 entered the STEM initiative largely through one passionate technology teacher who worked hard to generate interest and enthusiasm in both the administration and teachers. This teacher anticipated that their personal initial drive would provide modelling that would generate a pervasive impetus throughout the school.

Through the 'coding process' (Creswell, 2014) of teacher interviews from both schools, the same seven themes were revealed: integration of learning, passion for science as a discipline, lack of knowledge, training, teamwork, attitude and structure of the school. It is clear that even though the two schools have been introduced to STEM in different ways, the issues that they face in this process are the same.

The following paragraphs discuss each of these separated themes and associated issues.

Integration of learning

There appears to be a largely tacit feeling from both schools that integration is the approach to take and the most appropriate pedagogical trajectory. Resistance to it however revolves around issues such as the absence of curricula driven incentives from education authorities, given that the Australian Curriculum is still seen by both schools as predominantly consisting of stand-alone key learning areas. While primary teachers have the flexibility to use the curriculum documents more creatively to integrate the learning areas, secondary teachers see a mixed message coming from education authorities.

"Resistance to it [STEM integration] however revolves around issues such as the absence of curricula driven incentives from education authorities"

> *There are a few distinct attitudes. One is STEM is a great idea – let's do it, another one is this is a fad that will pass and the third is how do I cover all my outcomes in each KLA and do STEM as well.*

On one hand they are seeing grants given for STEM initiatives, but on the other hand they are held to very specific learning outcomes in individualised curricula leading to BOSTES set examinations. They are questioning as to whether education authorities are serious about STEM or whether they too are waiting to see if it is a passing fad. As stated by one teacher, "Some think that this is a fly-in/fly-out initiative – one more acronym to deal with."

Passion for science as a discipline

There is evidence from this study of the historically recurring competition between the disciplines of science/mathematics and the humanities. Interestingly, in this instance there is data to support this perception of the situation from primary teachers where normally it is observed as professional manoeuvring at the secondary level. A primary teacher highlighted:

> I'm more into the humanities side of things and think that technology can be a bit of a gimmick at times. A lot of money has been spent on technology play things that spend a lot of time on the shelf when the money could have been spent on basic literacy resources that are so badly needed.

A primary teacher believed that to be passionate about STEM, teachers need to be passionate about science,

> (STEM) comes undone because a lot of teachers here are not driven by science.

Lack of knowledge and training

While repeated in different ways, there was a majority view amongst the teachers in this project, expressed as a concern that staff members each had a different idea of what STEM is. As a corollary, they also believed that more training was needed to make sure all teachers knew what STEM is, why it is important and how it should be implemented in each school. There was also a clear viewpoint added that administration needs to clearly spell these aspects out to the staff as a coherent and integrated framework of praxis.

While lack of knowledge was a recurring theme at both schools from teachers at primary and secondary level, one teacher was very animated with this theme stating,

> It hasn't been told to the staff exactly what STEM is and why this school needs to run with it, and the clientele haven't been told how this will benefit the specific types of kids we have here.

Teamwork

It is interesting that teachers spoke very positively about the impact STEM can have on teamwork. For example, one teacher said,

> A shared and enunciated vision is important. People may be excited about the program but for different reasons.

It was also pointed out several times that this applied to the teamwork of students, who were learning from the earliest years of schooling the value of cooperative learning, but also applied to teamwork among the staff who were learning to work together within disciplines, but needed to also reach out across disciplines. A primary teacher asserted,

> *Even in kindy the kids are learning to work together when given a challenge.*

Attitude

Interestingly, there was a variation in attitudes regarding the efficacy of STEM. Attitudes ranged from very positive to cynical, with negative attitudes that emanated from fear, lack of confidence, lack of time, lack of informed knowledge or suspicion of another fad. Perhaps more worrying, were the rationales underpinning this variability. A secondary teacher responded,

> There are a few distinct attitudes. One is STEM is a great idea – let's do it, another one is this is a fad that will pass, and the third is how do I cover all my outcomes in each KLA and do STEM as well.

The latter attitude of confused complexity links to earlier expressions of inadequate preparation in pedagogy.

Structure of the school

The workplace structures of the school were perceived as a significant issue, more so by secondary teachers than primary teachers. Secondary teachers who are passionate about STEM do not believe that curriculum, timetables or teaching loads need to be a major hurdle. One secondary teacher claimed,

> Timetable is always said to be an issue but if there is a will it could be done.

They believed that important steps forward can be taken within existing budgets, timetables and teaching loads. There was an overall perception amongst the passionate that all that is needed is for teachers to rethink and step out of the confines of a traditional secondary structure. However the secondary teachers who are passionate about

STEM are in a minority.

Primary teachers however recognise that they have the flexibility to work STEM into their programs while meeting the outcomes for each key learning area. In general, these teachers appear to need to grow into greater confidence through systemic support and choosing to take ownership for STEM as part of their program rather than it being an 'add-on' organised by a STEM champion in their school.

Future research directions or recommendations

This research has been designed with teacher perceptions of the introduction of STEM into their schools as the focus. This is a longitudinal study that will keep collecting data as it tracks changing attitudes to STEM and changing ways of applying STEM in the schools.

The report generated from this study and provided to the schools recommends that the most vital factor in generating ownership and enthusiasm for STEM in these schools is ongoing professional development that is open and honest about the benefits and blockages to successful STEM implementation. The professional development needs to specifically emphasise:

- The importance of the integration of learning areas and its role in providing differentiation of learning for specific individuals.
- That teachers need not fear STEM or have all the answers to the challenges given to students. The idea is to challenge students to use whatever means they have at their disposal to find their own potentially unique solutions.
- That teamwork is vital at teacher/ administrator level for STEM to succeed.
- That flexibility in school structure including timetabling at secondary level is necessary and possible.

Conclusion

It seems that positive and negative opinions regarding STEM within the focus of educational communities, as expressed by the respondents in this investigation emerged as equal thematic components in this initial research agenda. This outcome appears to have many contributing factors including: mixed messages from government sectors that provide funding for STEM activities but do not show full commitment through syllabus inclusions; lack of sound strategic information flowing through to teachers; consequently teachers fearing that they may not be capable of successful implementation; and persisting fear of change.

Although the two schools that participated in this study approached the introduction of STEM from different perspectives, perhaps if both address these shared limiting factors they may move forward in a collegial and more strategic approach. Despite the hesitancy, fear and numerous roadblocks, the goodwill from the staff at both schools could be linked and enabled within a collaboration to provide a more effective pedagogical framework potentially expressed in their individual environments.

> *"teachers … need to grow into greater confidence through systemic support and choosing to take ownership for STEM as part of their program rather than it being an 'add- on'"*

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Caffeine consumption among students attending Christian schools in Australia and its relationship to classroom behaviour and academic performance

TEACH[R]

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Key words: Adolescents, Caffeine, Classroom Behaviour, Academic Performance

Abstract

Caffeinated drinks have become increasingly popular among secondary students in Australia. A total of 949 students in years eight to eleven from 11 Christian schools completed a survey questioning their use of caffeinated drinks, their classroom behaviour and academic performance. The most popular drinks were found to be the carbonated cola/coca, cola/pepsi. Students consumed other caffeinated drinks such as Red Bull, Mother, V and similar products to a lesser extent. The drinks providing maximal delivery of caffeine included iced coffee, cappuccino and plunger coffee. Caffeine use ranged from a majority of students who exhibited low or zero caffeine consumption through to a small group whose weekly consumption reached toward 2 g of caffeine (6 – 8 cups per week). Significant relationships were found between weekly caffeine consumption and self-reported measures of Classroom Behaviour and Academic Performance.

Introduction

Caffeine products are a growing segment of the current marketplace (Gunja & Brown, 2012). The consumption of these products is unregulated and they are finding wider use, particularly caffeinated soft drinks, among children and teenagers (Beckford, Grimes and Riddell, 2015). Indeed, Ludden & Wolfson (2010, p.330) suggest that "Caffeinated soft drinks are a part of youth culture." However very little is known about how its use is

> *"The consumption of these products is unregulated and they are finding wider use, particularly caffeinated soft drinks, among children and teenagers"*

related to adolescent sleep, mood and academic performance (Ludden & Wolfson, 2010). Energy drinks, containing considerable concentrations of caffeine, have been marketed to adolescents with claims of increasing energy and mental alertness (Simon & Mosher, 2007); however, recent studies have found high levels of energy drink consumption amongst adolescents. For example, an Australian based nutritional supplements focussed study (O'Dea, 2003) reported 42.3% of the sample of year 7-11 students from a government school had consumed energy drinks over the past two weeks. Costa, Hayley and Miller (2016) report that from their sample of Australian 12-18-year-olds 36% had exceeded the recommended two standard energy drinks /day, and 56% of consumers had experienced negative physiological health effects following energy drink consumption.

> *"moderate doses of caffeine do not appear to have any influence on complex cognition nor do they appear to have a positive influence on mood"*

A review of the caffeine study literature suggests a need for further Australian based adolescent caffeine consumption studies as there is limited research relating to Australian childhood and adolescent caffeine consumption in general (Costa, Hayley and Miller, 2016). Also, the relationship between caffeine consumption and student academic factors needs to be explored. The current study is designed to gain data, within an Australian context, relating to the following questions:

1. What are the levels of adolescent caffeine consumption?
2. What are the sources of caffeine for adolescents'?
3. What are the associations between adolescents' caffeine consumption and student academic factors?

Firstly, this paper briefly describes the history of caffeine use and its effects when ingested into the human body. It also provides information about the caffeine content of a selection of drinks freely available in the Australian market and some confectionary products finding their way to Australia from the United States of America. Secondly, this paper reports on information obtained from nearly 1,000 Australian students enrolled in Christian schools from Brisbane to Perth, about their use of caffeinated drinks and their self-reported academic school behaviour. Finally, this paper explores possible associations between caffeine consumption and school-level academic factors.

Caffeine: History and Chemistry

Caffeine is a psychoactive alkaloid that, when ingested by human beings, increases alertness. It is naturally found in a range of plants including tea leaves, the cocoa bean, the kola nut and the coffee bean. The molecule of caffeine is soluble in boiling water and therefore hot drinks have been the usual means by which people have ingested the slightly bitter-tasting alkaloid. Caffeine is quickly absorbed into the body and, when in sufficient quantity, its effects are perceptible within 15 to 20 minutes of ingestion. The half-life period of caffeine in the human body is variable and appears to lie between three and six hours.

The effect of low-moderate, doses of caffeine

Caffeine acts as a stimulant, and even in low doses (from 30 mg) it will decrease the perception of fatigue and raise the level of alertness (Lieberman, Tharion, Shukitt-Hale, Speckman & Tulley, 2002; Smith, 2002; Winston, Hardwick & Jaberi, 2005). Even though caffeine has the potential to raise the level of arousal, it does not appear to effect sensory perception in any way (Smith, 2002). Caffeine acts as a diuretic and raises blood pressure (Winston, Hardwick & Jaberi, 2005). Since moderate doses of caffeine raise the general level of arousal such doses have been found to improve performance on tasks dependent upon alertness such as simulated driving (Smith, 2002) and sentry duty (Lieberman, Tharion, Shukitt-Hale, Speckman & Tulley, 2002). However moderate doses of caffeine (less than 100 mg) do not appear to have any influence on complex cognition nor do they appear to have a positive influence on mood (Smith, 2002).

Detrimental effects of caffeine

Studies in which large doses of caffeine were administered to experimental participants indicated a range of detrimental effects caused by caffeine. These dosages exceeded 2 mg/kg of body weight and therefore involved doses of in excess of 150 mg and some reached levels of 6 mg/kg of body weight. In other words, they involved instant doses of up to 600 mg of caffeine (Smith, 2002). Studies of this nature found that large doses of caffeine were related to a number of resultant conditions: perceptions of 'jitteriness'; degrees of arousal that made sleep most unlikely if not impossible (Clark and Landolt, 2016); the onset of feelings of nervousness and agitation; and increased feelings of stress and anxiety (Nawrot, Jordan, Eastwood, Rotstein, Hugenholtz & Feeley, 2003; Smith, 2002; Winston, Hardwick & Jaberi, 2005). These studies indicated that caffeine was the causal agent, for the symptoms arose after the ingestion of caffeine and they abated as the caffeine was metabolised.

Further studies have indicated a correlational link between caffeine and other situations. Prolonged heavy use of caffeine correlates with

persistent sleeping disorders, eating disorders, perceptions of stress, anxiety disorder and depression (Winston, Hardwick & Jaberi, 2005). One could mount an argument that prolonged use of caffeine is related to insomnia. However, such arguments become tenuous when attempting to link caffeine use with eating disorders and depression. It could be that individuals resort to caffeine use in order to ameliorate an otherwise stressful condition.

When ingested in large quantities, caffeine is toxic. Gunja and Brown (2012) reviewed data gathered by the New South Wales Poisons Information Centre (NSWPIC) over a six-year period ending in 2010. They located 297 hospital reports of caffeine toxicity related to ingestion of caffeine through 'energy drinks'. Over this period the annual trend was sharply upward (12 reports in 2004 to 65 in 2010). The reported symptoms of caffeine toxicity included: palpitations, agitation, tremors, gastrointestinal upset, hallucinations, seizures and cardiac arrhythmia. These individuals reported sequentially drinking from three to eight energy drinks. This equates to a range of caffeine ingestion from 225 mg to in excess of 1000 mg (see Table 1). Of the 297 cases, 50 had co-ingested alcohol. Mixing alcohol and caffeine products is an increasing behaviour among American college students (Malinauskas, Aeby, Overton, Carpenter-Aeby & Barber-Heidal, 2007).

'Safe' and 'dangerous' levels of caffeine consumption

Caffeine is a widely used substance and research papers tip-toe around issues of 'safe' and 'unsafe' levels of caffeine use. Doses of 150 mg and upward have been placed in the category of 'high' caffeine use (Smith, 2002). Research dealing with US SEAL teams (super-fit individuals who are prepared to risk life and limb) indicates that maximal functional alertness is achieved by doses of caffeine that do not exceed 200 mg (Lieberman, Tharion, Shukitt-Hale, Speckman & Tulley, 2002). However, it must be acknowledged that use of caffeine products is a world-wide behaviour and that many of these users do so with relative safety. Even so, individuals with existing health conditions need to be wary of the use of caffeine products. Gunja and Brown (2012) point out that as little as 50 mg of caffeine can induce tachycardia and agitation in susceptible individuals. In weighing all this information, it does seem that a single cup of coffee per day (around 100 mg/day) may be a relatively 'safe' practice for healthy adults. However, daily doses that exceed 150 mg may be moving into the regions of risk and doses that exceed 200 mg per day could be considered inadvisable.

Table 1: Caffeine content in commonly available drinks

Drink Type	mg/100 ml of fluid
Coffees – Standard Volumes vary from 250 – 400 ml	
Brewed coffee	45
Espresso Coffee	173
Instant coffee	24
Slow extraction (Drip)	61
Plunger extraction	200
McDonalds standard coffee	31
McDonalds iced coffee	42
Starbucks Frappuccino	32
Starbucks Grande Caffe Americano	48
Starbucks Grande Caffe Latte	32
Starbucks Grande Cappuccino	32
Starbucks Mocha	37
Starbucks Grande Coffee	70
Starbucks Iced Espresso	32
Starbucks Short Coffee	76
Starbucks Tall Caffe Americano	42
Starbucks Tall Coffee	76
Energy Drinks – Standard Volumes Vary from 250 – 500 ml	
28 Energy	32
B63 Energy	32
Battery Energy	32
Battery Juiced Energy	32
Big Black V	31
Big Cock	30
BLU	32
Bomba	30
Buzz Monkey	32
Demon	32
Monster	32
Mother	32
No Fear	33

> *"a single cup of coffee per day (around 100 mg/day) may be a relatively 'safe' practice for healthy adults … doses that exceed 150 mg may be moving into the regions of risk"*

Drink Type	mg/100 ml of fluid
Octane	33
Pure Bio Energy	32
Red Bull	32
Rock Star Super	50
Energy 'Shots' – Standard volumes vary from 60 – 80 ml	
6 Hour Power	208
Ammo Energy Shot	578
Demon Energy	333
Coffee Nespresso	163
NOS Energy Shot	416
Reckless Energy Shot	178
V Pocket Rocket	266
Carbonated & Caffeinated Standard volumes vary from 300 – 500 ml	
Coke – Blak	19
Coke – Classic	10
Coke – Zero	10
Coke – Diet	13
Pepsi – Diet	10
Pepsi – Max	19
Pepsi – Cola	11
Mountain Dew	15

> *"small volume 'shots' … three mini-cans consumed consecutively can deliver in excess of half a gram (500mg) of caffeine in a single episode"*

The situation for children could be quite different. While moderate caffeine use (400mgm or 4-5 cups per day) is not generally associated with negative effects by the US Food and Drug Administration (FDA, 2013, para. 11) and the American Medical Association (MedlinePlus, 2015, para.13), this classification is largely based on studies considering adults. In fact, very little research has been conducted on children and adolescents (Temple, 2009). In these cases, smaller body weight means that caffeine doses must be limited. Certainly, it is inadvisable for children with attention deficits to use caffeine products (Smith, 2002). However, for the average healthy older child and young teen, an occasional 300 ml serving of caffeinated carbonated drink (less than 40 mg of caffeine) would not normally be harmful.

Caffeine in the marketplace

During the past century, there has been an expansion in the range of products that include caffeine. Over the past two decades, there has been an exponential increase in the range of caffeinated products. These include cold drinks, candies, gums, ice creams, yoghurts, powders and tablets. The so-called 'energy drinks' are marketed as products that improve performance, endurance and concentration (Gunja & Brown, 2012). Tables 1 and 2 provide an overview of these delivery mechanisms along with estimates of caffeine content. Information provided in these tables has been summarised from sources such as Energy Fiend (2012 a; 2012 b), McCusker, Goldberger and Cone (2006) and Food Standards - FSANZ (2011). Table 1 indicates that drinks of 300 to 500 ml of carbonated and caffeinated soft drink will deliver around 30 to 70 mg of caffeine and the average cup of coffee (around 200 ml) will deliver from 50 to 150 mg of caffeine. However, some extraction processes produce coffees (e.g. plunger coffee, espresso, slow extraction and some Starbucks products – Grande, Short and Tall) capable of supplying in excess of 150 mg of caffeine in a single episode. In addition, some of the energy drinks such as Mother, Demon and Red Bull are marketed in cans with volumes of up to 500 ml.

Again, these latter large volumes are capable of delivering quantities of caffeine in excess of 150 mg per can. However, it is the small volume 'shots' that really have high concentrations of caffeine. Although the quantities within 'shots' are small (60 to 80 ml per mini-can), the concentration is such that three mini-cans consumed consecutively can deliver in excess of half a gram (500mg) of caffeine in a single episode. In addition, some of the candies, powders and tablets can easily deliver in excess of 150 mg of caffeine.

Research method

Data was collected for the 'Caffeine study' through the administration of an anonymous questionnaire to almost 1,000 students from twelve Christian secondary schools across Australia. These students came from years 9, 10 and 11. The questionnaire included a demographic section in which information including age, sex, class and postcode was sought. A list of all caffeinated drinks available in Australia with marketed quantities was provided to the respondents against a numbered code. Respondents were asked to use the code to

Table 2: Caffeine content in candy, foods, powders and tablets

Delivery Mechanism	Type	Caffeine (mg)	Serve
Forever fit caffeine tablets	Tablet	200	Per tablet
Allen Energy Jerky	Pkt	110	Strip
Alka-Seltzer Wake-up Call	Tablet	65	Per tablet
AmP Energy Gum	Gum	40	Per piece
Baking Chocolate	Squares	23	Per square
Bang!! IceCream	Icecream	125	Per scoop
Bolt 260	Tablet	110	Per tablet
Butterfinger Buz	Candy	80	Per packet
Buzz Bites Chocolate Chews	Candy	100	Per chew
Caffeinated Brownies	Brownies	122	Per brownie
Choco Mallows	Candy	100	Per piece
Hershey's Cocoa Powder		8.4	Per tablespoon
Coffee Mallows	Candy	200	Per piece
Crackheads	Candy	200	Per piece
Crackheads 2	Candy	600	Per piece
Dannon Coffee Yogurt	Yogurt	36	Per tub
Ed Hardy Chocolate Rocks	Candy	600	Per box
FireStar Energy Booster	Sachets	200	Per sachet
Foosh Energy Mints	Candy	100	Per mint
Häagen-Dazs Coffee Icecream	Icecream	48	Per cup
Hero Energy Mints	Candy	82	Per mint
Jaya Mallows	Candy	280	Per piece
Extreme Sports Jelly Bean	Candy	50	Per 130g
Lightning Rods	Candy	60	Per rod
Milk Chocolate	Candy	20	Per 100g
Mocca Mallows	Candy	200	Per piece
Magnum Tablets	Tablet	200	Per tablet
Starbucks Coffee Icecream	Icecream	60	Per cup
Stay Alert gum	Gum	100	Per piece
Turbo Truffles	Candy	150	Per truffle

"While it is important to understand the health impacts of caffeine, it is of interest to consider the impact that caffeine consumption has on academic performance at school."

indicate their consumption of quantities of specific caffeinated drinks against morning, afternoon and evening time slots as a kind of diary for the previous seven days.

While it is important to understand the health impacts of caffeine, it is of interest to consider the impact that caffeine consumption has on academic performance at school. To this end, two academically oriented self-reported scales were generated in the present study to obtain some understanding of student factors that may influence their academic success. Firstly, their behaviour in the classroom (Classroom Behaviour) using a four-point Likert scale, and secondly, the students

Table 3: Respondents' age and sex

Age	Male	Female	Total
13	2	1	3
14	84	93	177
15	150	160	310
16	128	150	278
17	80	78	158
18	18	10	28
Total	462	492	954

"For these students 47.5 % of their caffeine source was caffeinated soft drinks, 34.7% was teas and coffees of various types and 17.8% from energy drinks."

Table 4: Respondents' religion

Religion	Male	Female	Total
SDA	167	194	361
Other Christian	156	157	313
None Christian Religion	37	57	94
No Religion	87	73	160
Total	447	481	928

Table 5: Language of the respondents' home

Language of the Home	Male	Female	Total
English	350	372	722
Other	69	68	137
Total	419	440	859

also self-reported their academic position within their class (Academic Performance) on a three-point scale: Upper third, middle third or lower third. T-tests and One-way Analysis of Variance were used to locate points of difference between respective respondent groups.

Results and analysis

Demographic data (age, religious affiliation and gender) collected about participants and their responses indicating caffeine consumption, follow. Subsequent analysis considers group differences in caffeine consumption and associated effects on learning (Classroom Behaviour and Academic Performance).

Respondents

The students in the 'Caffeine study' came from years 9, 10 and 11 and were aged between 13 and 18 years (See Table 3). A total of 954 sets of responses were entered into the computer for analysis, representing 462 males and 492 females.

A total of 674 reported their religion as 'Christian', 94 were of non-Christian religions and a total of 160 indicated that they belonged to no religion (see Table 4). Further, a total of 137 (roughly 14%) indicated that English was not the first language of their home (Table 5). This indicates that the respondents were not typical of the broader Australian population where about 40% in the 2011 Census indicated that they are not Christian and around 25% speak languages other than English in the home (ABS, 2011).

Caffeine consumption

Types of caffeine consumption

The caffeinated drinks consumed by 531 respondents over the course of 1 week are listed in Table 6. The 375 mL can of Coke was the most commonly consumed item, totalling 594 purchases within the week prior to completing the questionnaire. Its caffeine content at less than 40 mg is modest. However, it was the coffees and the 'energy drinks' that contained higher doses of caffeine. Purchasing or mixing a 450 ml mug of instant coffee (each containing approximately 108 mg of caffeine) was reported 167 times, with a further 156 purchases of the 250 ml cup of instant coffee (each containing 60 mg of caffeine). While consuming 250 ml of iced coffee (105 mg of caffeine) was reported 119 times, only 31 reported consuming 600 ml of iced coffee (252 mg of caffeine). Of the 'energy drinks' there were 134 purchases of Angel, 92 purchases of Pussy 250 ml, 66 purchases of Monster 500 (150 mg of caffeine), 65 purchases of V Energy 250 ml, 61 of Mother 500 (also 150 mg of caffeine), 56 of Red Bull 250, 52 of BadBoy and 48 or RockStar. A total of 43 respondents bought 'Shots' of highly caffeinated liquids.

From this data, it can be seen that caffeine source can be collapsed into three broad categories: Caffeinated soft drinks, teas and coffees, and energy drinks. For these students 47.5 % of their caffeine source was caffeinated soft drinks, 34.7% was teas and coffees of various types and 17.8% from energy drinks.

Table 6: Caffeinated drinks used by respondents in one week

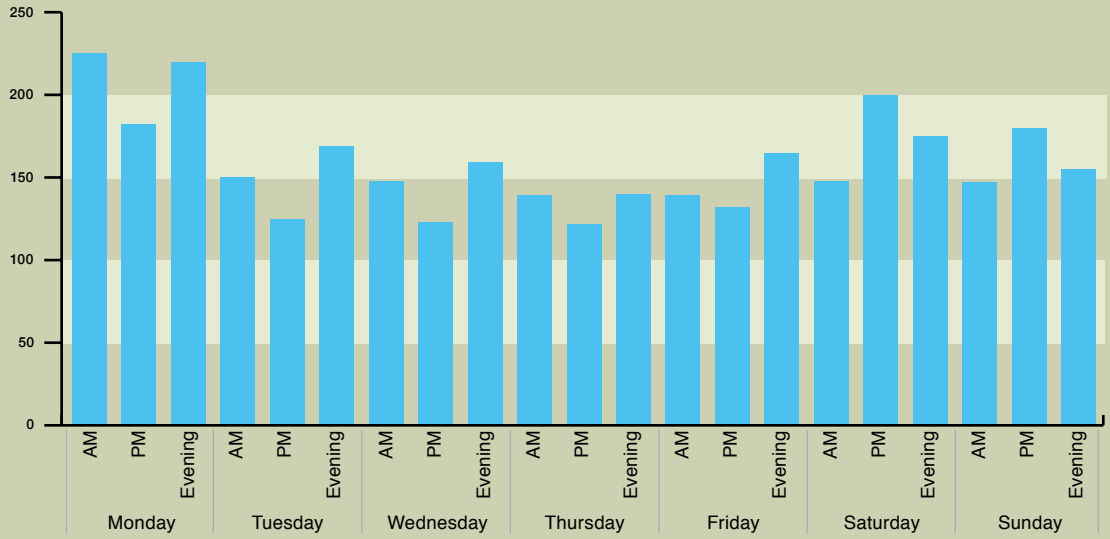
Drink	Weekly Consumption	Drink	Weekly Consumption
Coke 375	594	Iced Coffee 600	31
Coke 250	334	Cappuccino 450	30
Coke 600	238	Endorush 473	29
Pepsi 375	197	Iced Tea Tall	29
Black Tea 450	174	Espresso 250	24
Instant Coffee 450	167	Red Bull (Shot) 60	23
Instant Coffee 250	156	Iced Coffee Tall Glass	20
Black Tea 250	154	Red Bull 355	16
Angel 300	134	V Energy 350	14
Pepsi 250	132	Iced Coffee 375	14
Iced Tea 500	108	Plunger Coffee 250	14
Cappuccino 250	97	Climax	13
Pussy 250	92	Demon 500	13
Other Cola 375	84	Demon Shot	11
Other Cola 250	84	Red Bull 330	11
Pepsi 600	72	Iced Coffee 750	10
Iced Tea 250	70	Red Eye 330	9
Iced Coffee 250	69	Superman 250	8
Monster 500	66	V Energy (Shot)	8
V Energy 250	65	Demon 250	6
Mother 500	61	Wicked 475	6
Red Bull 250	56	ZU Energy 250	6
BadBoy 250	52	Plunger Coffee 450	6
Iced Coffee Cup 250	50	Wild NRG 375	5
Rock Star 473	48	Rock 250	4
BadBoy HotShot	42	Espresso 450	4
Mother 250	42	Flying Power Shot	1
Wicked 375	41	Pure Energy 250	1
Iced Coffee 500	39	Samedi 500	1
Other Cola 600	38	Smart Energy 250	1
Citron	33		
V Energy 500	32		

“Fifty two participants reported using in excess of 1200 mg over the course of a week, more than 171mg per day [in the region of risk]”

Total caffeine consumption

Overall, 501 respondents reported zero use of caffeinated drinks over the course of the previous week. A use of 600 mg or less for the week was reported by 315 respondents. Seventy-seven reported consuming between 600 mg and 1200 mg for the week, or between 85 mg and 171 mg per day. Fifty two participants reported using in excess

Figure 1: Caffeine consumption by 531 respondents in mg as calculated for the morning, afternoon and evening of each day for a week



"No significant gender differences were found in total caffeine consumption … There were, however, significant differences in caffeine consumption across age groups"

of 1200 mg over the course of a week, more than 171 mg per day (Table 7). In other words, while most respondents reported consuming modest amounts of caffeine in a week, a small proportion of users (about 16%) were potentially consuming quantities that placed them in a 'region of risk' (Gunja and Brown, 2012).

The average weekly caffeine consumption across the whole sample was 256.6 mg or 36.6 mg per day. For the caffeine users, however, the average weekly caffeine consumption was 473.7 mg or 67.6 mg per day.

Caffeine consumption distribution

Figure 1 provides the pattern of caffeine consumption over the course of a single week. It can be seen that Mondays and Saturdays were the two days in which caffeine consumption peaked. It is tempting to consider the Monday high point as the recovery time from weekend activities!

Religious affiliation and caffeine consumption differences

One-way analysis of variance results reveal differences in caffeine consumption rates across the respective religious affiliation rates [$F(3,929) = 6.939$, $p < .001$]. Tukey post hoc tests indicate that those who reported themselves as being affiliated with the 'Christian' or 'No Religion' groupings consumed significantly larger quantities of caffeine per week compared with those who reported themselves as being affiliated with the 'Seventh-day Adventist (Christian – SDA) Christian' and the 'No Religion' groupings (Table 8).

Gender and Age caffeine consumption differences

No significant gender differences were found in total caffeine consumption, with the males registering a weekly average caffeine consumption of 279.9 mg and the females of 232.6 mg.

There were, however, significant differences in caffeine consumption across age groups, with greater consumption as age increased [$F(3,941) = 3.084$, $p = .027$]. The 14-year-olds reported consuming 195.5 mg per week, the 15-year-olds 226.6 mg, the 16-year-olds 274.6 mg and the 17+ age group 334.3 mg per week.

There was a large number of students who did not consume any caffeine in the two weeks prior to the survey across the respective age categories. This is illustrated by the number of cups per day data outlined in Table 9. One cup of instant coffee or one caffeinated soft drink per day most often converts to an intake of just under 600 mg per week. For students aged 14, 53.3% reported they did not consume any caffeine in the previous two-week period, but this figure drops to only 35.8% for 17+ Years students. Also, 3.3% of 14-year-olds reported consuming 3+ cups of coffee per day but this figure increased to 8.4% for students aged 17+ years.

Overall, the level of caffeine consumption was

Table 8: Weekly caffeine consumption across religious affiliation groupings

Religious Affiliation	Mean Weekly Caffeine Consumption (mg)	Standard Deviation
Christian	323.4	537
Christian - SDA	176.3	403
Other Religion	212.6	394
No Religion	327.9	541

Table 9: The distribution of caffeine consumption across student ages

Caffeine consumption	Students 14 years	Students 15 years	Students 16 years	Students 17+ years
No Caffeine (0 cups per day)	53.3%	48.9%	42.0%	35.8%
0 to 600 mg per week (1 cup per day)	37.2%	38.8%	42.0%	47.5%
600 to 1200 mg per week (2 cups per day)	6.1%	8.8%	9.4%	8.4%
More than 1200 mg per week (3+ cups per day)	3.3%	3.6%	6.5%	8.4%

Table 10: Classroom Behaviour scale items

Classroom Behaviour (Chronbach's alpha = 0.70)	
Item	**Loading**
I do not get on well with my teachers	0.73
I often misbehave I class	0.71
I am frequently in trouble with my teachers	0.69
I do not enjoy classwork	0.64
I find classwork boring	0.60

Table 11: Mean values of male and female self-reported Classroom Behaviour Scales

Classroom Behaviour Scale (Positive): Mean Value			
Age Category	Males	Females	N
Age 14	2.58	2.79	180
Age 15	2.66	2.76	306
Age 16	2.63	2.87	275
Age 17+	2.82	2.95	178
Total	**2.67**	**2.83**	**939**

> *While caffeine consumption was relatively low, the current study did find a link to academic factors in school students.*

reasonably low. This is in line with The Australian Bureau of Statistics Health Survey (Kalisch, 2015), which found that older Australians consumed more caffeine than younger Australians with the over 30 years consuming a daily median intake of over 150 mg and daily mean intakes of over 170 mg for age groups 31-50 and 51-70 years (over 4 cups of black or 1.5 espresso shots of coffee). Caffeine consumption of greater than 1200 mg per day (3 plus cups of coffee) was less than 10 percent in all of the student age groups, however less than 10% of 14-year-olds consumed more than 1 cup per day.

Caffeine and learning

So what is the relationship between the level of caffeine consumption revealed in this study and student learning in the classroom? While caffeine consumption was relatively low, the current study did find a link to academic factors in school students. Two academic factors were investigated; the Classroom Behaviour scale was derived from five survey items (scale items and loadings are

"a general pattern of decreasing average scores on these scales [behaviour and performance] against the [increasing] … caffeine use."

Figure 2: Mean classroom behaviour ratings against caffeine consumption

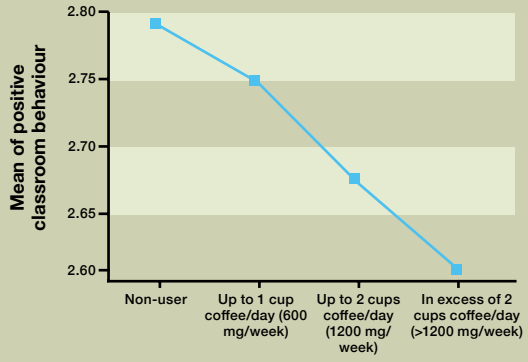
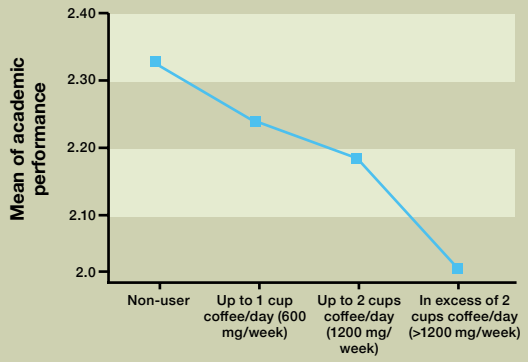


Figure 3: Mean academic performance ratings against caffeine consumption



outlined in Table 10). Class Position was self-reported in relationship to three levels (upper, middle, and lower third of the class).

Factors that co-relate with increasing caffeine use

The distribution of respondents' mean scores on the Classroom Behaviour scale is shown in Table 11. There was a significant difference in the Classroom Behaviour mean scale scores across the respective ages [F(3,938) = 5.017, p=0.002] with Classroom Behaviour ratings improving with age. As expected, the females registered significantly higher classroom behaviour means than the males [t(937) = 4.648, p=0.001].

The scores on the Classroom Behaviour and Academic Performance scales were examined against the categories of weekly caffeine consumption. Levene's test for homogeneity of variances (p >.05) indicated that population variances for each consumption group are approximately equal, enabling mean based analysis of the data. Graphs of these results are shown in Figures 2 & 3. These figures indicate a general pattern of decreasing average scores on these scales against the cup categories of weekly caffeine use. Cohen's d was calculated to determine the effect size of the significant difference between the non-caffeine user group and the high caffeine user group. For Classroom Behaviour [t(501) = 2.041, p = .042] Cohen's d for the difference between the caffeine use groups was 0.30 and for Academic Performance [t(501) = 3.210, p = .001] Cohen's d was 0.45; both small effects (Field, p. 32).

Finally, Structured Equation Modelling (SEM) using AMOS 24 software was performed to explore the relationships between Age, Gender, Religion Fit (the degree to which the student's religion was similar to the school's religion), Caffeine use, Classroom Behaviour and Academic Performance. Based on these variables an optimal model with all pathways being significant (Figure 4) was derived by making use of the iterative process of inspection of statistical significance of path coefficients and theoretical relevance of constructs in the model (Joreskog & Sorbom, 1993). The model as a whole fitted the data well with base-line comparisons fit indices, NFI = .970, IFI =.983 & CFI =.982; well above the 0.9 considered criteria for a good fit. Further the root-mean-square error of approximation was 0.035; less than 0.05 which is considered to indicate a close fit between data and the model (Bentler, 1980, Ho, 2006, Byrne, 2010).

The model indicates that 13% of the variance in academic performance was accounted for by Age, Gender, Religion Fit, Caffeine Use and Classroom Behaviour. As student age increases total weekly caffeine use increases (beta = 0.10), and the female students are more likely to exhibit positive classroom behaviour (beta = 0.14). What is important to note is that Caffeine Consumption (beta = -.07), and Religion Fit (beta = .11) both have small (but opposite sign) direct effects on Academic Performance, but Classroom Behaviour (beta = 0.31) has a larger positive direct effect. The pathway analysis suggests that an increase in caffeine consumption will have a small negative impact on academic performance both directly and through the mediating variable Classroom Behaviour. Further the degree of similarity between the student's religion and the school's religion has a positive impact on Academic Performance.

Based on these findings it can be concluded

Figure 4: Academic performance, caffeine use and classroom activity

increase in caffeine consumption will have a small negative impact on academic performance both directly and through the mediating variable Classroom Behaviour.

> *The study … found that increasing caffeine- use was related to lower ratings of classroom behaviour and academic performance. … [but] makes no claim of causality*

that student caffeine intake has a small negative effect on both student classroom behaviour and student academic performance. Interestingly a previous study by the article's authors (Greive et al., 2014) indicated that sleep problems also had an impact on classroom behaviour and academic performance and a combination analysis is required to generate a greater understanding of the impact of both caffeine use and sleep problems on students' classroom activities.

Conclusion

This study has established that caffeine is a commonly available and unregulated psycho-active substance and has explored the use of caffeine by school students. The respondents were students in years nine to 11 in Australian Christian schools and were not completely representative of Australian youth. Just over half of the respondents (55%) revealed that they had used caffeinated drinks in the week previous to the completion of the survey. While the most popular caffeinated drink was Coca Cola, it was the coffees and energy drinks that provided the higher doses of caffeine. A total of 142 respondents (approximately 15%) admitted to using in excess of 600 mg in the week prior to the survey. In the same period, 27 respondents indicated use of in excess of 2000 mg of caffeine.

The study also found that increasing caffeine-use was related to lower ratings of classroom behaviour and academic performance. While the paper makes no claim of causality, that is, the paper does not argue that caffeine use by the students was responsible for these lower ratings, it does claim however, that caffeine-use is not going to alleviate the situation, rather it is likely to aggravate these classroom issues.

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Pre-kindy purposes, benefits and strengths: Reflections during maternity leave

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Key words: Pre-kindy, purposes, benefits, strengths

The past two decades have seen the emergence of a unique and very popular class for children in Adventist Schools Australia (ASA) schools: the pre-kindy class. One class that parents appreciate and schools are anxious to embrace.

> *children who participate in quality early education and care programs, … prior to starting school, experience benefits throughout and beyond their schooling years*

A contextualising background

Pre-Kindy classes are prior to school classes, usually made up of 3-5yr olds, who vary in their attendance patterns, between 2-5 days per week. Many city schools operate their pre-kindy classes 5 days a week, while those in the country typically operate 2-3 days per week. The ASA system currently operates 20 such pre-kindy classes. These classes have proven to be a valuable feeder to school enrolments, introducing parents to the ASA school system and encouraging them to consider this system as their primary school system of choice. What appears to have been the motivating factors behind school administrators decisions to operate pre-kindy classes, are both school readiness and prospective school enrolments. Currently 1:5 children in Australia have been identified as not socially, emotionally or academically ready for school (AAP, 2016). Boys appear to be more at risk than girls and indigenous children are 2.5 times more likely to be vulnerable to school failure, (AAP, 2016). ASA Pre-Kindy programs operate in this climate.

This paper seeks to explore the purpose, benefits and strengths of such programs by focusing on one teacher's reflections on her experience teaching in a highly multi-cultural, city ASA primary school's pre-kindy.

Claimed purposes for pre-kindy classes

Each year, state government education departments provide parents with information on how to prepare their child for school. These fact sheets and articles include information and checklists about what has become labelled as school-readiness. The notion of school-readiness has been given considerable attention in the community as well as within educational realms, pre-kindergarten programs have become part of the strategy for helping students to develop school readiness skills in preparation for primary school (Rosier &McDonald, 2011; Hatcher, Nuner & Paulsel, 2012). They intentionally prepare children for the academic demands of primary school.

Transition to school programs are common across all sectors of early childhood education and care, however, not all agree about what competencies, knowledge and skills constitute school readiness. Education and care services governed by and responsible to the Australian Children's Education and Care Quality Authority (ACECQA, n.d.) National Quality Standards appear to have a broader focus to their notion of school readiness and are motivated by education and care goals that focus on socio-cultural notions of the child developing knowledge, skills and dispositions for learning, along with a sense of identity, well-being & communication, with-in a caring community. What appears to be common across all prior to school early education and care programs is the opportunities they provide children to extend their learning, build relationships, and work collaboratively together (Dockett, & Perry, 2014). Transition to school programs are highly valued because research has found that children who participate in quality early education and care programs, (like pre-kindergarten), prior to starting school, experience benefits throughout and beyond their schooling years (Australian Government, 2012,).

Claimed benefits of pre-kindy classes

The benefits and strengths of pre-kindy programs appear to lie in their ability to connect children, families and professionals through conversations and relationships into a community that supports children's learning and development. This

community scaffolds smooth transitions between the prior to school education and care environment and the school educational environment. Children who engage in these programs feel a sense of belonging to the school community before they begin school. This sense of belonging enables them to feel safe, secure and confident as they begin their kindergarten year. Parents also feel this same sense of belonging because of the relationships they have established with the school during the child's pre-kindy years.

Personal reflections on strengths and benefits

The following reflections highlight what I perceive to be the benefits and strengths of my pre-kindy program. A program that had as its ultimate goal enabling the children in my care to transition smoothly to 'big school' and to experience successful learning and development in their kindergarten year.

A) Physical environment

When parents enrol their child into a Pre-Kindy class with the intention that they will carry on through the primary years at the same school, they are providing their child with a place of continuity and familiarity. In Prep-Kindy, after students have had the opportunity to settle into their new room and routine, they have the new scope to attend assembly, chapel and the library, which are all located within the school grounds. Being familiar with the school environment will ensure that when the child returns to the school the following year, they feel comfortable with the physical surroundings (e.g. classrooms, playground, lunch spaces, tuckshop), hence there will be one less adjustment they need to make as they settle into kindergarten.

B) Familiar faces

Throughout the year, Pre-Kindy students have the opportunity to become acquainted with the other teaching staff of the school. These interactions occur during assemblies, chapels, lunch and play time. When Pre-Kindy students interact with other teaching staff on a regular basis, trust is built and relationships are formed. These relationships will prove vital as they move through the primary years at the school. Familiar faces and warm relationships ensure that student transitions are non-threatening. It will be the familiar face of their old Pre-Kindy teacher (waving to them over the fence) and the other staff that will ease the child's anxiety and build up their confidence as they settle into 'big school'. It is also necessary to note that starting kindergarten is not only a big transition for each child but for each parent. It will be the reassuring smiles of the well-known teaching staff that calms the nervousness of a somewhat emotional parent, on their child's first day of kindergarten.

C) Integrated and intentional program based on the Key Learning Areas of the Australian Curriculum, Assessment and Reporting Authority (ACARA) curriculum

All ASA pre-kindy programs have developed integrated and guided programs that are strongly based on the KLA's of Early Stage One (i.e. the first year of formal school). Highly integrated programs have been developed with the intention of exposing students to the Early Stage One content in a fun, meaningful and relevant way. Each week students learn about the letter of the week. For that whole week, art activities, show and tell sessions, cooking, writing and reading lessons are based on the focus letter. When content is presented in a variety of modes, students are able to make connections within and across the key learning areas, as well as connections to their own personal experiences. The nature of integrated programs also provides students with the time they need to accommodate and assimilate the information covered. Pre-Kindy programs that focus on integration allow students to be exposed to the kindergarten curriculum through

"The nature of integrated programs … provides students with the time they need to accommodate and assimilate the information covered."

Figure 1. Learning about books

fun and diverse learning experiences.

Pre-kindy programs support & guide children's literacy development through exposure to experiences in phonemic awareness, comprehension, story writing, and listening, as well as the viewing & critiquing of multimodal texts. An aspect of my literacy program that is particularly relevant for English as an additional language learners, is an intentional focus around reading comprehension—using strategies such as visualizing the picture, making connections to past experiences, vocab recognition and phonemic awareness. Both

the principal of the school and the children's parents expressed their desire for children to be exposed to early reading so that they would have a *good grasp* of reading before they began school. It became apparent that the Asian parents saw introducing their child to *academics* as a major purpose of the pre-kindy curriculum. They were especially happy when their children came home actually starting to read words, identify letters and sounds, and began to blend sounds to make words. The principal and I felt that a literacy program of this nature would support children towards a positive start to the school literacy program.

Children in the pre-kindy program were also exposed to opportunities to develop mathematical thinking, understanding & skills, through engagement with the early stage 1 mathematics curriculum. Their physical and gross motor and fine motor development was supported through their involvement in a PDHE curriculum, with manipulative experiences and gross motor play experiences.

> *"Rather than detracting from academic learning, play appears to support the abilities that ... promote school success"*

D) Play

Most pre-kindy programs schedule some time each day, outside of recess and lunch breaks, for the children to engage in play-based experiences. Often this occurs after the more formal KLA content has been covered, as a reward for sustained engagement with the intentional program. In some pre-kindy programs play is intentionally embedded within the KLA content because the teachers in these programs understand that play is an essential characteristic of young children's learning and development (Hirch-Pasek, Golinkoff, Birk & Singer, 2009). Play is children's work. It "provides a supportive environment where children can ask questions, solve problems and engage in critical thinking." Additionally it provides children with pressure free "opportunities to learn as they discover, create, improvise and imagine" (Australian Government Department of Education, Employment & Workplace Relations, 2009, p. 15). There are strong links between children's engagement in play-based learning experiences and children's capacity to remember, self-regulate, develop and practice oral language, as well as developing social skills. "Rather than detracting from academic learning, play appears to support the abilities that … promote school success" (Copple & Bredekamp 2009, p. 14 - 15).

I used play in my program to help foster relationships among the students, allow space for them to develop creativity and build linguistic skills. I was always surprised how they could turn a simple piece of outdoor climbing equipment, into a cubby house where all the girls would gather, seeking refugee from those chasing them. They were able to teach me how to look at something from more than one angle. I will always remember seeing how the pretend play kitchen sink quickly became the rinsing sink for a very productive hairdresser salon.

E) Routines

The concept of routines includes whole group, small group instruction and learning centres as well as the flow of the timetable through arrival, clean up, hand washing, meals and transitions, to departure. Pre-Kindy classrooms offer young children opportunities to experience all of these routines. Routines are important because they support children's development of executive function by helping them feel secure, remember and predict happenings, practice skills, as well as plan and organise the flow of their day (Bodrova & Leong, 2007).

Routine cards are displayed in the classroom and are used to explain the daily schedule. Routine cards help students to understand the school 'system' (which is often different to that of other early learning institutions) and become familiar with subject names and other school activities like assembly and chapel. Since time is a somewhat abstract concept for preschool children, the visual routine board allows students to access information, at their level, about what is happening next. This in turn, helps students to become confident and happy learners. By the time students begin kindergarten they will already be accustomed to 'how things run' in the classroom and therefore, instead of trying to work out how the 'system' works, they will be ready and equipped to engage in the learning.

Figure 2. Learning about routines

F) Autonomy & self- help skills

While every day is a busy day in the pre-kindy room, considerable time is invested in teaching students the skills they need to become autonomous within a classroom context. Students learn: how to wash their

hands correctly, to open lunch boxes and wrappers, what food to eat at which break-time, how to take care of, un-pack and pack-up their belongings. The transition to 'big school' can be made easier if students are able to carry out these basic tasks from day one of kindergarten, with minimal teacher assistance. This sense of competence in managing one's self will certainly aid in forming a positive attitude about starting school.

The approach taken to behaviour guidance was to support children in developing executive function, a function that is pivotal to their success in school environments. Executive function is the ability of a child to manage their attention, emotions, remember and think about information and control their behaviour, in order to reach goals. It involves the child's ability to integrate their social, emotional and intellectual capacities, (Galinsky, 2010, p. 6; Whitington, 2012). I chose to use the 123 Magic approach to behaviour guidance (Phelan, n.d.) that relies on giving children warnings and allowing them to make choices. Children are helped to label and describe their feelings, picture the day, categorise and sort, and with one and two step instructions to scaffolded them, to plan their activities.

G) Building relationships and social skills
Pre-Kindy programs support children in building relationships outside the family circle by supporting children's emergent social intelligence, through practice & reflection. They help children to understand and assess the feelings of others, control expressions of anger, (Kerns, 2010), negotiate and resolve conflicts, work co-operatively with others and develop the skills needed for entering and being a part of group situations (Schiller, 2009).

Students in pre-kindy programs have the opportunity to relate to and become friends with different students. This arrangement encourages students to establish multiple friendships rather than with only one or two specific children. This provides opportunities to implement and practise essential social skills, thus expanding and developing their repertoire of intrapersonal competencies. When students progress to attend kindergarten at the same school, the friendships they have formed in pre-kindy play a vital role in ensuring that they feel comfortable among their peers.

H) Parent perceptions of my pre-kindy program
The parents and grandparents of the children in my class were very interested in their child's progress. I'd talk to them every day about their child's day, celebrating with them the child's successes each day. I learnt the parent's names and wanted them to feel welcome in my classroom. I chatted with them to discover what was happening in their families. I tried to listen to them and to get things done for them, (in response to their requests). I was very conscious of sharing this child with them. I wanted them to know I cared about their family and their child and wanted to help their child reach their full potential.

A pre-kindy report with a section for each KLA and a section for social development was created. The parents were very happy with this. They said, "Now I know exactly what my child can do." Some parents were very concerned and embarrassed when their child couldn't do something, so I had to explain that they just need time to develop this skill. The report allowed parents to support their child's learning by addressing, through their everyday activities at home, any areas they were struggling in (e.g. counting pegs while hanging out the washing). I also explained that the role of pre-kindy was to expose the child to the content so that it was familiar when it was taught in Early Stage 1. I also collated a portfolio of work for each child with samples of their work and pictures of their day. Parent really liked this, too. These reports had the potential to help the kindy teacher, enabling a review of who was coming into class and their documented skills. When she interviewed parents, before the child went to school, she had useful information about the background of the potential student. This was a real advantage that derived from this pre-kindy program.

I) Teacher's Aide
I was blessed to have a teacher's aide present in the classroom with me at all times during the pre-kindy day. I would like to acknowledge Shiwani's role as pivotal in the success of the program.

I soon encouraged her to lead out in lessons with the whole class while I was dealing with other issues (instead of her just assisting with things like clean up, prepping or packing up activities). I wanted the children to see that she was another teacher in the room, just like me. Not just an 'assistant'. We were able to work like clock-work. Sometimes she led and I supported, but mostly she supported and I led. I believe the children could see the kind of relationship we had—as team members who were 'on the same page'. This certainly minimised the occurrence of challenging behaviour. It also meant that when a casual replacement teacher came, Shiwani could 'hold the fort' in a stronger supporting role. She was confident enough to lead out or to offer abundant support. She knew my programs, she'd taught from them herself, so there were never any 'unproductive' or 'busy- work' days. The kids knew this! Our programs carried on each day of the school year. This, I believe, was a comfort for parents too.

"Pre-Kindy programs support children in building relationships outside the family circle by supporting children's emergent social intelligence"

> *ASA pre-kindies are uniquely positioned … to familiarise children with the school program, routines and personnel, resulting in … opportunities for continuity of education.*

Consistency for the children is a key to their well-being and continuity of learning.

J) Biblical world view

Pre-kindy programs are instrumental in introducing children and their families to a Biblical worldview and its values through a community of faith and learning (ASA, 2015). Many children who attended our pre-kindy came from non-Christian backgrounds. During their time in pre-kindy they were introduced to God, Jesus and a Christian world view through Bible stories, songs, discussions and crafts. Families expressed their appreciation for the values and care their children were exposed to. A few parents came to tell me how their child had been 'sharing Jesus' at home by showing their family how to pray at meal times and teaching them Bible songs. At the end of the school year they'd receive a Bible based gift that had been used in our class during their time in pre-kindy. These gifts were well received by the students and their families despite the fact that most of them did not share the same religious background. This is potentially attributed to the close relationships formed throughout the year, and because of this we were able to minister to each family without having to face the usual barriers that often can come with sharing the Gospel within a community. Pre-kindy was 'my' little mission field. Many of these children went on to attend local primary schools. The pre-kindy program was instrumental in raising the local community's awareness of the Christian worldview and value system.

In summary

The reflections shared above, have sought to highlight the purpose and potential benefits and strengths of ASA pre-kindy programs. There is much to celebrate about these current programs:

- Many 4 yr olds have been supported to be ready for school
- Seamless transitions between pre-kindy and school have occurred
- School enrolments have flourished
- Parents have been very happy with the program and have formed positive relationships with school staff
- Children with languages other than English have been provided opportunities to acquire English proficiency before they begin formal schooling

While it is true that many practices can be claimed as strengths of these programs, it is also pertinent to note that a number of the claimed strengths of pre-kindy programs are equally applicable to quality long day care and preschool education programs occurring outside of the immediate school environment. These types of services typically operate an intentional transition to school program, in the year prior to school, that achieves many similar outcomes to those claimed by ASA pre-kindies, however, because of their physical location in school grounds, ASA pre-kindies are uniquely positioned in their ability to familiarise children with the school program, routines and personnel, resulting in unique opportunities for continuity of education. The benefits and strengths of ASA pre-kindies highlighted in this article can contribute significantly to a child's successful transition to school.

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BOOK AND FILM REVIEWS

Tell The World

Director: Kyle Portbury
Writers: Aaron Hartzler (screenplay)
Genres: Biography | Drama | History
Release Date: 1 August 2016 (Australia)
Filming Locations: Ottawa, Ontario, Canada

Production Companies
A Frame Productions (in association with)
Adventist Media Network (produced by)
Tell the World

Source: IMDb. (http://www.imdb.com/title/tt2624344/)

Daniel Reynaud

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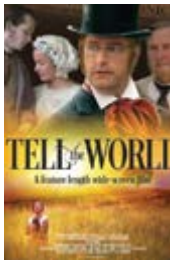

***Tell the World* is an ambitious film that represents a step forward for an Adventist production, breaking out from the traditional 'talking heads' documentary. It is a difficult film to label, because it looks like a movie, through imagined reconstructions of characters and conversations, but acts like a documentary, because its primary role seems to be to convey information. In effect, it is really a moviementary, a dramatized history of the origins and foundation of the Seventh-day Adventist Church. It represents progress in an Adventist understanding of how visual media works best: as a communicator of attitudes, emotions and values rather than of information.**

Tell the World begins with the origins of the Millerite movement in the 1830s, with William Miller as the central character, switching about halfway through to Ellen White, as the Millerites gradually organize into the Seventh-day Adventist Church with distinctive doctrines and emphases, such as the Sabbath, the health message and education. The film attempts to explain the key theological and religious ideas that drove the church's pioneers, while at the same time fleshing out the founders of Adventism so that they come across as real people.

The cinematic step forward is in dramatizing the facts, with the intention of making denominational history more appealing and memorable. And it has done this well. The high production values result in a film that looks thoroughly professional, with quality sets, locations and costumes. The professional actors are almost uniformly good, creating believable characters and credible emotions. The cinematography is excellent and the directing assured. One shot in particular stood out for me: Ellen White standing on a snow-covered ridge, in mourning after the death of her eldest son Henry. Its exquisite framing and tone speaks more eloquently of sorrow than does copious screen weeping. Though to be fair, Tommi-Amber Pirie, who plays Ellen White, handles her role with aplomb, as convincing with her vision scenes as with the emotionally-charged scenes of the loss of two of her boys.

The film is heavy with history, with the screen writer struggling to cram in the many theological issues of the era, especially the now-obscure ones of the Millerite period, while ensuring that the film doesn't become bogged down with theological exposition at the expense of the narrative. The result is an unhappy compromise where there is both too much exposition for the story to sustain, and too little exposition to really understand the issues.

This compromised outcome gets to the heart of what is weak in the film: it is simply attempting too much. It seeks to explain the bulk of Adventist nineteenth-century history in the context of watchable drama and engaging characters. The result is a film that doesn't quite pull off any of those goals. In fact, the medium of film is ill-suited to explaining complex ideas such as the Sanctuary doctrine; it is more effective in offering modern viewers an approachable and human Ellen White, along with other pioneers, which to its credit it partially accomplishes. To see the interactions, disagreements and arguments of the principal personalities, as well as the nice touches of the critics of Adventism in the tavern, was one of the most persuasive features of the film.

Rightly handled, *Tell the World* is an ideal classroom tool for the teacher of denominational history, rather than a stand-alone cinematic text. Its imposing length and density of historical detail

"The professional actors are almost uniformly good, creating believable characters and credible emotions. The cinematography is excellent and the directing assured."

suggests that it is best presented not at a single screening, but episodically, with time to discuss and unpack the story further with the assistance of additional textual information. The name-dropping that occurs through the film of significant historical personages offers the potential for classes to research the characters more fully, as well as explore the theological issues mentioned but not detailed, such as 'The Midnight Cry,' and the 'Shut Door.' The film's interpretations of Adventist history will also offer opportunities to examine cause and effect, and the role that individuals have played in shaping Adventist thought and practice. Many of the key Adventist ideas, such as the inspiration of Ellen White and the question of the Sabbath, have an apologetics case presented in the film. These too could be explored as arguments for distinctive Adventist doctrine.

While it is flawed in its attempt to communicate an excess of Adventist apologetics and history, the church is to be congratulated for its increasingly assured and effective use of visual media. Gradually we are learning that film is not very good at conveying hard information—but all is not lost. Historical movies capture audiences who ordinarily won't read a book, and often act as catalysts for viewers to do their own research. Perhaps the next move advance is to produce a mini-series, allowing characters to be fully developed, and acting as inspiration for audiences to seek out the historical detail which is best presented in print rather than on screen.

TEACH

Editor's Notes:
1. A trailer of the film can be downloaded from www.telltheworldfilm.org/
2. *The Tell the World* DVD can be purchased from Adventist Book Centres (ABC) for $5:00.

How to Develop the Habits of Outstanding Teaching

Mark Harris (2016). New York, NY: Routledge. 178pp.
ISBN: 978-1-1-138-95047-4

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Many of us who are in the latter part of our careers will remember our first car that often came with a workshop manual full of instructions and repair protocols. That was in the days when cars were simple enough for the average person to tinker with. A little later in our histories we saw the introduction onto bookshop shelves of the '. . . for Dummies' series of 'how to' manuals such as Personal Finance for Dummies.

How to Develop the Habits of Outstanding Teaching by Mark Harris sounded to me like another textbook on teaching theories. When I had a quick look through it however, my attention was immediately gained because I saw that it was full of tables and templates, lists and thought bubbles. On closer inspection I found that this book is more like a manual for high level teaching skills, than an academic book. Harris from experience is able to pack a whole lot of tricks, routines, templates, self-assessments, lesson plans, flowcharts, summary tables and much more into a mere 150 pages.

The methods of great teaching are employed in written form in this book. Most teachers would find themselves captivated and excited as they find practical tips they can't wait to employ in their classrooms.

Many of this era's important issues and buzz words are incorporated into the chapters and expanded on in a most practical fashion. Topics such as self-reflection, differentiation, teaching literacy, developing outcomes and success criteria, great questioning, lesson planning, classroom management and developing resiliency in students are all considered along with practical tips to excel as a teacher in these areas.

This book can easily be read from cover

to cover as the teacher retrieves ideas, but it can equally be used as that 'workshop manual' to bring an average teacher into the realms of greatness. I believe that the 'reader' will quickly become a 'user' if they have a desire to lift their teaching performance. Whether the 'user' is a new graduate, or an experienced teacher choosing not to become stale, this book needs to be in their 'toolbox'.

Why I Try to Believe: An Experiment in Faith, Life and Stubborn Hope

Nathan Brown (2015), Warburton, Vic: Signs. 102pp.

Becky De Oliveira

Author, and Editor of Christian lifestyle magazine LIFE.info

It's an interesting word—*try*. What does it mean to try? Does it mean to throw the full weight of your passion and effort behind an endeavour, like one might do in trying to win a gold medal at the Olympics? Or does it connote a half-hearted attempt, such as when a person politely refuses an invitation? "Sounds great! I'll try and see if I can make it."

Most of us claim to be trying to do things all the time. We try to get to work on time. We try to be good spouses, loving parents, helpful members of our communities. When faced with failure, we often offer self-defenses that rely heavily on the supposition that we have, all evidence to the contrary, tried. Believe me, I tried. I tried everything I could think of. We spout popular motivation quotes that encourage trying as a form of dauntless perseverance: *If at first you don't succeed, try, try again*. We urge trying as a way of getting out of a rut, sampling new experiences—no commitment necessary. Just try the sushi. Why not try wearing a different jacket? Try a new sport?

The concept of trying is either a nod to an extreme and extended effort to something—usually impossible—or an absolute exercise in non-commitment. Sampling. Showing positive intentions without actually having to do anything. Master Yoda of Star Wars fame has, of course, the best line containing the word *try* ever uttered by a puppet or computer generated image: "Do or do not. There is no try."

You can see where a certain personality might react badly to Brown's title—as he acknowledges early in the book when recounting the negative reaction he received from a group wanting "more certainty, perhaps fewer questions, in relation to their faith" (p. 11). Why do you have to *try* to believe? Do or do not. If you acknowledge that your belief comes down to a matter of trying, are you in fact saying one of the following: one, belief is probably impossible anyway; two, you have no intention of believing, but want to seem like you might; or three, believing is a novelty for you, something you're going to kick around until you get tired of it.

Trying is a lacklustre concept when it comes to actions that are a mere matter of *doing*. If you're trying to get out of bed on time and failing consistently, well, you aren't trying very hard. But you can't compel yourself in matters of the heart and belief is one of those intangibles. Like love. You can certainly behave in ways that are 'loving', but you absolutely cannot manufacture the feeling of love. Most of us probably worry about this more than we should.

The cry of the man in the Gospel of Mark, "I believe; help my unbelief!" (9:24) is one to which we can all relate. Sometimes a commitment to *trying* is the best we can muster—in our relationships, our work, our faith. Circumstances cause the ground to shift beneath our feet. Most of us will hit spiritual lows, or experience setbacks and tragedies that make us wonder what life is all about—and if our faith in God is pure foolishness. What we choose to do at that point—and Brown makes it very clear faith is an active choice—marks a clear fork in the road.

The quiet continuation of a lifelong inward struggle doesn't tend to make the headlines. Human beings tend to be far more interested in dramatic deviations from the norm. No one pays you much attention when you stick with your job, remain married or continue to be a committed and involved member of a religious faith. But at a certain point—probably many points—each of us faces a basic choice: Do we invest in what we've invested in before, or do we dump it all in search of something better?

Brown's good friend, former Hollywood

Seventh-day Adventist Church pastor Ryan Bell, made headlines when he declared 2014 his "year without God," and generated a great deal of discussion from those sympathetic and those hostile to his experiment. While *Why I Try to Believe* was partly prompted by Brown's struggle to make sense of Bell's experiment, it never appears to be trying to demonstrate that Bell—or any atheist—is wrong. Brown writes, "I am not setting out to critique or criticise my friend" (p. 5)—and, in fact, Bell read and responded to the manuscript at several points in its creation. Brown's primary goal is to create what he calls a "personal apologetic" (p. 5) that "will be counted among the positive results of his [Bell's] public investigation of the nature of believe and non-belief" (p. 5).

This is what the book does extremely well: In offering his own struggles—the inevitable losses that characterise mid-life (Brown is now 42)—including the suicide of a good friend, along with the ubiquitous search for meaning and a faith that is intellectually satisfying, Brown invites his readers to ponder their own reasons for trying to believe.

The example of John Woods, a member of the Victorian state parliament in the 1880s, offers a glimpse into how Brown sees himself, and of the kind of character he hopes to help his readers tease out of their own experiences. Woods mounted an argument in favour of using local stone for Parliament House and, having lost the argument, managed to get a block of sandstone erected as a symbol of his opposition. It stands in Melbourne today—and is Brown's favourite spot to take visitors. He notes while some have "dismissed Woods' monument as an act of petulance," he sees it "as something more positive, an act of stubborn hope" (p. 23).

Hope forms the idealogical core of this book. It's no feel-good sloppy sentiment, either. There is clearly a serious and thoughtful person behind these pages—not one given to easy answers or platitudes. Hope is useless as a form of daydreaming or escapism, but it takes on real power as it "changes things and changes us" (p. 25) and can be "a reason in itself to try to believe" (p. 26). Part of this hope springs from a conviction that the answers do not lie within oneself. Brown ultimately concludes that he can't make it on his own, that he can't find enough within himself or learn quickly enough from his own mistakes. An important part of making the choice to "try to believe" is the acknowledgement of needing a higher power—it "is about something, Someone and a story beyond me" (p. 105).

This stands in contrast to what Bell concluded after trying his year without God—which led to a decision for atheism. He writes, "Without dependency on a cosmic saviour who is coming to rescue us, we are free to recognise that we are the ones we're waiting for. If we don't make the world a fair and habitable place, no one else is going to do it for us. Life does not need a divine source in order to be meaningful. Anyone who has seen a breathtaking sunset or fallen in love with another human being knows that we make meaning from the experiences of our lives; we construct it the way we construct any social narrative" ("Why You Don't Need God," CNN, January 9, 2015).

Brown would likely agree with a majority of the ideas contained in this paragraph. A strong believer in social justice and in action as a crucial component of Christian faith, he seems likely to resonate with the idea that we can't simply wait around for a "superman"-type character to make right all that is wrong. And of course we make meaning of our own experiences—that seems to be Brown's point. For him, "belief is worth trying" (p. 6). He frames his own life within this context and considers "what is important and good, as well as choosing how to respond to the experiences life presents to each of us, such as love and grief, pain and wanting to make a difference, growing up and growing older" (p. 6).

Why I Try to Believe is an excellent book for a small group to read and discuss together. The reflection questions at the end provide a ready-made and valuable framework around which to structure conversation, helping people figure out how their own experiences have built or shaken their faith. For all of us, this is an experiment that is ongoing for as long as our lives last. Acknowledging that there are no easy answers, but that commitment to God through faith is worthwhile anyway, Brown challenges us in a quiet and deeply respectful way to "walk on" in faith. He makes it seem like a noble approach. The last line of the book reads, "As for me, I'm still trying to believe" (p. 115). TEACH

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